INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • Fax (317) 233-6647 • www.idem.IN.gov

Mike Braun
Governor

Clint Woods
Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Significant Revision to a
Federally Enforceable State Operating Permit (FESOP)

for Linde Advanced Material Technologies, Inc. in Marion County

Significant Permit Revision No.: 097-50712-00060

The Indiana Department of Environmental Management (IDEM) has received an application from Linde Advanced Material Technologies, Inc., located at 1245 and 1415 Main Street, Indianapolis, Indiana 46224 and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222, for a significant revision of its FESOP issued on April 1, 2024. If approved by IDEM's Office of Air Quality (OAQ), this proposed revision would allow Linde Advanced Material Technologies, Inc. to make certain changes at its existing source. Linde Advanced Material Technologies, Inc. has applied to add new specialty powder handling emission units EUS-R&D and EUS-26 and two (2) hydrochloric acid (HCl) storage tanks.

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g., changes that add or modify synthetic minor emission limits). The potential to emit regulated air pollutants will continue to be limited to less than the Title V and PSD major threshold levels. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

A copy of the permit application and IDEM's preliminary findings have been sent to:

Speedway Public Library
5633 W 25th St
Speedway IN 46224

A copy of the preliminary findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

A copy of the application and preliminary findings is also available via IDEM's Virtual File Cabinet (VFC) located at https://www.in.gov/idem/legal/public-records/virtual-file-cabinet/. Once you have accessed VFC, you will then have the option to search for source related documents using a variety of criteria. To find documents related to this air permit, click on "Advanced Search", specify "OAQ" in the Program search field, specify the five-digit permit number "50712" in the Permit # search field, then click the Search button at the top or bottom of the webpage.

How can you participate in this process?

This notice is posted on IDEM's website (https://www.in.gov/idem/public-notices/). The date that this notice is posted on IDEM's website marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked, faxed, emailed, or delivered in person by the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit by sending a written request to IDEM at the address below. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If IDEM decides to

conduct a public hearing and/or public meeting, IDEM will post a separate announcement of the date, time, and location of that public hearing and/or public meeting on IDEM's website (https://www.in.gov/idem/public-notices/). At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number SPR 097-50712-00060 in all correspondence.

Comments should be sent to:

Mehul Sura
IDEM, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for Mehul Sura or (317) 233-6868
Or dial directly: (317) 233-6868
Fax: (317) 232-6749 attn: Mehul Sura
E-mail: msura@idem.IN.gov

In order to notify you of our final decision regarding this permitting action, your U.S. mailing address must be submitted with all comments.

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/public-participation/; and the Citizens' Guide to IDEM on the Internet at: https://www.in.gov/idem/about/citizens-guide-to-idem.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the addresses indicated above and will also be sent to the local library indicated above.

If you have any questions, please contact Mehul Sura of my staff at the above address.

Madhurima Das

Madhurima D. Moulik, Ph.D., Section Chief
Permits Branch
Office of Air Quality

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Mike Braun
Governor

DRAFT

Clint Woods
Commissioner

Michael Hess
Linde Advanced Material Technologies Inc
1500 Polco Street
Indianapolis, IN 46222

Re: 097-50712-00060
Significant Revision to
F097-46563-00060

Dear Michael Hess:

Linde Advanced Material Technologies, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F097-46563-00060, on April 1, 2024 located at 1245 and 1415 Main Street, Indianapolis, Indiana 46224 and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222. On August 31, 2026, the Office of Air Quality (OAQ) received an application from the source requesting to add new specialty powder handling emission units. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a Significant Permit Revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

Pursuant to 326 IAC 2-8-11.1, the following emission units are approved for construction at the source:

(a) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(b) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-26	5.25	DC075 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.

(c) Two (2) hydrochloric acid (HCl) storage tanks for pH control, identified as HCl tank 1 and HCl tank 2, approved in 2026 for construction, each with a maximum HCl usage capacity 300.0 gallons of HCl per year and storage capacity of 150 gallons and exhausting indoor.

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The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this permit revision approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

Commenced Construction

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the Significant Permit Revision into the permit.

All other conditions of the permit shall remain unchanged and in effect. Please find attached the entire FESOP as revised, including the following revised attachment(s):

Attachment B: National Emission Standards for Chemical Manufacturing Area Sources [40 CFR Part 63, Subpart VVVVVV] *(revised)*

Attachment E: National Emission Standards for Stationary Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ] *(revised)*

The permit references the below listed attachment(s). Since these attachments have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this revision:

Attachment A: New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR Part 60, Subpart Dc]

Attachment C: National Emission Standards for Area Sources: Paints and Allied Products Manufacturing [40 CFR Part 63, Subpart CCCCCCC]

Attachment D: National Emission Standards for Area Source Standards for Plating and Polishing Operations [40 CFR Part 63, Subpart WWWWWW]

Attachment F: National Emission Standards for Halogenated Solvent Cleaning [40 CFR Part 63, Subpart T]

Previously issued approvals for this source containing these attachments are available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

Previously issued approvals for this source are also available via IDEM's Virtual File Cabinet (VFC). To access VFC, please go to: https://www.in.gov/idem/legal/public-records/virtual-file-cabinet/.

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Once you have accessed VFC, you will then have the option to search for source related documents using a variety of criteria.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. A copy of the application and permit is also available via IDEM's Virtual File Cabinet (VFC) located at https://www.in.gov/idem/legal/public-records/virtual-file-cabinet/. Once you have accessed VFC, you will then have the option to search for source related documents using a variety of criteria. To find documents related to this air permit, click on "Advanced Search", specify "OAQ" in the Program search field, specify the five-digit permit number "50712" in the Permit # search field, then click the Search button at the top or bottom of the webpage.

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This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

If you have any questions regarding this matter, please contact Mehul Sura, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, Indiana Government Center North, 100 North Senate Avenue, Room 13W, Indianapolis, Indiana 46204-2251, or by telephone at (317) 233-6868 or (800) 451-6027, and ask for Mehul Sura or (317) 233-6868.

Sincerely,

Madhurima D. Moulik, Ph.D., Section Chief
Permits Branch
Office of Air Quality

Attachments: Revised permit and Technical Support Document.

cc: File - Marion County
Marion County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch

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Mike Braun
Governor

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Clint Woods
Commissioner

Federally Enforceable State Operating Permit Renewal
OFFICE OF AIR QUALITY

Linde Advanced Material Technologies, Inc
1245 and 1415 Main St, Indianapolis, Indiana 46224
1500 and 1550 Polco St, Indianapolis, Indiana 46222

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: F097-46563-00060 Master Agency Interest ID: 12099	
Issued by: *Original signed by:* Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 1, 2024 Expiration Date: April 1, 2034

Significant Permit Revision No.: 097-50712-00060	
Issued by: Madhurima D. Moulik, Ph.D., Section Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date: April 1, 2034

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Attachment Letter	Federal Rule Part	Federal Rule Subpart	Attachment Name
A	--	--	--
B	40 CFR 63	VVVVVV	National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources
C	40 CFR 63	CCCCCCC	National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing
D	40 CFR 63	WWWWWW	National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations
E	40 CFR 63	ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
F	40 CFR 63	T	National Emission Standards for Halogenated Solvent Cleaning

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary manufacturer of metallic and nonmetallic powders for surface coating and polishing.

Source Address:	1245 and 1415 Main Street, Indianapolis, Indiana 46224 and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222
General Source Phone Number:	327-240-2533
SIC Code:	3479 (Coating, Engraving, and Allied Services, Not Elsewhere Classified) 3999 (Manufacturing Industries, Not Elsewhere Classified)
County Location:	Marion
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Source Determination

(a) This metallic and non-metallic powder manufacturing and surface coating operation consists of four (4) separate buildings:

Building 1 is located at 1245 Main Street, Indianapolis, Indiana 46224;
Building 2 is located at 1415 Main Street, Indianapolis, Indiana 46224;
Building 3 is located at 1550 Polco Street Indianapolis, Indiana 46222; and
Building 4 is located at 1500 Polco Street, Indianapolis, Indiana 46222

The four (4) buildings are contiguous or adjacent and have the same owner. Operations are classified under two (2) separate Standard Industrial Classification Codes (SIC). Although the SIC codes are different, all four (4) buildings provide various support relationships to one another. Since the operations are located on contiguous or adjacent properties, owned by the same company, and provide a support relationship, they will be considered one (1) source, as defined by 326 IAC 2-7-1(20).

This determination was initially made under FESOP No.: F097-7487-00060, issued on October 20, 2000.

(b) Linde Advanced Material Technologies, Inc. (source 097-00060) and Praxair Distribution, Inc. (source 097-00189) plants are not part of the same major source.

This determination was initially made under FESOP No.: F097-7487-00060, issued on October 20, 2000.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

1550 Polco Street

(a) One (1) powder manufacturing process, identified as CSP Department EU020, constructed in 2014 unless otherwise specified below, located at 1550 Polco Street, exhausting outdoors, and consisting of the following:

(1) One (1) raw material handling operation, identified as Raw Material Handling CSP, with a maximum capacity of 12.37 pounds of raw material per hour, consisting of a liquid pumping operation and solid scooping operation, and utilizing no control;

(2) One (1) raw material mixing operation, identified as Raw Material Mixing CSP, in which raw materials are mixed inside of an enclosed 55-gallon drum, utilizing no control, and with no exhaust;

(3) One (1) combustion spray pyrolysis (CSP) operation, approved in 2023 and again in 2024 to increase its maximum capacity, with a maximum capacity of twelve (12) batches of powder per twenty (20) hours, including the following systems:

(A) Spray drying and

(B) Powder to an oxide form converter and utilizing the following control devices:

(C) One (1) cyclonic collection system

(D) Natural Gas Combustion Units:

(i) One (1) natural gas combustion unit, identified as Burner 1 Associated with EU020, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(ii) One (1) natural gas combustion unit, identified as Burner 2 Associated with EU020, constructed in 2024, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iii) One (1) natural gas combustion unit, identified as Burner 3 Associated with EU020, constructed in 2024, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iv) Three (3) natural gas combustion unit, identified as Burners 4, 5, and 6 Associated with EU020, constructed in 2024, each with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(E) One (1) CSP pollution control system, used to collect material not captured by the cyclonic collection system, which includes the following control devices:

(i) One (1) high temperature baghouse dust collector, identified as BAG 1 (CSP),

(ii) One (1) selective catalytic reduction system, identified as SCR1 (CSP);

(iii) One (1) high temperature baghouse dust collector, identified as BAG 2 (CSP), constructed in 2024, and

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024.

(4) One (1) powder handling operation to convey powder to a hopper and sagger filling after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing three (3) dust collector, identified as DC-033, DC-034 and DC-020A, as control.

This Powder Handling After CSP is approved in 2024 to add a control.

(5) Ten (10):

(i) One (1) electrically-heated kiln, identified as Kiln 1, permitted in 2022 to use a control, approved in 2023 to increase its maximum capacity, with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC-030, as control;

(ii) Two (2) electrically-heated kilns, identified as Kiln 2 and Kiln 3, constructed in 2022, approved in 2023 to increase its maximum capacity, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC-033, as control;

(iii) Four (4) electrically heated kilns, identified as Kiln 4, Kiln 5, Kiln 6, and Kiln 7, constructed in 2024, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, utilizing a dust collector, identified as DC033, as control.

(iv) Three (3) electrically heated rotary kilns, identified as Kiln 8, Kiln 9 and Kiln 10, constructed in 2024, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC033, as control.

(6) One (1) powder handling operation after the kilns, identified as Powder Handling After Kiln, with a maximum capacity of 84.90 pounds of powder conveyed to a hopper per hour, which feeds the milling process, and utilizing a dust collector, identified as DC-030, as control;

(7) Nine (9) enclosed mills:

(i) One (1) enclosed ball mill, identified as Mill 1, permitted in 2022 to use a control, with a maximum capacity of 84.90 pounds of powder milled per

hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control;

(ii) Two (2) DM1 post kiln enclosed mills, identified as Mill 2 and Mill 3, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control;

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-033 , as control.

(iv) Four (4) enclosed DM4 post-kiln mills, identified as Mill 6 to Mill 9, constructed in 2024, each with a maximum capacity of 30 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control.

(8) One (1) powder handling operation after the mill, including six (6) screeners and 1 packaging operation, identified as Powder Handling After Mill, with a maximum capacity of 70.77 pounds of powder screened per hour and then conveyed to the blending hopper, and utilizing a dust collector, identified as DC-030, as control;

(9) Five (5) primary enclosed blenders:

(i) One (1) primary enclosed blender, identified as Blender 1, permitted in 2022 to use a control, used to homogenize the mixture, utilizing a dust collector, identifies as DC-30, as control, and with no exhaust;

(ii) One (1) primary enclosed blender, identified as Blender 2, constructed in 2023, used to homogenize the mixture, utilizing a dust collector, identifies as DC-30, as control, and with no exhaust;

(iii) Three (3) primary enclosed blender, identified as Blender 3, Blender 4, and Blender 5, constructed in 2024, used to homogenize the mixture, utilizing a dust collector, identified as DC-30, as control, with no exhaust.

(10) One (1) final powder handling process, identified as Final Powder Handling, with a maximum capacity of 70.77 pounds of powder screened and packaged (six screeners) per hour, and utilizing a dust collector, identified as DC-061, as control.

This Final Powder Handling is approved in 2024 to change control.

(11) One (1) powder and media electric drying oven, identified as CSP Drying Oven, approved in 2025 for construction, using no controls, and exhausting indoors. This unit does not produce any emissions.

(12) One (1) powder and media jet mill classifier used for sizing, identified as CSP Jet Mill Classifier, approved in 2025 for construction, utilizing a dust collector, identified as DC-080, as control, and exhausting indoors.

Under NESHAP for Chemical Manufacturing Area Sources [40 CFR 63, Subpart VVVVVV], the one (1) powder manufacturing process, identified as CSP Department EU020, is considered an affected unit.

(b) Thirty (30) specialty powders manufacturing operations, located at the 1550 Polco Street Specialty Powders area:

(1) Twenty-three (23) specialty powders manufacturing operations,
(i) modified in 2015 to reroute baghouses,
(ii) modified in 2016 to construct a new operation,
(iii) modified in 2018 to change the amount of dust collected by the dust collectors, and
(iv) modified in 2023 add a powder processing equipment,

each controlled by an integral baghouse and HEPA filters, identified in the table below, and exhausting indoors:

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	166.67	DC048	Powder 1 powder processing, including a blender, sieve, vertical material conveyor, crusher, mill, dust booth, three (3) screeners, and one (1) classifier (DC073). DC048 controls the classifier and the rest of the units.
EUS-2	166.67	DC015	One (1) blender and weigh out station for Powder 2 Bay 2
EUS-7	83.335	DC028, DC013	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, and screening. DC013 controls the impact mill and conveyor in Bay 5.
EUP-3	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in electric furnace and placed into vacuum chamber to form a powder
EUS-3	429.3	DC064	Approved in 2018 for modification of the dust collectors and descriptive information. Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling.
---	312.5	---	Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
---	---	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	312.5	DC012, DC013	Powder 3 is milled and sized. DC013 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.
EUS-8B	58.4	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
			classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
EUS-10	300	DC043, DC044, Powder 5 Baghouse	Processes oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five (5) screeners. DC043 controls one (1) blender, one (1) screener, four (4) filling machines, the filling station (bag breaking table), and two (2) delumpers. DC044 controls one (1) blender, one (1) screener, one (1) weigh station, one (1) delumper, and three (3) mixing tanks. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11*	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
EUP-11A*	100	DC002 (Stack S001)	Thermal barrier coating (TBC) Spray Dryer 2
EUP-11B**	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
EUS-15A	341.66	DC026	Approved in 2018 for modification of the dust collectors and descriptive information. 2 Screeners and 2 Blenders in Powder 2 Processing for Lines 1 and 2. Line 1 and 2 screeners and blenders are controlled by DC026. DC026 is also connected to classifiers DC072 and DC071, which are associated with Lines 1 and 2, respectively.
EUS-15B	341.66	DC059	Approved in 2018 for modification of the dust collectors and descriptive information. 4 Screeners and 2 Blenders in Powder 2 Processing for Lines 3 and 4. DC059 is also connected to classifiers DC070, DC023, and DC069, which are associated with Lines 3, 4, and 5, respectively.
---	---	DC056	DC056 controls packaging.

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-15C	341.66	DC060	Approved in 2018 for modification of the descriptive information. 4 Screeners and 2 Blenders in Powder 2 Processing for Lines 5 and 6. DC060 is also connected to classifiers DC011 and DC068, which are both associated with Line 6.
Scale	---	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUS-15I*** (constructed in 2024)	54.94	DC032	1 blender and 1 weigh out station used for Powder 2.
EUP-17 (approved in 2023 to change control)	76.33	DC035, DC045, New Dust collector	Viga 2/5 and Viga 45, for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC045, New Dust collector, while the exhaust from the viga is controlled by DC035.
EUS-22	21.606	DC005	Powder 7 Operation: Electric furnace, five (5) mills, three (3) jaw crushers, one (1) blender, one (1) screener, one (1) de-egger, one (1) fill station, one (1) classifier, and one (1) work bench. DC005 controls all operations, including the classifier.
EUS-4A	429.3	DC007, DC054	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls two classifiers, the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer.
EUS-12	100	DC014	High purity room powder handling,

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
			Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.
**This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC.
***The Dust collector DC032 is not considered integral

(2) One (1) specialty powder manufacturing operation, identified as EUS-15D, constructed in 2018, controlled by an integral baghouse, identified as DC074, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15D.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15D	341.66	DC074 (Baghouse)	Support for Viga 250 #3, used for Powder 2. DC079 controls dust from support operations in the Viga 250 #3.

(3) One (1) specialty powder manufacturing operation, constructed in 2018, utilizing no control, and enclosed with no exhaust.

Emission Unit ID	Maximum Throughput (lb/hr)	Description
EUS-15E	341.66	5 Screeners not controlled by a conventional dust collector. These screeners use internal components to separate/segregate manufactured powder into the desired particle size.

(4) One jet mill, identified as EUS-23, constructed in 2021, that is part of the Powder 7 specialty powders manufacturing operations, connected with one classifier, with a maximum throughput of 45 lb/hr, located at 1550 Polco Street, utilizing an integral dust collector, identified as DC006, as control and exhausting outside to stack S006.

(5) One (1) specialty powder manufacturing operation, identified as EUS-15H, constructed in 2024, controlled by a baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15H.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15H	341.66	DC075 (Baghouse)	Used for Powder 2.

(6) One (1) specialty powder manufacturing operation, identified as EUS-25, approved in 2025 for construction, controlled by a baghouse, identified as DC076, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G76. There are two (2) additional small baghouses for the spray dryers, identified as DC077 and DC078.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-25.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25	52.48	DC076, DC077, and DC078 (Baghouses)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: four (4) 24" vibratory mills, four (4) screw feeders, one (1) electric spray dryer, one (1) natural gas-heated spray dryer, six (6) electric kilns, three (3) 24" classifiers, two (2) vacuum conveyors, one (1) mixer blender, two (2) wet stirred bead mills and two (2) plastic tanks for mixing.

(7) One (1) specialty powder R&D operation, identified as EUS-25A, approved in 2025 for construction, controlled by a baghouse, identified as DC079, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G79.

The HEPA filters are not considered as integral to the one (1) specialty powders R&D operation, identified as EUS-25A.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: two (2) electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table.

(8) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(9) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-26	5.25	DC075 (Baghouse)	Powder is weighed, mixed into a slurry, and spray-dried. The process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the specialty powders manufacturing operation (except EUP-11B) are considered affected units.

(c) Titanium Power Processes:

(i) One (1) titanium powder process, identified as Titanium Powder Process 1, constructed in 2015, located at 1550 Polco Street, utilizing a wet collector, identified as Rotoclone, as control, with a maximum of 4.00 pounds of particulate collected by the wet collector per hour, and exhausting outdoors.

(ii) One (1) titanium powder process, identified as Titanium Powder Process 2, constructed in 2023, located at 1550 Polco Street, utilizing a wet collector, identified as Rotoclone, as control, with a maximum of 4.00 pounds of particulate collected by the wet collector per hour, and exhausting outdoors.

The maximum capacity of these processes has been considered confidential information.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the two (2) titanium powder processes are considered affected units.

(d) One (1) coating mixing operation, identified as Sermatech Process, constructed prior to 2014, with the following maximum mixing capacities:

(1) 60.00 pounds per hour of water-based paint and
(2) 24.00 pounds per hour of solvent-based paint

located at the 1550 Polco Street Specialty Powders area, utilizing two (2) scrubbers, identified as Scrubber #1 and Scrubber #2, and exhausting indoors.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the one (1) coating mixing operation is considered an affected unit.

(e) One (1) polishing operation, located at 1550 Polco Street, and consisting of the following:

(1) One (1) powder handling operation, with a maximum capacity of 9152.86 pounds per hour, and including:

(A) Four (4) lens polish mixing tank loading, constructed prior to 2014 and modified in 2015, and utilizing a dust collector, identified as DC030, as control;

(B) One (1) suspension room custom blend loading, constructed prior to 2014, identified as EUS-20, and utilizing a dust collector, identified as

DC032, as control;

(C) One (1) suspension room powder packaging, constructed prior to 2014, identified as EUS-18, and utilizing a dust collector, identified as DC032, as control; and

(D) Powder loading into one (1) of four (4) premix tanks operation, constructed prior to 2014, collectively identified as EUS-19, and utilizing a dust collector, identified as DC032, as control.

(2) One (1) polish mixing operation:

(A) One (1) lens polish mixing and filling operation constructed prior to 2014, utilizing a dust collector, identified as DC062, as control, and consisting of the following:

(i) Eight (8) mixing tanks,

(ii) Two (2) holding tanks,

(iii) One (1) bottle filling line, and

(iv) One (1) pail filling line,

The filling process creates a bottleneck so that only two (2) mixing tanks can be run at one time.

(B) One (1) suspension room mixing operation, constructed prior to 2014, consisting of two (2) mixing tanks with capacities of 50 gallons and 25 gallons, with a batch time of four (4) hours, and utilizing a dust collector, identified as DC032, as control.

(f) One (1) specialty ingot manufacturing process, constructed in 2016 and modified in 2018 to add a lathe, located at 1550 Polco Street, and consisting of the following:

(1) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, utilizing a voluntary dust collector as control while transferring powder from the spray dryer to the feed tank, and exhausting indoors.

(2) One (1) feed tank.

(3) One (1) electric sintering kiln.

(4) One (1) lathe, identified as Ingot Machining Lathe, constructed in 2018, with a maximum capacity of 100 pounds per hour, utilizing no control, and exhausting indoors.

(g) Eleven (11) direct heating natural gas-fired combustion units:

(1) Nine (9) natural gas-fired combustion units, constructed prior to 2014, located at 1550 Polco Street, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Rated Maximum Capacity (MMBtu/hr)	Stack / Vent ID
EU001	Powder 4 Furnaces	3	001
EU002		3	002
EU003		3	003
EU004		3	004
EU005		3	005
EU006		3	006
EU007	Powder 5 Furnace	3	007
EU008	Powder 4 Furnaces	3	008
EU009		3	009

(2) Two (2) natural-gas fired combustion units, constructed prior to 2014, located at 1550 Polco Street, utilizing dust collectors as control, and consisting of the following:

Emission Unit ID	Unit Description	Rated Maximum Capacity (MMBtu/hr)	Control Device	Stack / Vent ID
EUP-11	Powder 5 Spray Dryer 1	0.3	DC001	P-13B
EUP-11A	Powder 5 Spray Dryer 12	0.3	DC002	P-13B

(h) Four (4) natural gas-fired boilers, located at 1550 Polco Street, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	Rated Maximum Capacity (MMBtu/hr)	Stack / Vent ID
B-001	Lochinvar Boiler	1996	1.26	004
B-002	Multi-Pulse Hot Water Boiler	2018 This unit replaces the existing B-002.	0.15	003
B-003	Ajax Boilers	1999	0.45	003
B-004			0.45	004

Under NSPS for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 63, Subpart Dc], the one (1) natural gas-fired boiler, identified as Cleaver Brooks Boiler EU004, is considered an affected unit.

1500 Polco Street

(i) One (1) grit blasting unit:

(1) One (1) aluminum oxide grit blasting unit, identified as EU13C, constructed in 2018, with a maximum capacity of 129 pounds per hour, located at 1500 Polco Street, controlled by a baghouse, identified as C13C, and exhausting to stack/vent ID 13C.

(j) [Reserved]

(k) Two (2) natural gas-fired boilers, located at the 1500 Polco Street Powerhouse, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	Maximum Capacity (MMBtu/hr)	Stack / Vent ID
EU002	Cleaver Brooks Boilers	1990	8.369	002
EU003			8.369	003

1245 Main Street

(l) Twenty-two (22) grit blasting units:

(1) Thirteen (13) aluminum oxide grit blasting units, located at 1245 Main Street, each utilizing a baghouse as control, and exhausting to the Stack/Vents in the table below:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device	Exhaust
EU09C	1994	360	C09C	09C
EU001G	Constructed prior to 2014	600	C001G	01G
EU002G		600	C002G	02G
EU004G		600	C004G	04G
EU005G		600	C005G	05G
EU008G		600	C008G	08G
EU010G		600	C010G	10G
EU011G		600	C011G	11G
EU013G		200	C013G	13G
EU014G		600	C014G	14G
EU016G		600	C016G	16G
EU018G		600	C018G	18G
EU019G		600	C019G	19G

(2) One (1) aluminum oxide grit blasting unit, identified as, EU012G, constructed in 2015, with a maximum capacity of 50 pounds per hour, located at 1245 Main Street, utilizing a dust collector, identified as DC012G, as control, and exhausting indoors.

(3) One (1) silicon carbide grit blasting unit, identified as EU007G, constructed prior to 2014, with a maximum capacity of 360 pounds per hour, located at 1245 Main Street, utilizing a baghouse, identified as C007G, as control, and exhausting indoors.

(4) Two (2) fine grit blasting units, constructed prior to 2014, located at 1245 Main Street, each with a maximum capacity of 600 pounds per hour, each utilizing a baghouse as control, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
EU01M	C01M
EU02M	C02M

(5) One (1) steel shot peen shot blasting cabinet, identified as EU01L, constructed in 1994, with a maximum capacity of 5.36 pounds per hour, located at 1245 Main

Street, utilizing a baghouse, identified as C01L, as control, and exhausting to Stack/Vent 01L.

(6) Two (2) glass bead cabinet blasting units, constructed prior to 2014, each with a maximum capacity of 600 pounds per hour, located at 1245 Main Street, each utilizing a baghouse as control, and exhausting to the Stack/Vents in the table below:

Emission Unit ID	Control Device	Exhaust
EU01GB	C01GB	01GB
EU02GB	C02GB	02GB

(7) One (1) aluminum oxide grit blasting unit, identified as EU021G, constructed in 2021, with a maximum capacity of 120 pounds per hour, located at 1245 Main Street, utilizing a dust collector, identified as DC021G, as control, and exhausting indoors.

(8) One (1) steel shot peen shot blasting cabinet, identified as EU02L, constructed in 2021, with a maximum capacity of 5.36 pounds per hour, located at 1245 Main Street, utilizing a baghouse, identified as DC02L, as control, and exhausting indoors.

(m) Thirteen (13) metal surface coating stations:

(1) Six (6) detonation surface coating stations, all constructed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, used to apply coating to metal surfaces, each utilizing a D gun to apply coatings, located at 1245 Main Street, each utilizing an integral baghouse with HEPA filters, and identified as follows:

Emission Unit ID	Control Device ID	Stack/Vent ID
EU01A	C01A	01A
EU02A	C02A	02A
EU16A	C16A	16A
EU17A	C17A	17A
EU18A	C18A	18A
EU06A	C06A	06A

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the six (6) detonation surface coating stations are considered affected units.

(2) Two (2) High Velocity Oxy Fuel coating guns, each with a maximum capacity of 16.08 pounds of coating per hour, used to apply coating to metal surfaces, located at 1245 Main Street, each controlled by a baghouse with HEPA filters, and exhausting indoors:

Emission Unit ID	Construction Year	Control Device ID	Stack/Vent ID
EU19A*	Constructed prior to 2018	C19A**	19A
EU20A	2018	C20A	20A
* EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.			

**The control device for EU19A was determined to be integral to the operation of this unit.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the two (2) High Velocity Oxy Fuel coating guns are considered affected units.

(3) Three (3) plasma surface coating stations, used to apply coating to metal surfaces, located at 1245 Main Street, each controlled by an integral baghouse with HEPA filters, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
EU05B	prior to 1982	8.04	C05D	05D
EU06B		8.04	C06D	06D
EU10B		8.04	C10D	10D

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the three (3) plasma surface coating stations are considered affected units.

(4) One (1) high velocity oxy fuel coating gun, identified as EU04A, constructed in 1991, with a maximum capacity of 16.08 pounds of coating per hour, used to apply coating to metal surfaces, located at 1245 Main Street, utilizing integral baffles as control, and exhausting to Stack/Vent 04A.

(5) One (1) plasma surface coating station, identified as EU03B, constructed prior to 1982, with a maximum capacity of 8.04 pounds of powder per hour, used to apply coating to metal surfaces, located at 1245 Main Street, utilizing integral baffles as control, and exhausting to Stack/Vent 03D.

(n) One (1) physical vapor deposition coating station, identified as EU01T, constructed prior to 2017, with a maximum capacity of 0.25 pounds of coating per hour, used to apply coating to metal surfaces, utilizing physical vapor deposition (PVD) coating application method, located at 1245 Main Street, utilizing no control, and exhausting to Stack/Vent 01T.

(o) One (1) LSR1 titanium tetrachloride coating station, identified as EU01R, constructed prior to 2014, with a maximum capacity of 0.27 pounds of coating per hour, used to apply coating to metal surfaces, utilizing chemical vapor deposition (CVD) coating application method, located at 1245 Main Street, utilizing a scrubber as control, and exhausting to Stack/Vent 01R.

(p) Three (3) direct heating natural gas-fired combustion units, constructed prior to 2014, located at 1245 Main Street, utilizing no control, and exhausting indoors.

Number of Units	Unit Description	Rated Maximum Capacity (MMBtu/hr)
Two (2)	Heaters for the Kolene tank	0.150 each
One (1)	Kiln for LSR1	0.15

1415 Main Street

(q) Twenty-four (24) grit blasting units:

(1) Nine (9) aluminum oxide grit blasting units, located at 1415 Main Street, each utilizing a baghouse as control, and exhausting to the Stack/Vents in the table below:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device	Exhaust
EU01C	1994	360	C01C	01C
EU04C		360	C04C	04C
EU05C		360	C05C	05C
EU06C		360	C06C	06C
EU07C		360	C07C	07C
EU08C		360	C08C	08C
EU10C	1996	360	C10C	10C
EU12C	1998	360	C12C	12C
EU16C	2017	600	C16C	16C

(2) One (1) aluminum oxide robotic grit blasting unit, identified as EU03C, constructed in 1994, with a maximum capacity of 360 pounds per hour, located at 1415 Main Street, utilizing a baghouse, identified as C03C, as control, and exhausting to Stack/Vent 03C.

(3) One (1) fine grit blasting unit, identified as EU01M, constructed in 2015, with a maximum capacity of 600 pounds per hour, located at 1415 Main Street, utilizing a dust collector, identified as C01M, as control, and exhausting indoors.

(4) Two (2) Operation 1, Process 1 aluminum oxide grit blasting units, each utilizing a baghouse with HEPA filters as control, located at 1415 Main Street, exhausting indoors, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device
O1P1-EUG6	Constructed prior to 2014	173	O1P1-CG6
O1P1-EUG7	2016	81	O1P1-CG7

(5) Four (4) Operation 2, Process 1 aluminum oxide grit blasting units, each utilizing a baghouse with HEPA filters as control, located at 1415 Main Street, exhausting indoors, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device
O2P1-EUG1	Constructed prior to 2014	224	Baghouse with HEPA Filter O2P1-CG1/2
O2P1-EUG2		224	
O2P1-EUG3		81	Baghouse with HEPA Filter O2P1-CG3/4
O2P1-EUG5	2015	50	Dust Collector O2P1-CG5

(6) Two (2) Operation 2, Process 3 calcined alumina grit blasting units, constructed prior to 2014, each with a maximum capacity of 221 pounds per hour, each

utilizing a baghouse with HEPA filters as control, located at 1415 Main Street, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
O2P3-EUG1	O2P3-CG1
O2P3-EUG2	O2P3-CG2

(7) One (1) silicon carbide grit blasting unit, identified as EU11C, constructed in 2019, with a maximum capacity of 180 pounds per hour, using a baghouse, identified as C11C, as control, and exhausting indoors.

(8) One (1) aluminum oxide grit blasting unit, identified as EU21, constructed in 2024, with a maximum capacity of 50 pounds per hour, located at 1415 Main Street, controlled by a baghouse, identified as C21, and exhausting inside the building.

(r) One (1) Operation 2 Process 3, identified as O2P3 EUG3, constructed in 2019, consisting of one (1) abrasive dry ice blasting unit, with a maximum dry ice throughput of 1,000 pounds per week, with a residual powder total of 0.25 pounds per part, using a dust collector as control, identified as CG2, and exhausting indoors.

(s) Two (2) aluminum oxide wet grit blasting units, located at 1415 Main Street, utilizing mist collectors as control, and exhausting indoors:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Mist Collector ID
EU14C	Constructed prior to 2014	600	C14C
EU15C	2018	600	C15C

(t) One (1) pack diffusion process, identified as Pack Diffusion Process, constructed in 2017, located at 1415 Main Street, and including the following:

(1) One (1) pack station, with a total powder throughput of 100 pounds per hour, utilizing a scrubber as control, and exhausting outdoors.

(2) One (1) unpack station, with a total powder throughput of 100 pounds per hour, utilizing a scrubber as control, and exhausting outdoors.

(3) One (1) abrasive blasting unit, using dry ice as the abrasive material and one (1) air blasting unit, using no abrasive material, with a total powder residual of 0.5 pounds per part, utilizing a dust collector as control, and exhausting indoors.

(u) One (1) Operation 1, Process 1 (O1P1), constructed prior to 2014, approved in 2023 to remove a control, with a maximum capacity of 39,795 pounds of waste particulate collected per year, located at 1415 Main Street, utilizing two (2) integral dust collectors with HEPA filters, identified as DCC1-CV and DCC4-CV, as control, and exhausting indoors.

(v) One (1) Operation 2, Process 1 (O2P1), constructed prior to 2014, located at 1415 Main Street, consisting of six (6) Q-Salt tanks each with a maximum capacity of 10.6 gallons, utilizing no control, and exhausting indoors.

(w) One (1) Operation 2, Process 2 (O2P2), constructed prior to 2014, located at 1415 Main Street, exhausting indoors, and consisting of the following:

(1) One (1) slurry masking process, with a maximum capacity of less than 12 pounds of material per hour, manually applied using a brush, and utilizing no control; and

(2) One (1) dry masking process, constructed in 2017, with a maximum capacity of 10 tons of material per year, and ventilating to a down-draft table with cartridge filters.

(x) One (1) Operation 2, Process 4 (O2P4), constructed prior to 2014, modified in 2016, and modified in 2017, located at 1415 Main Street, with a maximum activator compound consumption of less than 1 pound per hour, utilizing a water scrubber as control, and exhausting indoors.

(y) Three (3) grinders, constructed prior to 2014, located at 1415 Main Street, each with a maximum capacity of 100 pounds per hour, each utilizing dust collectors with HEPA filters as control, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
Bader Grinder #2	C03C
Bader Grinder #3	C07B
Bader Grinder #4	C08B

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the three (3) grinders are considered affected units.

(z) Ten (10) metal surface coating stations:

(1) One (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, constructed prior to 2014, with a maximum capacity of 44.09 pounds of coating per hour, used to apply coating to metal surfaces, located at 1415 Main Street, utilizing a dust collector, identified as C01S, during cleanout, and exhausting to Stack/Vent 01S.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the one (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, is considered an affected unit.

(2) Eight (8) plasma surface coating stations used to apply coating to metal surfaces, located at 1415 Main Street, each controlled by an integral baghouse with HEPA filters, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
EU01B	1994	16.08	C01B	01B
EU02B		16.08	C02B	02B
EU05B		16.08	C05B	05B
EU06B		16.08	C06B	06B
EU07B*		16.08	C07B Baffles**	07B
EU08B^		16.08	C08B	08B
EU09B		16.08	C09B	09B
EU11B	2009	16.08	C11B	11B

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
*Cubicle 07B, approved in 2018 for modification, will use the integral baghouse with HEPA filters when spraying HAP-containing materials, but will use baffles when using materials with combustible dust concerns. **Baffles are not an integral control device. ^EU08B is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.				

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the eight (8) plasma surface coating stations are considered affected units.

(3) One (1) plasma surface coating station, identified as EU12B, constructed in 2013, with a maximum capacity of 16.08 pounds of powder per hour, used to apply coating to metal surfaces, located at 1415 Main Street, utilizing an integral baghouse with HEPA filters, identified as C12B, and exhausting to Stack/Vent 12B.

(aa) Nineteen (19) direct heating natural gas-fired combustion units, constructed prior to 2018, located as 1415 Main Street, utilizing no control, and exhausting outdoors:

Emission Unit ID	Unit Description	Rated Maximum Capacity (MMBtu/hr)
RTU-A2	Carrier roof top units	0.360
RTU-A3		0.360
RTU-F		0.115
RTU-C1		0.250
RTU-E1		0.525
RTU-B2		0.525
RTU-A5		0.525
RTU-A6		0.525
ACPR4-1		0.133
ACPR4-2		0.115
RTU-00	Trane roof top units	0.587
ACPR1-1		0.117
ACPR1-2		0.117
RTU-B1	York roof top units	0.3
RTU-A-1		0.3
RTU-A7		0.699
RTU-E1	Aaon roof top units	0.18
RTU-D2		0.54
RTU-C1		0.27

(ab) Six (6) degreasers located at 1415 Main Street:

(1) Three (3) conveyorized vapor degreasers, utilizing no control, and exhausting indoors:

Number of Units	Emission Unit ID	Construction Year	Maximum Capacity (gallons per year)	Solvent
Two (2)	Operation 2 Degreasers	Constructed prior to 2014	145	Novec 72DE
One (1)	Operation 1 Degreaser	2016,modified in 2017	500	

(2) Three (3) open top vapor degreasers, utilizing no control, and exhausting indoors:

Emission Unit ID	Construction Year	Maximum Capacity (gallons per year)	Solvent
LPPS Vapor Degreaser	2013, modified in 2018 and 2023 to change solvent	660	TMC-377
Tribomet Line Vapor Degreaser 1*	2017	660	PCE**
Tribomet Line Vapor Degreaser 2*	2024	260	PCE**
*Under NESHAP for Halogenated Solvent Cleaning [40 CFR 63, Subpart T], the one (1) Tribomet Line Vapor Degreaser is considered an affected unit. **PCE = Perchloroethylene			

A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(19)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(19):

1550 Polco Street

(a) Two (2) grinding and cutting operations:

(1) One (1) machine shop, identified as Building 1550 Maintenance Shop, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1550 Polco Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) Three (3) arc welding stations, each with a maximum capacity of 2.4 pounds of electrode per hour;
(B) One (1) chop saw;
(C) Two (2) grinders;
(D) One (1) belt sander;
(E) One (1) wet cutting saw;
(F) One (1) vertical band saw;
(G) One (1) lathe; and
(H) One (1) roller.

(2) One (1) crucible cutting operation, identified as Specialty Powders Crucible Cutting (CC019), constructed prior to 2014, with a maximum capacity of 5

pounds of granite per hour, located at 1550 Polco Street, utilizing a dust collector, identified as DC019, as control, and exhausting indoors.

1500 Polco Street

(b) One (1) epoxy kit operation, identified as EUS-12, constructed in 1985, located at 1550 Polco Street, with a maximum capacity of:

(1) 56.0 pounds of epoxy kits containing acetone per hour and
(2) 50 pounds of vermiculate for use in packaging per hour, utilizing a dust collectors with HEPA filters, identified as DC014, to control vermiculate pouring

and exhausting indoors.

(c) Three (3) 3D printers, each with a maximum consumption of 1.83 tons per year of nickel-based powder products, identified as NI-202 products, located at 1500 Polco Street, utilizing no control, and exhausting indoors.

Number of Units	Construction Year
One (1)	2018
Two (2)	2017

(d) Three (3) grinding and cutting operations:

(1) One (1) machine shop, identified as Building 1500 Machine Shop, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1500 Polco Street, exhausting indoors, and consisting of the following:

(A) One (1) band saw utilizing no control;
(B) One (1) chop saw utilizing a dust collector as control;
(C) Four (4) wheel grinders utilizing no control;
(D) Six (6) drill presses utilizing a dust collector as control;
(E) Four (4) lathes, using cutting fluids, and utilizing no control;
(F) Two (2) surface grinders utilizing no control;
(G) One (1) press utilizing no control;
(H) One (1) belt sander utilizing no control;
(I) Two (2) wire electrical discharge machining (EDM) cutting machines utilizing no control; and
(J) One (1) computer numerical control (CNC) mill, using cutting fluids and lubricants, and utilizing no control.

(2) One (1) fabrication shop, identified as Building 1500 Fabrication Shop, with a maximum capacity of 50 pounds of metal per hour, located at 1500 Polco Street, exhausting indoors, and consisting of the following:

(A) One (1) shear utilizing no control;
(B) One (1) drill press utilizing no control;
(C) One (1) lathe, using cutting fluids, and utilizing no control;
(D) One (1) press utilizing no control;
(E) Two (2) press brakes utilizing no control;
(F) One (1) cutter/grinder utilizing no control;
(G) Two (2) punch presses utilizing no control; and
(H) One (1) engraver utilizing no control.

(3) One (1) maintenance welding shop, identified as Maintenance Welding Shop,

constructed in 2017, with a maximum capacity of 5 pounds of metal per hour, located at 1500 Polco Street, utilizing no control, exhausting outdoors through a fume extraction system, and consisting of the following:

(A) One (1) MIG welding station, with a maximum capacity of 3 pounds of electrode per hour;
(B) One (1) arc welding station, with a maximum capacity of 2.4 pounds of electrode per hour;
(C) One (1) plasma flame cutting stations, each with a maximum cutting capacity of 300 inches of 0.5 inch thick metal per minute; and
(D) One (1) wheel grinder with a maximum capacity of 5 pounds of metal per hour.

(e) One (1) carpenter shop, identified as Carpentry Shop, constructed prior to 2018, each tool with a maximum capacity of 50 pounds of wood per hour, located at 1500 Polco Street, utilizing a dust collector, identified as Carpenter Shop Dust Collector, as control, exhausting indoors, and consisting of the following tools:

(A) One (1) band saw utilizing no control;
(B) One (1) drill press utilizing no control;
(C) One (1) belt sander utilizing no control;
(D) One (1) circular saw utilizing a dust collector as control; and
(E) One (1) table saw utilizing a dust collector as control.

(f) Two (2) emergency generators, utilizing no control, and exhausting indoors:

Location	Emission Unit ID	Maximum Capacity (HP)	Fuel Type	Date Installed	Date Manufactured	Engine Type
1500 Polco Street	Generac	207	Diesel	1999	1999	6 cylinder
1500 Polco Street - Power House	ONAN/ Cummins	168	Diesel	1975	1975	6 cylinder

Under NESHAP for Stationary reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ], the two (2) emergency generators are considered affected units.

1245 Main Street

(g) One (1) grit reclassifier, identified as EU020G, constructed in 2015, with a maximum capacity of 400 pounds of aluminum oxide per hour, located at 1245 Main Street, utilizing a dust collector, identified as DC020G, as control, and exhausting indoors.

(h) Seventeen (17) grinding and cutting operations:

(1) One (1) maintenance shop, identified as Building 1245 Maintenance Shop, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1245 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) Three (3) band saws,
(B) Two (2) drill presses,
(C) Four (4) lathes, using cutting fluid,

(D) One (1) shear,
(E) Two (2) grinders,
(F) One (1) belt sander,
(G) One (1) MIG welding station with a maximum capacity of 3 pounds of electrode per hour, and
(H) One (1) arc welding station with a maximum capacity of 2.4 pounds of electrode per hour.

(2) Fifteen (15) grinders, identified as Building 1245 Various Grinders, constructed prior to 2014, with a maximum capacity of 100 pounds of metal per hour, located at 1245 Main Street, exhausting indoors, and consisting of the following:

(A) Two (2) wheel grinders, located near EU01M and EU06C, and each utilizing a portable voluntary dust collector as control;
(B) Two (2) grinders utilizing no control;
(C) Three (3) brush grinders, located near EU16C and EU10G, and utilizing no control;
(D) Seven (7) outside diameter (OD) grinders, each utilizing a dust collector as control; and
(E) Two (2) surface grinders utilizing no control.

(3) One (1) grinder, identified as Brown and Sharp Grinder, constructed in 2015, with a maximum capacity of 3 pounds of metal per hour, located at 1245 Main Street, utilizing a dust collector as control, and exhausting to the indoors.

(i) Five (5) finishing units:

(1) Three (3) polishers, constructed prior to 2014, located at 1245 Main Street, utilizing a dust collector, identified as DC016A, as control, and exhausting indoors.

(2) One (1) hone process, constructed prior to 2015, located at 1245 Main Street, utilizing a dust collector, identified as DC016A, as control, and exhausting indoors.

(3) One (1) downdraft table for handheld equipment, identified as Maxflo DD23, constructed in 2015, located at 1245 Main Street near the aluminum oxide grit blasting units, utilizing no control, and exhausting indoors.

(j) One (1) cold cleaner degreaser, constructed prior to 2014, located at 1245 Main Street, utilizing no control, and exhausting indoors:

Emission Unit ID	Maximum Capacity (gallons per year)	Solvent
Maintenance Parts Washer	145	Safety Kleen Premium Gold Solvent

1415 Main Street

(k) Six (6) grinding and cutting operations:

(1) One (1) maintenance shop, identified as Maintenance Shop #1, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1415 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) One (1) horizontal band saw;
(B) One (1) shear;
(C) Two (2) drill presses;
(D) One (1) vertical band saw;
(E) One (1) mobile circular saw;
(F) One (1) belt sander;
(G) One (1) wheel grinder
(H) One (1) MIG welding station, with a maximum capacity of 3 pounds of electrode per hour;
(I) One (1) arc welding station, with a maximum capacity of 2.4 pounds of electrode per hour;
(J) One (1) lathe, using cutting fluids; and
(K) One (1) circular cutting saw.

(2) One (1) maintenance shop, identified as Maintenance Shop #2, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1415 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) One (1) drill press,
(B) One (1) vertical band saw,
(C) One (1) belt sander, identified as JET belt sander,
(D) Two (2) wheel grinders.

(3) Four (4) vented tables used for insignificant grinding, identified as Building 1415 Vented Tables, constructed prior to 2015, with a total maximum capacity of 50 pounds of metal per hour, located at 1415 Main Street, utilizing no control, and exhausting indoors.

(l) One (1) finishing unit:

(1) One (1) downdraft table for handheld equipment, constructed in 2015, identified as DTH800, located at 1415 Main Street near Operation 1, Process 1 (O1P1), utilizing no control, and exhausting indoors.

(m) Two (2) cold cleaner degreasers, constructed prior to 2014, located at 1415 Main Street, utilizing no control, and exhausting indoors:

Emission Unit ID	Maximum Capacity (gallons per year)	Solvent
Maintenance Parts Washer	145	Safety Kleen Premium Gold Solvent
Operation 1 and 2 Machine Shop Parts Washer	145	Safety Kleen solvent

All Locations

(n) Various downdraft tables throughout the facility used for small-scale production and maintenance, permitted in 2019, with a maximum production rate of 2,000 pounds per hour, using filter cartridges as control, and exhausting indoors.

This stationary source also includes the following insignificant activities which are not specifically regulated, as defined in 326 IAC 2-7-1(19):

1550 Polco Street

(a) One (1) isopropyl alcohol (IPA) room supporting EUS-22, identified as IPA Room, constructed prior to 2014, with a maximum isopropyl alcohol usage of 0.67 pounds per hour, located at 1550 Polco Street, utilizing no control, and exhausting indoors.

1500 Polco Street

(b) One (1) small scale coating operation, identified as Scale Coating, constructed in 2017, with a maximum capacity of the following:

Material	Material Usage (gallons per year)
ST570A (Part 1)	6.87
ST570A (Part 2)	6.87
ST1740	13.74

located at 1500 Polco Street in the Research and Development Section, utilizing dry filters as control, and exhausting indoors.

1245 Main Street

(c) One (1) electrolytic stripping operation, constructed prior to 2014, located at 1245 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(1) One (1) electrolytic stripping tank containing sodium hydroxide, soda ash, water, and tartaric acid;
(2) One (1) nitric acid stripping tank;
(3) One (1) immersion fluid tank; and
(4) One (1) Kolene tank.

(d) One (1) titanium nitrate cleaning operation, identified as Crest Cleaning Line, constructed prior to 2014, located at 1245 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(1) One (1) Turco 4181 tank,
(2) One (1) phosphoric acid tank, and
(3) Three (3) water rinse tanks.

(e) One (1) manual degreasing operation, identified as Manual Degreasing, constructed prior to 2014, with a maximum capacity of 145 gallons per year, utilizing wipes to apply the following solvents:

(1) Methyl ethyl ketone (MEK),
(2) Isopropyl alcohol (IPA), and
(3) ZeroTri Heavy-Duty Degreaser Aerosol

located at 1245 Main Street, utilizing no control, and exhausting indoors.

(f) One (1) lubricant application processes, constructed prior to 2014, located at 1245 Main Street, utilizing no control, and exhausting indoors:

Emission Unit ID	Maximum Capacity (gallons of lubricant/year)
Molydag application process	10

(g) Four (4) electric cure ovens, identified as EUC01 through EUC04, constructed in 2021, located at 1245 Main Street, uncontrolled, with EUC01 exhausting to stack SC01, and EUC02 through EUC04 exhausting indoors.

The four (4) electric cure ovens do not produce any emissions.

(h) One (1) vacuum sealer, identified as VS1, constructed in 2021, with a maximum throughput of 55 gallons per year of solvent, located at 1245 Main Street, uncontrolled and exhausting indoors.

(i) One (1) parts washer, identified as PW1, constructed in 2021, with a maximum throughput of 5 gallons per year of solvent, located at 1245 Main Street, uncontrolled and exhausting indoors.

1415 Main Street

(j) Three (3) Tribomet lines consisting of the following:

(1) Two (2) Tribomet lines, identified as Lines #1 and #2, constructed prior to 2014 and 2017, both including a series of 16 dip tanks, located at 1415 Main Street, utilizing a composite mesh pad system with mist eliminator as control, and exhausting indoors.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the two (2) Tribomet lines, identified as Lines #1 and #2, are considered affected units.

(2) One Tribomet nickel sulfate plating line, identified as Line #3, constructed in 2024, including a series of 10 dip tanks, located at 1415 Main Street, utilizing a scrubber as control, and exhausting indoors.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the Tribomet nickel sulfate plating line, identified as Line #3, is considered an affected unit.

(k) One (1) Operation 1, Process 3 (O1P3), constructed in 2024, with a maximum capacity of 55.00 pounds of ammonium bifluoride (ABF) added to the dip tank per week, located at 1415 Main Street, utilizing no control, and exhausting indoors.

(l) Two (2) stripping and two (2) hydrochloric acid storage tanks operations consisting of the following:

(1) One (1) hydrochloric acid stripping operation, constructed prior to 2014 and modified in 2018 to add an additional hydrochloric acid tank, located at 1415 Main Street, utilizing a scrubber as control, exhausting outdoors, and consisting of:

(A) Three (3) hydrochloric acid tanks, each with a maximum capacity of 30 gallons,
(B) Two (2) water rinse tanks and
(C) One (1) caustic tank.

(2) One (1) nitric acid stripping operation, constructed prior to 2014, located at 1415 Main Street, utilizing a scrubber as control, exhausting outdoors, and consisting of the following:

(A) One (1) 150-gallon acid stripping tank and
(B) One (1) water rinse tank.

(3) Two (2) hydrochloric acid (HCl) storage tanks for pH control, identified as HCl tank 1 and HCl tank 2, approved in 2026 for construction, each with a maximum HCl usage capacity 300.0 gallons of HCl per year and storage capacity of 150 gallons and exhausting indoor.

(m) Two (2) lubricant application processes, constructed prior to 2014, located at 1415 Main Street, utilizing no control, and exhausting indoors:

Emission Unit ID	Maximum Capacity (gallons of lubricant/year)
DP Lubricant application process	55

General Source

(n) Combustion source flame safety purging on startup.

(o) Production related activities, including the following:

(1) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.

(2) Cleaners and solvents the combined use of which does not exceed 145 gallons per 12 months, characterized as follows:

(A) Having a vapor pressure equal to or less than 2.0 kPa; 15 mm Hg or 0.3 psi measured at 38.0 Celsius or;

(B) Having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg or 0.1 psi measured at 20.0 Celsius.

(3) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment and welding equipment.

(4) Closed loop heating and cooling systems.

(p) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(q) Water-based activities, including the following:

(1) Activities associated with the treatment of wastewater streams with an oil or grease content of less than or equal to 1% by volume.

(2) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs, including an aqueous line with:
(A) De- wax tank: 200 F, 250 gallons per year
(B) Soy Gold Oil: 190 F, 500 gallons per year
(C) Cleansafe 686: 140-160 F, 3,000 gallons per year
(D) Double counterflow rinse 140 F, 500 gallons per year.

(3) Water based adhesives that are less than or equal to 5% by volume of VOCs

excluding HAPs.

(4) Forced and induced draft cooling tower system not regulated under a NESHAP.

(r) Repair activities, including the following:

(1) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(2) Heat exchanger cleaning and repair.

(3) Process vessel degassing and cleaning to prepare for internal repairs.

(s) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures or vehicles at the source where air emissions from those activities would not be associated with any production process.

(t) Equipment used to collect any material that might be released during a malfunction, process upset or spill cleanup including catch tanks, temporary liquid separators, tanks and fluid handling equipment.

(u) Blowdown for any of the following: sight glass, boiler, compressor, pumps, and cooling tower.

(v) Filter or coalescer media changeout.

(w) A laboratory as defined in 326 IAC 2-7-1(19)(G).

(x) Six (6) new wax/ dewax tanks, constructed in 2024.

(y) Electric Grieve oven model # WRC888.

(z) Paved and unpaved roads and parking lots with public access.

A.5 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, F097-46563-00060, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(a)(1)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

(1) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than April 15 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Reserved

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F097-46563-00060 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(19) and 326 IAC 2-7-1(39). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source’s failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region 5
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to

326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

(b) Emission Trades [326 IAC 2-8-15(b)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(b).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ or U.S. EPA is required.

(d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.19 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-8590 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(19). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may

open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(c).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(d).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control

The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation

The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector

The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

C.7 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]

C.9 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.11 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.12 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.13 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.15 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, startups, or shutdowns of any emission unit or emission control equipment, that result in violations of applicable air pollution control regulations or applicable emission limitations must be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any emission unit or emission control equipment: 1) results in violations of applicable air pollution control regulations or applicable emissions limitations and 2) lasts more than one (1) hour, the condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages) or its equivalent. Notification must be made by telephone or other electronic means, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of the occurrence.

(c) Failure to report a malfunction under subsection (b) of this condition of any emission unit or emission control equipment shall constitute a violation of 326 IAC 16, and any other applicable rules. Information of the scope and expected duration of the malfunction must be provided, including the items specified in 326 IAC 162(c)(3)(A) through (E).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.16 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.

(BB) All original strip chart recordings for continuous monitoring instrumentation.

(CC) Copies of all reports required by the FESOP.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section C - Malfunctions Report satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

1550 Polco Street

(a) One (1) powder manufacturing process, identified as CSP Department EU020, constructed in 2014 unless otherwise specified below, located at 1550 Polco Street, exhausting outdoors, and consisting of the following:

(1) One (1) raw material handling operation, identified as Raw Material Handling CSP, with a maximum capacity of 12.37 pounds of raw material per hour, consisting of a liquid pumping operation and solid scooping operation, and utilizing no control;

(2) One (1) raw material mixing operation, identified as Raw Material Mixing CSP, in which raw materials are mixed inside of an enclosed 55-gallon drum, utilizing no control, and with no exhaust;

(3) One (1) combustion spray pyrolysis (CSP) operation, approved in 2023 and again in 2024 to increase its maximum capacity, with a maximum capacity of twelve (12) batches of powder per twenty (20) hours, including the following systems:

(A) Spray drying and

(B) Powder to an oxide form converter and utilizing the following control devices:

(C) One (1) cyclonic collection system

(D) Natural Gas Combustion Units:

(i) One (1) natural gas combustion unit, identified as Burner 1 Associated with EU020, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(ii) One (1) natural gas combustion unit, identified as Burner 2 Associated with EU020, constructed in 2024, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iii) One (1) natural gas combustion unit, identified as Burner 3 Associated with EU020, constructed in 2024, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iv) Three (3) natural gas combustion unit, identified as Burners 4, 5, and 6 Associated with EU020, constructed in 2024, each with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(E) One (1) CSP pollution control system, used to collect material not captured by the cyclonic collection system, which includes the following control devices:

(i) One (1) high temperature baghouse dust collector, identified as BAG 1 (CSP),

(ii) One (1) selective catalytic reduction system, identified as SCR1 (CSP);

(iii) One (1) high temperature baghouse dust collector, identified as BAG 2 (CSP), constructed in 2024, and

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024.

(4) One (1) powder handling operation to convey powder to a hopper and sagger filling after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing three (3) dust collector, identified as DC-033, DC-034 and DC-020A, as control.

This Powder Handling After CSP is approved in 2024 to add a control.

(5) Ten (10):

(i) One (1) electrically-heated kiln, identified as Kiln 1, permitted in 2022 to use a control, approved in 2023 to increase its maximum capacity, with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC-030, as control;

(ii) Two (2) electrically-heated kilns, identified as Kiln 2 and Kiln 3, constructed in 2022, approved in 2023 to increase its maximum capacity, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC-033, as control;

(iii) Four (4) electrically heated kilns, identified as Kiln 4, Kiln 5, Kiln 6, and Kiln 7, constructed in 2024, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, utilizing a dust collector, identified as DC033, as control.

(iv) Three (3) electrically heated rotary kilns, identified as Kiln 8, Kiln 9 and Kiln 10, constructed in 2024, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC033, as control.

(6) One (1) powder handling operation after the kilns, identified as Powder Handling After Kiln, with a maximum capacity of 84.90 pounds of powder conveyed to a hopper per hour, which feeds the milling process, and utilizing a dust collector, identified as DC-030, as control;

(7) Nine (9) enclosed mills:

(i) One (1) enclosed ball mill, identified as Mill 1, permitted in 2022 to use a control, with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control;

(ii) Two (2) DM1 post kiln enclosed mills, identified as Mill 2 and Mill 3, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control;

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-033 , as control.

(iv) Four (4) enclosed DM4 post-kiln mills, identified as Mill 6 to Mill 9, constructed in 2024, each with a maximum capacity of 30 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control.

(8) One (1) powder handling operation after the mill, including six (6) screeners and 1 packaging operation, identified as Powder Handling After Mill, with a maximum capacity of 70.77 pounds of powder screened per hour and then conveyed to the blending hopper, and utilizing a dust collector, identified as DC-030, as control;

(9) Five (5) primary enclosed blenders:

(i) One (1) primary enclosed blender, identified as Blender 1, permitted in 2022 to use a control, used to homogenize the mixture, utilizing a dust collector, identifies as DC-30, as control, and with no exhaust;

(ii) One (1) primary enclosed blender, identified as Blender 2, constructed in 2023, used to homogenize the mixture, utilizing a dust collector, identifies as DC-30, as control, and with no exhaust;

(iii) Three (3) primary enclosed blender, identified as Blender 3, Blender 4, and Blender 5, constructed in 2024, used to homogenize the mixture, utilizing a dust collector, identified as DC-30, as control, with no exhaust.

(10) One (1) final powder handling process, identified as Final Powder Handling, with a maximum capacity of 70.77 pounds of powder screened and packaged (six screeners) per hour, and utilizing a dust collector, identified as DC-061, as control.

This Final Powder Handling is approved in 2024 to change control.

(11) One (1) powder and media electric drying oven, identified as CSP Drying Oven. approved in 2025 for construction, using no controls, and exhausting indoors. This unit does not produce any emissions.

(12) One (1) powder and media jet mill classifier used for sizing, identified as CSP Jet Mill Classifier, approved in 2025 for construction, utilizing a dust collector, identified as DC-080, as control, and exhausting indoors.

Under NESHAP for Chemical Manufacturing Area Sources [40 CFR 63, Subpart VVVVVV], the one (1) powder manufacturing process, identified as CSP Department EU020, is considered an affected unit.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 PM PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following limits after controls specified in the table below:

Emission Unit	PM Limit (lbs/hr)
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	2.28

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.2 PM10, PM2.5 PSD Minor and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-7 (Part 70 Permits) not applicable, the Permittee shall comply with the following limits after controls specified in the table below:

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	2.28	2.28

Compliance with these limits, combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.3 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations except Lake County), PM emissions from the following emission units shall not exceed 0.03 grain per dry standard cubic foot of exhaust air:

Emission Unit
One (1) powder manufacturing process, identified as CSP Department EU020
Raw Material Handling CSP
Raw Material Mixing CSP

Emission Unit
Combustion Spray Pyrolysis (CSP) operation
Burners 1 to 6 Associated with EU020
Powder Handling After CSP
Powder Handling After Kilns
Enclosed Mills (Mills 1 to 9)
Powder Handling After Mills
Final Powder Handling
CSP Jet Mill Classifier

D.1.4 NOx FESOP Limits [326 IAC 2-8]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-7 (Part 70 Permits) not applicable, the Permittee shall comply with the following:

Emission Unit	NOx Limit after controls (lbs/hr)
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	12.66

Compliance with this limit, combined with the potential to emit NOx from all other emission units at this source, shall limit the source-wide total potential to emit of NOx to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

D.1.5 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.1.6 Emissions Control (PM, PM10, PM2.5, NOx)

(a) In order to comply with Conditions D.1.1, D.1.2, and D.1.3, the control devices for particulate control listed in the table below shall be in operation and control emissions from the following unit at all times this facility is in operation:

Emission Unit	Control Device
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	BAG 1 (CSP)
	BAG 2 (CSP)

(b) In order to comply with Condition D.1.3, the control device for particulate controls listed in the table below shall be in operation and control emissions from the following units at all times these facilities are in operation:

Emission Unit	Control Device
One (1) powder manufacturing process, identified as CSP Department EU020	
Powder Handling After CSP	DC-033, DC-034 and DC-020A
Powder Handling After Kilns 1 to 7	DC-030
Enclosed Mills 1 to 3 and 6 to 9	DC-030

Emission Unit	Control Device
Enclosed Mills 4 and 5	DC-033
Powder Handling After Mills	DC-030
Final Powder Handling	DC-061
CSP Jet Mill Classifier	DC-080

(c) In order to comply with Condition D.1.4, the two (2) selective catalytic systems, identified as SCR1 (CSP) and SCR2 (CSP), controlling NOx emissions from the one (1) combustion spray pyrolysis (CSP) operation shall operate at all times that the one (1) combustion spray pyrolysis (CSP) operation is in operation.

D.1.7 Testing Requirements

(a) To demonstrate compliance with Condition D.1.4, the Permittee shall perform NOx emissions testing from the following:

Emission Unit	Control Device
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	selective catalytic system SCR1 (CSP)

using the batch composition which would generate the highest NOx loading to the control equipment utilizing methods as approved by the Commissioner and shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(b) To demonstrate compliance with Condition D.1.4, within 180 days of the initial startup of SCR2 (CSP), the Permittee shall perform NOx emissions testing from the following:

Emission Unit	Control Device
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	selective catalytic system SCR2 (CSP)

using the batch composition which would generate the highest NOx loading to the control equipment utilizing methods as approved by the Commissioner and shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(c) The Permittee shall use the measured outlet emission rate (in lb/hr).

(d) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]

D.1.8 Dust Collector Inspections

The Permittee shall perform quarterly inspections of the control device controlling particulate emissions listed in the table below from the emission unit listed in the table below to verify that it is being operated and maintained in accordance with the manufacturer's specifications.

Emission Unit ID	Control Device ID
One (1) powder manufacturing process, identified as CSP Department EU020	

Emission Unit ID	Control Device ID
Combustion spray pyrolysis (CSP) operation	BAG 1 (CSP)
	BAG 2 (CSP)
Powder Handling After CSP	DC-033, DC-034 and DC-020A
Powder Handling After Kilns 1 to 7	DC-030
Enclosed Mills 1 to 3 and 6 to 9	DC-030
Enclosed Mills 4 and 5	DC-033
Powder Handling After Mills	DC-030
Final Powder Handling	DC-061
CSP Jet Mill Classifier	DC-080

Inspections required by this condition shall not be performed in consecutive months. All defective dust collectors shall be replaced.

D.1.9 Selective Catalytic Reduction System Monitoring Requirements

(a) Pressure drop:
The Permittee shall record the pressure drop across the two (2) selective catalytic reduction systems, identified as SCR1 (CSP) and SCR2 (CSP), used in conjunction with the one (1) combustion spray pyrolysis (CSP) operation, at least once per day when the one (1) combustion spray pyrolysis (CSP) operation is in operation.

(i) SCR1 (CSP):

When for any one reading, the pressure drop across the one (1) selective catalytic reduction system, identified as SCR1 (CSP), is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 0.2 and 6.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit.

(ii) SCR2 (CSP):

When for any one reading, the pressure drop across the one (1) selective catalytic reduction system, identified as SCR2 (CSP), is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 0.2 and 6.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

(b) Temperature:
(i) A continuous monitoring system shall be calibrated, maintained, and operated on the two (2) selective catalytic reduction systems, identified as SCR1 (CSP) and SCR2 (CSP), used in conjunction with the one (1) combustion spray pyrolysis (CSP) operation for measuring operating temperature.

For the purpose of this condition, continuous means no less than once per every fifteen (15) minutes. The output of this system shall be recorded as a 3-hour rolling average.

(ii) The Permittee shall determine the 3-hour minimum inlet temperature average from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.4.

(iii) SCR1 (CSP):

On and after the date the stack test results are available, the Permittee shall operate the one (1) selective catalytic reduction system, identified as SCR1 (CSP), at or above the 3-hour average minimum inlet temperature as observed during the compliant stack test. When for any one reading, the temperature is below the temperature established in most recent compliant stack test, the Permittee shall take reasonable response steps. A reading that is below the temperature as established in most recent compliant stack test is not a deviation from this permit.

(iv) SCR2 (CSP):

On and after the date the stack test results are available, the Permittee shall operate the one (1) selective catalytic reduction system, identified as SCR2 (CSP), at or above the 3-hour average minimum inlet temperature as observed during the compliant stack test. When for any one reading, the temperature is below the temperature established in most recent compliant stack test, the Permittee shall take reasonable response steps. A reading that is below the temperature as established in most recent compliant stack test is not a deviation from this permit.

(c) Ammonia injection rate:

(i) A continuous monitoring system shall be calibrated, maintained, and operated on the two (2) selective catalytic reduction systems, identified as SCR1 (CSP) and SCR2 (CSP), used in conjunction with the one (1) combustion spray pyrolysis (CSP) operation for measuring the ammonia injection rate.

For the purpose of this condition, continuous means no less than once per fifteen (15) minutes. The output of this system shall be recorded as a one-hour average.

(ii) The Permittee shall determine the one-hour average injection rates from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.2.

(iii) SCR1 (CSP):

On and after the date the stack test results are available, the Permittee shall inject ammonia at or above the one-hour average injection rates as observed during the compliant stack test for SCR1 (CSP). When for any one reading the one-hour injection rate falls below the above mentioned one-hour injection rate, the Permittee shall take a response step. A one-hour average that is outside the appropriate injection rate is not a deviation from this permit.

(iv) SCR2 (CSP):

On and after the date the stack test results are available, the Permittee shall inject ammonia at or above the one-hour average injection rates as observed during the compliant stack test for SCR2 (CSP). When for any one reading the one-hour injection rate falls below the above mentioned one-hour injection rate, the Permittee shall take a response step. A one-hour average that is outside the appropriate injection rate is not a deviation from this permit.

(d) Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.10 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.8, the Permittee shall maintain records of the dates and results of the inspections required under Condition D.1.8.

(b) To document the compliance status with Condition D.1.9(a), the Permittee shall maintain daily records of the pressure drop across the two (2) selective catalytic reduction systems, identified as SCR1 (CSP) and SCR2 (CSP), controlling the one (1) combustion spray pyrolysis (CSP). The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(c) To document the compliance status with Condition D.1.9(b), the Permittee shall maintain continuous temperature records for the two (2) selective catalytic reduction systems, identified as SCR1 (CSP) and SCR2 (CSP), and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(d) To document the compliance status with Condition D.1.9(c), the Permittee shall maintain records of the one-hour average ammonia injection rate into the two (2) selective catalytic reduction system, identified as SCR1 (CSP) and SCR2 (CSP), used in conjunction with the one (1) combustion spray pyrolysis (CSP).

(e) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

1550 Polco Street

(b) Thirty (30) specialty powders manufacturing operations, located at the 1550 Polco Street Specialty Powders area:

(1) Twenty-three (23) specialty powders manufacturing operations,
(i) modified in 2015 to reroute baghouses,
(ii) modified in 2016 to construct a new operation,
(iii) modified in 2018 to change the amount of dust collected by the dust collectors, and
(iv) modified in 2023 add a powder processing equipment,

each controlled by an integral baghouse and HEPA filters, identified in the table below, and exhausting indoors:

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	166.67	DC048	Powder 1 powder processing, including a blender, sieve, vertical material conveyor, crusher, mill, dust booth, three (3) screeners, and one (1) classifier (DC073). DC048 controls the classifier and the rest of the units.
EUS-2	166.67	DC015	One (1) blender and weigh out station for Powder 2 Bay 2
EUS-7	83.335	DC028, DC013	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, and screening. DC013 controls the impact mill and conveyor in Bay 5.
EUP-3	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in electric furnace and placed into vacuum chamber to form a powder
EUS-3	429.3	DC064	Approved in 2018 for modification of the dust collectors and descriptive information. Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling.
---	312.5	---	Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
---	---	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	312.5	DC012, DC013	Powder 3 is milled and sized. DC013 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.
EUS-8B	58.4	DC040	Powder 4 handling in mill and

				blender prior to furnacing.
	EUS-8A	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
	EUS-10	300	DC043, DC044, DC045, Powder 5 Baghouse	Processes oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five (5) screeners. DC043 controls one (1) blender, one (1) screener, four (4) filling machines, the filling station (bag breaking table), and two (2) delumpers. DC044 controls one (1) blender, one (1) screener, one (1) weigh station, one (1) delumper, and three (3) mixing tanks. DC045 controls one (1) blender, one (1) screener, three (3) mixing tanks, and one (1) hopper. The Powder 5 Baghouse controls the spray dryer hot exhaust.
	EUP-11*	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
	EUP-11A*	100	DC002 (Stack S001)	Thermal barrier coating (TBC) Spray Dryer 2
	EUP-11B**	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
	EUS-15A	341.66	DC026	Approved in 2018 for modification of the dust collectors and descriptive information. 2 Screeners and 2 Blenders in Powder 2 Processing for Lines 1 and 2. Line 1 and 2 screeners and blenders are controlled by DC026. DC026 is also connected to classifiers DC072 and DC071, which are associated with Lines 1 and 2, respectively.
	EUS-15B	341.66	DC059	Approved in 2018 for modification of the dust collectors and descriptive information. 4 Screeners and 2 Blenders in Powder 2 Processing for Lines 3 and 4. DC059 is also connected to

				classifiers DC070, DC023, and DC069, which are associated with Lines 3, 4, and 5, respectively.
	---	---	DC056	DC056 controls packaging.
	EUS-15C	341.66	DC060	Approved in 2018 for modification of the descriptive information. 4 Screeners and 2 Blenders in Powder 2 Processing for Lines 5 and 6. DC060 is also connected to classifiers DC011 and DC068, which are both associated with Line 6.
	Scale	---	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
	EUS-15F	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
	EUS-15G	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
	EUS-15I (constructed in 2024)	56.94	DC032	1 blender and 1 weigh out station used for Powder 2.
	EUP-17 (approved in 2023 to change control)	8.33	DC035, DC045, New Dust collector	Viga 2/5 and Viga 45, for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC045, New Dust collector, while the exhaust from the viga is controlled by DC035.
	EUS-22	21.606	DC005	Powder 7 Operation: Electric furnace, five (5) mills, three (3) jaw crushers, one (1) blender, one (1) screener, one (1) de-egger, one (1) fill station, one (1) classifier, and one (1) work bench. DC005 controls all operations, including the classifier.
	EUS-4A	429.3	DC007, DC054	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls two classifiers, the scale, the screeners, and general powder handling operations. DC054

			controls the spray dryer.
EUS-12	100	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.
*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material. **This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC.			

(2) One (1) specialty powders manufacturing operation, identified as EUS-15D, constructed in 2018, controlled by an integral baghouse, identified as DC074, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15D.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15D	341.66	DC074 (Baghouse)	Support for Viga 250 #3, used for Powder 2. DC079 controls dust from support operations in the Viga 250 #3.

(3) One (1) specialty powder manufacturing operation, constructed in 2018, utilizing no control, and enclosed with no exhaust.

Emission Unit ID	Maximum Throughput (lb/hr)	Description
EUS-15E	341.66	5 Screeners not controlled by a conventional dust collector. These screeners use internal components to separate/segregate manufactured powder into the desired particle size.

(4) One jet mill, identified as EUS-23, constructed in 2021, that is part of the Powder 7 specialty powders manufacturing operations, connected with one classifier, with a maximum throughput of 45 lb/hr, located at 1550 Polco Street, utilizing an integral dust collector, identified as DC006, as control and exhausting outside to stack S006.

(5) One (1) specialty powder manufacturing operation, identified as EUS-15H, constructed in 2024, controlled by a baghouse, identified as DC087, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as and EUS-15H.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15H	341.66	DC087 (Baghouse)	Used for Powder 2.

(6) One (1) specialty powder manufacturing operation, identified as EUS-25, approved in 2025 for construction, controlled by a baghouse, identified as DC076, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G76. There are

two (2) additional small baghouses for the spray dryers, identified as DC077 and DC078.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-25.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25	52.48	DC076, DC077, and DC078 (Baghouses)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: four (4) 24" vibratory mills, four (4) screw feeders, one (1) electric spray dryer, one (1) natural gas-heated spray dryer, six (6) electric kilns, three (3) 24" classifiers, two (2) vacuum conveyors, one (1) mixer blender, two (2) wet stirred bead mills and two (2) plastic tanks for mixing.

(7) One (1) specialty powder R&D operation, identified as EUS-25A, approved in 2025 for construction, controlled by a baghouse, identified as DC079, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G79.

The HEPA filters are not considered as integral to the one (1) specialty powders R&D operation, identified as EUS-25A.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: two (2) electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table.

(8) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(9) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-26	5.25	DC075 (Baghouse)	Powder is weighed, mixed into a slurry, and spray-dried. The

			process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the specialty powders manufacturing operation (except EUP-11B) are considered affected units.

(c) Titanium Power Processes:

(i) One (1) titanium powder process, identified as Titanium Powder Process 1, constructed in 2015, located at 1550 Polco Street, utilizing a wet collector, identified as Rotoclone, as control, with a maximum of 4.00 pounds of particulate collected by the wet collector per hour, and exhausting outdoors.

(ii) One (1) titanium powder process, identified as Titanium Powder Process 2, constructed in 2023, located at 1550 Polco Street, utilizing a wet collector, identified as Rotoclone, as control, with a maximum of 4.00 pounds of particulate collected by the wet collector per hour, and exhausting outdoors.

The maximum capacity of these processes has been considered confidential information.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the (2) titanium powder processes are considered affected units.

(d) One (1) coating mixing operation, identified as Sermatech Process, constructed prior to 2014, with the following maximum mixing capacities:

(1) 60.00 pounds per hour of water-based paint and
(2) 24.00 pounds per hour of solvent-based paint

located at the 1550 Polco Street Specialty Powders area, utilizing two (2) scrubbers, identified as Scrubber #1 and Scrubber #2, and exhausting indoors.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the one (1) coating mixing operation is considered an affected unit.

(e) One (1) polishing operation, located at 1550 Polco Street, and consisting of the following:

(1) One (1) powder handling operation, with a maximum capacity of 9152.86 pounds per hour, and including:

(A) Four (4) lens polish mixing tank loading, constructed prior to 2014 and modified in 2015, and utilizing a dust collector, identified as DC030, as control;

(B) One (1) suspension room custom blend loading, constructed prior to 2014, identified as EUS-20, and utilizing a dust collector, identified as DC032, as control;

(C) One (1) suspension room powder packaging, constructed prior to 2014, identified as EUS-18, and utilizing a dust collector, identified as DC032, as control; and

(D) Powder loading into one (1) of four (4) premix tanks operation, constructed prior to 2014, collectively identified as EUS-19, and utilizing a dust collector, identified as DC032, as control.

(2) One (1) polish mixing operation:

(A) One (1) lens polish mixing and filling operation constructed prior to 2014, utilizing a dust collector, identified as DC062, as control, and consisting of the following:

(i) Eight (8) mixing tanks,

(ii) Two (2) holding tanks,

(iii) One (1) bottle filling line, and

(iv) One (1) pail filling line,

The filling process creates a bottleneck so that only two (2) mixing tanks can be run at one time.

(B) One (1) suspension room mixing operation, constructed prior to 2014, consisting of two (2) mixing tanks with capacities of 50 gallons and 25 gallons, with a batch time of four (4) hours, and utilizing a dust collector, identified as DC032, as control.

(f) One (1) specialty ingot manufacturing process, constructed in 2016 and modified in 2018 to add a lathe, located at 1550 Polco Street, and consisting of the following:

(1) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, utilizing a voluntary dust collector as control while transferring powder from the spray dryer to the feed tank, and exhausting indoors.

(2) One (1) feed tank.

(3) One (1) electric sintering kiln.

(4) One (1) lathe, identified as Ingot Machining Lathe, constructed in 2018, with a maximum capacity of 100 pounds per hour, utilizing no control, and exhausting indoors.

1500 Polco Street

(i) One (1) grit blasting unit:

(1) One (1) aluminum oxide grit blasting unit, identified as EU13C, constructed in 2018, with a maximum capacity of 129 pounds per hour, located at 1500 Polco Street, controlled by a baghouse, identified as C13C, and exhausting to stack/vent ID 13C.

1245 Main Street

(l) Twenty-two (22) grit blasting units:

(1) Thirteen (13) aluminum oxide grit blasting units, located at 1245 Main Street, each utilizing a baghouse as control, and exhausting to the Stack/Vents in the table below:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device	Exhaust
EU09C	1994	360	C09C	09C
EU001G	Constructed prior to 2014	600	C001G	01G
EU002G		600	C002G	02G
EU004G		600	C004G	04G
EU005G		600	C005G	05G
EU008G		600	C008G	08G
EU010G		600	C010G	10G
EU011G		600	C011G	11G
EU013G		200	C013G	13G
EU014G		600	C014G	14G
EU016G		600	C016G	16G
EU018G		600	C018G	18G
EU019G		600	C019G	19G

(2) One (1) aluminum oxide grit blasting unit, identified as, EU012G, constructed in 2015, with a maximum capacity of 50 pounds per hour, located at 1245 Main Street, utilizing a dust collector, identified as DC012G, as control, and exhausting indoors.

(3) One (1) silicon carbide grit blasting unit, identified as EU007G, constructed prior to 2014, with a maximum capacity of 360 pounds per hour, located at 1245 Main Street, utilizing a baghouse, identified as C007G, as control, and exhausting indoors.

(4) Two (2) fine grit blasting units, constructed prior to 2014, located at 1245 Main Street, each with a maximum capacity of 600 pounds per hour, each utilizing a baghouse as control, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
EU01M	C01M
EU02M	C02M

(5) One (1) steel shot peen shot blasting cabinet, identified as EU01L, constructed in 1994, with a maximum capacity of 5.36 pounds per hour, located at 1245 Main Street, utilizing a baghouse, identified as C01L, as control, and exhausting to Stack/Vent 01L.

(6) Two (2) glass bead cabinet blasting units, constructed prior to 2014, each with a maximum capacity of 600 pounds per hour, located at 1245 Main Street, each utilizing a baghouse as control, and exhausting to the Stack/Vents in the table below:

Emission Unit ID	Control Device	Exhaust
EU01GB	C01GB	01GB
EU02GB	C02GB	02GB

(7) One (1) aluminum oxide grit blasting unit, identified as EU021G, constructed in 2021, with a maximum capacity of 120 pounds per hour, located at 1245 Main Street, utilizing a dust collector, identified as DC021G, as control, and exhausting indoors.

(8) One (1) steel shot peen shot blasting cabinet, identified as EU02L, constructed in 2021, with a maximum capacity of 5.36 pounds per hour, located at 1245 Main Street, utilizing a baghouse, identified as DC02L, as control, and exhausting indoors.

1415 Main Street

(q) Twenty-three (23) grit blasting units:

(1) Nine (9) aluminum oxide grit blasting units, located at 1415 Main Street, each utilizing a baghouse as control, and exhausting to the Stack/Vents in the table below:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device	Exhaust
EU01C	1994	360	C01C	01C
EU04C		360	C04C	04C
EU05C		360	C05C	05C
EU06C		360	C06C	06C
EU07C		360	C07C	07C
EU08C		360	C08C	08C
EU10C	1996	360	C10C	10C
EU12C	1998	360	C12C	12C
EU16C	2017	600	C16C	16C

(2) One (1) aluminum oxide robotic grit blasting unit, identified as EU03C, constructed in 1994, with a maximum capacity of 360 pounds per hour, located at 1415 Main Street, utilizing a baghouse, identified as C03C, as control, and exhausting to Stack/Vent 03C.

(3) One (1) fine grit blasting unit, identified as EU01M, constructed in 2015, with a maximum capacity of 600 pounds per hour, located at 1415 Main Street, utilizing a dust collector, identified as C01M, as control, and exhausting indoors.

(4) Five (5) Operation 1, Process 1 aluminum oxide grit blasting units, each utilizing a baghouse with HEPA filters as control, located at 1415 Main Street, exhausting indoors, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device
O1P1-EUG6	Constructed prior to 2014	173	O1P1-CG6
O1P1-EUG7	2016	81	O1P1-CG7

(5) Four (4) Operation 2, Process 1 aluminum oxide grit blasting units, each utilizing a baghouse with HEPA filters as control, located at 1415 Main Street, exhausting indoors, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Control Device
O2P1-EUG1	Constructed prior to 2014	224	Baghouse with HEPA Filter O2P1-CG1/2
O2P1-EUG2		224	
O2P1-EUG3		81	Baghouse with HEPA Filter O2P1-CG3/4

O2P1-EUG5	2015	50	Dust Collector O2P1-CG5

(6) Two (2) Operation 2, Process 3 calcined alumina grit blasting units, constructed prior to 2014, each with a maximum capacity of 221 pounds per hour, each utilizing a baghouse with HEPA filters as control, located at 1415 Main Street, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
O2P3-EUG1	O2P3-CG1
O2P3-EUG2	O2P3-CG2

(7) One (1) silicon carbide grit blasting unit, identified as EU11C, constructed in 2019, with a maximum capacity of 180 pounds per hour, using a baghouse, identified as C11C, as control, and exhausting indoors.

(8) One (1) aluminum oxide grit blasting unit, identified as EU21, constructed in 2024, with a maximum capacity of 50 pounds per hour, located at 1415 Main Street, controlled by a baghouse, identified as C21, and exhausting inside the building.

(r) One (1) Operation 2 Process 3, identified as O2P3 EUG3, constructed in 2019, consisting of one (1) abrasive dry ice blasting unit, with a maximum dry ice throughput of 1,000 pounds per week, with a residual powder total of 0.25 pounds per part, using a dust collector as control, identified as CG2, and exhausting indoors.

(s) Two (2) aluminum oxide wet grit blasting units, located at 1415 Main Street, utilizing mist collectors as control, and exhausting indoors:

Emission Unit ID	Construction Year	Maximum Capacity (lbs/hr)	Mist Collector ID
EU14C	Constructed prior to 2014	600	C14C
EU15C	2018	600	C15C

(t) One (1) pack diffusion process, identified as Pack Diffusion Process, constructed in 2017, located at 1415 Main Street, and including the following:

(1) One (1) pack station, with a total powder throughput of 100 pounds per hour, utilizing a scrubber as control, and exhausting outdoors.

(2) One (1) unpack station, with a total powder throughput of 100 pounds per hour, utilizing a scrubber as control, and exhausting outdoors.

(3) One (1) abrasive blasting unit, using dry ice as the abrasive material and one (1) air blasting unit, using no abrasive material, with a total powder residual of 0.5 pounds per part, utilizing a dust collector as control, and exhausting indoors.

(u) One (1) Operation 1, Process 1 (O1P1), constructed prior to 2014, with a maximum capacity of 39,795 pounds of waste particulate collected per year, located at 1415 Main Street, utilizing two (2) integral dust collectors with HEPA filters, identified as DCC1-CV and DCC4-CV, as control, and exhausting indoors.

(v) One (1) Operation 2, Process 1 (O2P1), constructed prior to 2014, located at 1415 Main Street, consisting of six (6) Q-Salt tanks each with a maximum capacity of 10.6 gallons, utilizing no control, and exhausting indoors.

(w) One (1) Operation 2, Process 2 (O2P2), constructed prior to 2014, located at 1415 Main Street, exhausting indoors, and consisting of the following:

(1) One (1) slurry masking process, with a maximum capacity of less than 12 pounds of material per hour, manually applied using a brush, and utilizing no control; and

(2) One (1) dry masking process, constructed in 2017, with a maximum capacity of 10 tons of material per year, and ventilating to a down-draft table with cartridge filters.

(x) One (1) Operation 2, Process 4 (O2P4), constructed prior to 2014, modified in 2016, and modified in 2017, located at 1415 Main Street, with a maximum activator compound consumption of less than 1 pound per hour, utilizing a water scrubber as control, and exhausting indoors.

(y) Three (3) grinders, constructed prior to 2014, located at 1415 Main Street, each with a maximum capacity of 100 pounds per hour, each utilizing dust collectors with HEPA filters as control, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
Bader Grinder #2	C03C
Bader Grinder #3	C07B
Bader Grinder #4	C08B

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the three (3) grinders are considered affected units.

INSIGNIFICANT ACTIVITIES:

1550 Polco Street

(a) Two (2) grinding and cutting operations:

(1) One (1) machine shop, identified as Building 1550 Maintenance Shop, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1550 Polco Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) Three (3) arc welding stations, each with a maximum capacity of 2.4 pounds of electrode per hour;
(B) One (1) chop saw;
(C) Two (2) grinders;
(D) One (1) belt sander;
(E) One (1) wet cutting saw;
(F) One (1) vertical band saw;
(G) One (1) lathe; and
(H) One (1) roller.

(2) One (1) crucible cutting operation, identified as Specialty Powders Crucible Cutting (CC019), constructed prior to 2014, with a maximum capacity of 5 pounds of granite per hour, located at 1550 Polco Street, utilizing a dust collector, identified as DC019, as control, and exhausting indoors.

1500 Polco Street

(b) One (1) epoxy kit operation, identified as EUS-12, constructed in 1985, located at 1550 Polco Street, with a maximum capacity of:

(1) 56.0 pounds of epoxy kits containing acetone per hour and
(2) 50 pounds of vermiculate for use in packaging per hour, utilizing a dust collectors with HEPA filters, identified as DC014, to control vermiculate pouring

and exhausting indoors.

(c) Three (3) 3D printers, each with a maximum consumption of 1.83 tons per year of nickel-based powder products, identified as NI-202 products, located at 1500 Polco Street, utilizing no control, and exhausting indoors.

Number of Units	Construction Year
One (1)	2018
Two (2)	2017

(d) Three (3) grinding and cutting operations:

(1) One (1) machine shop, identified as Building 1500 Machine Shop, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1500 Polco Street, exhausting indoors, and consisting of the following:

(A) One (1) band saw utilizing no control;
(B) One (1) chop saw utilizing a dust collector as control;
(C) Four (4) wheel grinders utilizing no control;
(D) Six (6) drill presses utilizing a dust collector as control;
(E) Four (4) lathes, using cutting fluids, and utilizing no control;
(F) Two (2) surface grinders utilizing no control;
(G) One (1) press utilizing no control;
(H) One (1) belt sander utilizing no control;
(I) Two (2) wire electrical discharge machining (EDM) cutting machines utilizing no control; and
(J) One (1) computer numerical control (CNC) mill, using cutting fluids and lubricants, and utilizing no control.

(2) One (1) fabrication shop, identified as Building 1500 Fabrication Shop, with a maximum capacity of 50 pounds of metal per hour, located at 1500 Polco Street, exhausting indoors, and consisting of the following:

(A) One (1) shear utilizing no control;
(B) One (1) drill press utilizing no control;
(C) One (1) lathe, using cutting fluids, and utilizing no control;
(D) One (1) press utilizing no control;
(E) Two (2) press brakes utilizing no control;
(F) One (1) cutter/grinder utilizing no control;
(G) Two (2) punch presses utilizing no control; and
(H) One (1) engraver utilizing no control.

(3) One (1) maintenance welding shop, identified as Maintenance Welding Shop, constructed in 2017, with a maximum capacity of 5 pounds of metal per hour, located at 1500 Polco Street, utilizing no control, exhausting outdoors through a fume extraction system, and consisting of the following:

(A) One (1) MIG welding station, with a maximum capacity of 3 pounds of electrode per hour;
(B) One (1) arc welding station, with a maximum capacity of 2.4 pounds of electrode per hour;
(C) One (1) plasma flame cutting stations, each with a maximum cutting capacity of 300 inches of 0.5 inch thick metal per minute; and
(D) One (1) wheel grinder with a maximum capacity of 5 pounds of metal per hour.

(e) One (1) carpenter shop, identified as Carpentry Shop, constructed prior to 2018, each tool with a maximum capacity of 50 pounds of wood per hour, located at 1500 Polco Street, utilizing a dust collector, identified as Carpenter Shop Dust Collector, as control, exhausting indoors, and consisting of the following tools:

(A) One (1) band saw utilizing no control;
(B) One (1) drill press utilizing no control;
(C) One (1) belt sander utilizing no control;
(D) One (1) circular saw utilizing a dust collector as control; and
(E) One (1) table saw utilizing a dust collector as control.

(f) Two (2) emergency generators, utilizing no control, and exhausting indoors:

Location	Emission Unit ID	Maximum Capacity (HP)	Fuel Type	Date Installed	Date Manufactured	Engine Type
1500 Polco Street	Generac	207	Diesel	1999	1999	6 cylinder
1500 Polco Street - Power House	ONAN/ Cummins	168	Diesel	1975	1975	6 cylinder

Under NESHAP for Stationary reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ], the two (2) emergency generators are considered affected units.

1245 Main Street

(g) One (1) grit reclassifier, identified as EU020G, constructed in 2015, with a maximum capacity of 400 pounds of aluminum oxide per hour, located at 1245 Main Street, utilizing a dust collector, identified as DC020G, as control, and exhausting indoors.

(h) Seventeen (17) grinding and cutting operations:

(1) One (1) maintenance shop, identified as Building 1245 Maintenance Shop, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1245 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) Three (3) band saws,
(B) Two (2) drill presses,
(C) Four (4) lathes, using cutting fluid,
(D) One (1) shear,
(E) Two (2) grinders,
(F) One (1) belt sander,
(G) One (1) MIG welding station with a maximum capacity of 3 pounds of electrode per hour, and

(H) One (1) arc welding station with a maximum capacity of 2.4 pounds of electrode per hour.

(2) Fifteen (15) grinders, identified as Building 1245 Various Grinders, constructed prior to 2014, with a maximum capacity of 100 pounds of metal per hour, located at 1245 Main Street, exhausting indoors, and consisting of the following:

(A) Two (2) wheel grinders, located near EU01M and EU06C, and each utilizing a portable voluntary dust collector as control;
(B) Two (2) grinders utilizing no control;
(C) Three (3) brush grinders, located near EU16C and EU10G, and utilizing no control;
(D) Seven (7) outside diameter (OD) grinders, each utilizing a dust collector as control; and
(E) Two (2) surface grinders utilizing no control.

(3) One (1) grinder, identified as Brown and Sharp Grinder, constructed in 2015, with a maximum capacity of 3 pounds of metal per hour, located at 1245 Main Street, utilizing a dust collector as control, and exhausting to the indoors.

(i) Five (5) finishing units:

(1) Three (3) polishers, constructed prior to 2014, located at 1245 Main Street, utilizing a dust collector, identified as DC016A, as control, and exhausting indoors.

(2) One (1) hone process, constructed prior to 2015, located at 1245 Main Street, utilizing a dust collector, identified as DC016A, as control, and exhausting indoors.

(3) One (1) downdraft table for handheld equipment, identified as Maxflo DD23, constructed in 2015, located at 1245 Main Street near the aluminum oxide grit blasting units, utilizing no control, and exhausting indoors.

1415 Main Street

(k) Six (6) grinding and cutting operations:

(1) One (1) maintenance shop, identified as Maintenance Shop #1, constructed prior to 2018, with a maximum capacity of 100 pounds of metal per hour, located at 1415 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) One (1) horizontal band saw;
(B) One (1) shear;
(C) Two (2) drill presses;
(D) One (1) vertical band saw;
(E) One (1) mobile circular saw;
(F) One (1) belt sander;
(G) One (1) wheel grinder
(H) One (1) MIG welding station, with a maximum capacity of 3 pounds of electrode per hour;
(I) One (1) arc welding station, with a maximum capacity of 2.4 pounds of electrode per hour;
(J) One (1) lathe, using cutting fluids; and
(K) One (1) circular cutting saw.

(2) One (1) maintenance shop, identified as Maintenance Shop #2, constructed prior to

2018, with a maximum capacity of 100 pounds of metal per hour, located at 1415 Main Street, utilizing no control, exhausting indoors, and consisting of the following:

(A) One (1) drill press,
(B) One (1) vertical band saw,
(C) One (1) belt sander, identified as JET belt sander,
(D) Two (2) wheel grinders.

(3) Four (4) vented tables used for insignificant grinding, identified as Building 1415 Vented Tables, constructed prior to 2015, with a total maximum capacity of 50 pounds of metal per hour, located at 1415 Main Street, utilizing no control, and exhausting indoors.

(l) One (1) finishing unit:

(1) One (1) downdraft table for handheld equipment, constructed in 2015, identified as DTH800, located at 1415 Main Street near Operation 1, Process 1 (O1P1), utilizing no control, and exhausting indoors.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 PSD Minor Limits (PM) [326 IAC 2-2]

In order to render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following limits after control specified in the table below:

Emission Unit	PM Limit (lbs/hr)
1550 Polco Street	
One (1) Titanium Powder Process 1	0.80
One (1) Titanium Powder Process 2	0.80
1500 Polco Street	
One (1) grit blasting unit	
EU13C	0.50
1245 Main Street	
Twenty-two (22) grit blasting units	
EU09C	0.50
EU001G	0.50
EU002G	0.50
EU004G	0.50
EU005G	0.50
EU008G	0.50
EU010G	0.50
EU011G	0.50
EU013G	0.50
EU014G	0.50
EU016G	0.50
EU018G	0.50
EU019G	0.50

Emission Unit	PM Limit (lbs/hr)
EU012G	0.50
EU007G	0.50
EU01M	0.50
EU02M	0.50
EU01L	0.50
EU01GB	0.50
EU02GB	0.50
EU021G	0.50
EU02L	0.50
1415 Main Street	
Twenty-two (22) grit blasting units	
EU01C	0.50
EU04C	0.50
EU05C	0.50
EU06C	0.50
EU07C	0.50
EU08C	0.50
EU10C	0.50
EU12C	0.50
EU16C	0.50
EU03C	0.50
EU01M	0.50
O1P1-EUG6	0.50
O1P1-EUG7	0.50
O2P1-EUG1	0.50
O2P1-EUG2	0.50
O2P1-EUG3	0.50
O2P1-EUG5	0.50
O2P3-EUG1	0.50
O2P3-EUG2	0.50
EU11C	0.50
Two (2) wet grit blasting units	
EU14C	0.50
EU15C	0.50
Three (3) grinders	
Bader Grinder #2	0.10
Bader Grinder #3	0.10
Bader Grinder #4	0.10

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.2.2 FESOP Limits (PM10 and PM2.5) [326 IAC 2-2] [326 IAC 2-8]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 (Prevention of Significant

Deterioration (PSD)) and 326 IAC 2-7 (Part 70 Permits) not applicable, the Permittee shall comply with the following limits after control specified in the table below:

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
1550 Polco Street		
One (1) Titanium Powder Process 1	0.80	0.80
One (1) Titanium Powder Process 2	0.80	0.80
1500 Polco Street		
One (1) grit blasting unit		
EU13C	0.09	0.09
1245 Main Street		
Twenty-two (22) grit blasting units		
EU09C	0.09	0.09
EU001G	0.09	0.09
EU002G	0.09	0.09
EU004G	0.09	0.09
EU005G	0.09	0.09
EU008G	0.09	0.09
EU010G	0.09	0.09
EU011G	0.09	0.09
EU013G	0.09	0.09
EU014G	0.09	0.09
EU016G	0.09	0.09
EU018G	0.09	0.09
EU019G	0.09	0.09
EU012G	0.09	0.09
EU007G	0.09	0.09
EU01M	0.09	0.09
EU02M	0.09	0.09
EU01L	0.09	0.09
EU01GB	0.09	0.09
EU02GB	0.09	0.09
EU021G	0.09	0.09
EU02L	0.09	0.09
1415 Main Street		
Twenty-two (22) grit blasting units		
EU01C	0.09	0.09
EU04C	0.09	0.09
EU05C	0.09	0.09
EU06C	0.09	0.09
EU07C	0.09	0.09
EU08C	0.09	0.09
EU10C	0.09	0.09
EU12C	0.09	0.09
EU16C	0.09	0.09
EU03C	0.09	0.09
EU01M	0.09	0.09

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
O1P1-EUG6	0.09	0.09
O1P1-EUG7	0.09	0.09
O2P1-EUG1	0.09	0.09
O2P1-EUG2	0.09	0.09
O2P1-EUG3	0.09	0.09
O2P1-EUG5	0.09	0.09
O2P3-EUG1	0.09	0.09
O2P3-EUG2	0.09	0.09
EU11C	0.09	0.09
EU21	0.09	0.09
Two (2) wet grit blasting units		
EU14C	0.09	0.09
EU15C	0.09	0.09
Three (3) grinders		
Bader Grinder #2	0.10	0.10
Bader Grinder #3	0.10	0.10
Bader Grinder #4	0.10	0.10

Compliance with these limits, combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

D.2.3 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations except Lake County), PM emissions from the following emission units shall not exceed 0.03 grain per dry standard cubic foot of exhaust air:

Emission Unit
1550 Polco Street
Twenty nine (29) specialty powders manufacturing operations
EUS-1
EUS-2
EUS-7
EUP-3
EUS-3
EUS-5
EUS-8B
EUS-8A
EUS-10
EUP-11
EUP-11A
EUP-11B
EUS-15A
EUS-15B
EUS-15C
Scale

Emission Unit
EUS-15F
EUS-15G
EUS-15H
EUS-15I
EUP-17
EUS-22
EUS-4A
EUS-12
EUS-15D
EUS-23
EUS-25
EUS-25A
EUS-R&D
EUS-26
One (1) Titanium powder process 1
One (1) Titanium powder process 2
One (1) coating mixing operation Sermatech Process
One (1) polishing operation
Four (4) lens polish mixing tank loading
Suspension room custom blend loading (EUS-20)
Suspension room powder packaging (EUS-18)
Powder loading (EUS-19)
One (1) specialty ingot manufacturing process
One (1) material transfer point
Ingot Machining Lathe
1500 Polco Street
One (1) grit blasting unit
EU13C
1245 Main Street
Twenty-two (22) grit blasting units
EU09C
EU001G
EU002G
EU004G
EU005G
EU008G
EU010G
EU011G
EU013G
EU014G
EU016G
EU018G
EU019G
EU012G
EU007G

Emission Unit
EU01M
EU02M
EU01L
EU01GB
EU02GB
EU021G
EU02L
1415 Main Street
Twenty-three (23) grit blasting units
EU01C
EU04C
EU05C
EU06C
EU07C
EU08C
EU10C
EU12C
EU16C
EU03C
EU01M
O1P1-EUG6
O1P1-EUG7
O2P1-EUG1
O2P1-EUG2
O2P1-EUG3
O2P1-EUG5
O2P3-EUG1
O2P3-EUG2
EU11C
One (1) dry ice blasting unit
O2P3 EUG3
Two (2) wet grit blasting units
EU14C
EU15C
One (1) pack diffusion process (Pack Diffusion Process)
One (1) pack station
One (1) unpack station
One (1) abrasive blasting unit and one (1) air blasting unit
One (1) Operation 1, Process 1 (O1P1)
One (1) Operation 2, Process 1 (O2P1)
One (1) Operation 2, Process 2 (O2P2) - Dry Masking Process
Three (3) grinders
Bader Grinder #2
Bader Grinder #3
Bader Grinder #4

Emission Unit
INSIGNIFICANT ACTIVITIES:
1550 Polco Street
Two (2) grinding and cutting operations
1500 Polco Street
One (1) epoxy kit operation (EUS-12)
Three (3) 3D printers
Three (3) grinding and cutting operations
One (1) carpenter shop
Two (2) emergency generators
1245 Main Street
Grit reclassifier (EU020G)
Seventeen (17) grinding and cutting operations
Five (5) finishing units
1415 Main Street
Six (6) grinding and cutting operations
One (1) finishing unit

D.2.4 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.2.5 Particuale Emissions Control

(a) In order to comply with Conditions D.2.1, D.2.2, and D.2.3, the control devices for particulate control listed in the table below shall be in operation and control emissions from the following units at all times these facilities are in operation:

Emission Unit	Control Device ID
1550 Polco Street	
One (1) Titanium Powder Process 1	Rotoclone (Wet Collector)
One (1) Titanium Powder Process 2	Wet Collector
1500 Polco Street	
One (1) grit blasting unit	
EU13C	C13C
1245 Main Street	
Twenty-two (22) grit blasting units	
EU09C	C09C
EU001G	C001G
EU002G	C002G
EU004G	C004G
EU005G	C005G
EU008G	C008G
EU010G	C010G
EU011G	C011G

Emission Unit	Control Device ID
EU013G	C013G
EU014G	C014G
EU016G	C016G
EU018G	C018G
EU019G	C019G
EU012G	DC012G
EU007G	C007G
EU01M	C01M
EU02M	C02M
EU01L	C01L
EU01GB	C01GB
EU02GB	C02GB
EU021G	DC021G
EU02L	DC02L
1415 Main Street	
Twenty-two (22) grit blasting units	
EU01C	C01C
EU04C	C04C
EU05C	C05C
EU06C	C06C
EU07C	C07C
EU08C	C08C
EU10C	C10C
EU12C	C12C
EU16C	C16C
EU03C	C03C
EU01M	C01M
O1P1-EUG6	O1P1-CG6
O1P1-EUG7	O1P1-CG7
O2P1-EUG1	O2P1-CG1/2
O2P1-EUG2	
O2P1-EUG3	O2P1-CG3/4
O2P1-EUG5	O2P1-CG5
O2P3-EUG1	O2P3-CG1
O2P3-EUG2	O2P3-CG2
EU11C	C11C
Two (2) wet grit blasting units	
EU14C	C14C
EU15C	C15C
Three (3) grinders	
Bader Grinder #2	C03C
Bader Grinder #3	C07B
Bader Grinder #4	C08B

(b) In order to comply with Condition D.2.3, the control devices for particulate control listed in the table below shall be in operation and control emissions from the following units at all times these facilities are in operation:

Emission Unit	Control Device ID
1550 Polco Street	
Twenty-nine (29) specialty powders manufacturing operations	
EUS-1	DC048
EUS-2	DC015
EUS-7	DC028, DC013
EUP-3	DC063
EUS-3	DC064
EUS-5	DC012, DC013
EUS-8B	DC040
EUS-8A	DC041
EUS-10	DC043, DC044, DC045, Powder 5 Baghouse
EUP-11	DC001
EUP-11A	DC002
EUP-11B	DC046
EUS-15A	DC026
EUS-15B	DC059
EUS-15C	DC060
Scale	DC026
EUS-15F	DC058, DC024, Demisters 5,6,8
EUS-15G	DC021, DC057, Demister 4
EUS-15I	DC032
EUP-17	DC035, DC045, Demister 3
EUS-22	DC005
EUS-4A	DC007, DC054
EUS-12	DC014
EUS-15D	DC074 (Baghouse)
EUS-15H	DC087 (Baghouse)
EUS-23	DC006
EUS-25	DC076, DC077, DC078 (Baghouses)
EUS-25A	DC079 (Baghouse)
EUS-R&D	DC-020A
EUS-26	DC075 (Baghouse)
One (1) coating mixing operation Sermatech Process	Scrubber #1 and Scrubber #2
One (1) polishing operation	
Four (4) lens polish mixing tank loading	DC030
Suspension room custom blend loading (EUS-20)	DC032
Suspension room powder packaging (EUS-18)	
Powder loading (EUS-19)	
Lens Polish mixing and filling operation	
Suspension Room mixing	

Emission Unit	Control Device ID
1415 Main Street	
Operation 1, Process 1 (O1P1)	DCC1-CV, DCC4-CV
One (1) Dry Ice Blasting Unit (O2P3-EUG3)	CG2

Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]

D.2.6 Baghouse, Dust Collector, and Scrubber Inspections

The Permittee shall perform quarterly inspections of the control device controlling particulate emissions listed in the table below from the emission unit listed in the table below to verify that it is being operated and maintained in accordance with the manufacturer's specifications.

Emission Unit	Control Device ID
1550 Polco Street	
Twenty-nine (29) specialty powders manufacturing operations	
EUS-1	DC048
EUS-2	DC015
EUS-7	DC028, DC013
EUP-3	DC063
EUS-3	DC064
EUS-5	DC012, DC013
EUS-8B	DC040
EUS-8A	DC041
EUS-10	DC043, DC044, DC045, Powder 5 Baghouse
EUP-11	DC001
EUP-11A	DC002
EUP-11B	DC046
EUS-15A	DC026
EUS-15B	DC059
EUS-15C	DC060
Scale	DC026
EUS-15F	DC058, DC024, Demisters 5,6,8
EUS-15G	DC021, DC057, Demister 4
EUS-15I	DC032
EUP-17	DC035, DC045, Demister 3
EUS-22	DC005
EUS-4A	DC007, DC054
EUS-12	DC014
EUS-15D	DC074 (Baghouse)
EUS-15H	DC087 (Baghouse)
EUS-23	DC006
EUS-25	DC076, DC077, DC078 (Baghouses)
EUS-25A	DC079 (Baghouse)
EUS-R&D	DC-020A
EUS-26	DC075 (Baghouse)
One (1) coating mixing operation Sermatech Process	Scrubber #1 and Scrubber #2

Emission Unit	Control Device ID
One (1) polishing operation	
Four (4) lens polish mixing tank loading	DC030
Suspension room custom blend loading (EUS-20)	DC032
Suspension room powder packaging (EUS-18)	
Powder loading (EUS-19)	
Lens Polish mixing and filling operation	
Suspension Room mixing	
1500 Polco Street	
One (1) grit blasting unit	
EU13C	C13C
1245 Main Street	
Twenty-two (22) grit blasting units	
EU09C	C09C
EU001G	C001G
EU002G	C002G
EU004G	C004G
EU005G	C005G
EU008G	C008G
EU010G	C010G
EU011G	C011G
EU013G	C013G
EU014G	C014G
EU016G	C016G
EU018G	C018G
EU019G	C019G
EU012G	DC012G
EU007G	C007G
EU01M	C01M
EU02M	C02M
EU01L	C01L
EU01GB	C01GB
EU02GB	C02GB
EU021G	DC021G
EU02L	DC02L
1415 Main Street	
Twenty-three (23) grit blasting units	
EU01C	C01C
EU04C	C04C
EU05C	C05C
EU06C	C06C
EU07C	C07C
EU08C	C08C
EU10C	C10C
EU12C	C12C
EU16C	C16C

Emission Unit	Control Device ID
EU03C	C03C
EU01M	C01M
O1P1-EUG6	O1P1-CG6
O1P1-EUG7	O1P1-CG7
O2P1-EUG1	O2P1-CG1/2
O2P1-EUG2	
O2P1-EUG3	O2P1-CG3/4
O2P1-EUG5	O2P1-CG5
O2P3-EUG1	O2P3-CG1
O2P3-EUG2	O2P3-CG2
EU11C	C11C
Two (2) wet grit blasting units	
EU14C	C14C
EU15C	C15C
Operation 1, Process 1 (O1P1)	DCC1-CV, DCC4-CV
Three (3) grinders	
Bader Grinder #2	C03C
Bader Grinder #3	C07B
Bader Grinder #4	C08B

Inspections required by this condition shall not be performed in consecutive months. All defective bags and dust collectors shall be replaced.

D.2.7 Broken or Failed Bag Detection

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced.

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emission unit.

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.2.8 Scrubber Failure Detection

In the event that a scrubber malfunction has been observed:

(a) For a scrubber controlling emissions from a process operated continuously, a failed unit and the associated process will be shut down immediately until the failed unit has have been repaired or replaced.

(b) For a scrubber controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line.

D.2.9 Wet Collector Monitoring

(a) Wet Collector – Pressure Drop:

The Permittee shall record the pressure drop across the wet collector, identified as Rotoclone, used in conjunction with the two (2) titanium powder processes, identified as Titanium Powder Process 1 and Titanium Powder Process 2, at least once per day when the two (2) titanium powder processes, identified as Titanium Powder Process 1 and Titanium Powder Process 2, is in operation. When for any one reading, the pressure drop across the wet collector, identified as Rotoclone, is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 5.0 and 12.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

(b) Wet Collector – Water Level:

Daily inspections shall be performed to verify that the water level in the water reservoir meet the manufacturer's recommended level. To monitor the performance of the water reservoir, the water level in the water reservoir shall be maintained weekly at a level where surface agitation indicates impact of the air flow. Water shall be kept free of solids and floating material that reduces the capture efficiency of the water reservoir. To monitor the performance of the wet collector, identified as Rotoclone, weekly inspections of the water reservoir shall be conducted to verify placement and configuration meet recommendations of the manufacturer. If a condition exists which should result in a response, the Permittee shall take a reasonable response.

(c) Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.2.10 Wet Collector Failure Detection

In the event that wet collector failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emission unit.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.2.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.6, the Permittee shall maintain records of the dates and results of the inspections required under Condition D.2.6.

(b) To document the compliance status with Condition D.2.9(a), the Permittee shall maintain daily records of the pressure drop across the wet collector, identified as Rotoclone, controlling the two (2) titanium powder processes, identified as Titanium Powder Process 1 and Titanium Powder Process 2. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(c) To document the compliance status with Condition D.2.9(b), the Permittee shall maintain a log of daily and weekly observations of the water level in the water reservoirs**.** The Permittee shall include in its daily record when a water reservoir level reading is not taken and the reason for the lack of a water reservoir level reading (e.g., the process did not operate that day).

(d) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

1245 Main Street

(m) Thirteen (13) metal surface coating stations:

(1) Six (6) detonation surface coating stations, all constructed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, used to apply coating to metal surfaces, each utilizing a D gun to apply coatings, located at 1245 Main Street, each utilizing an integral baghouse with HEPA filters, and identified as follows:

Emission Unit ID	Control Device ID	Stack/Vent ID
EU01A	C01A	01A
EU02A	C02A	02A
EU16A	C16A	16A
EU17A	C17A	17A
EU18A	C18A	18A
EU06A	C06A	06A

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the six (6) detonation surface coating stations are considered affected units.

(2) Two (2) High Velocity Oxy Fuel coating guns, each with a maximum capacity of 16.08 pounds of coating per hour, used to apply coating to metal surfaces, located at 1245 Main Street, each controlled by a baghouse with HEPA filters, and exhausting indoors:

Emission Unit ID	Construction Year	Control Device ID	Stack/Vent ID
EU19A*	Constructed prior to 2018	C19A**	19A
EU20A	2018	C20A	20A
* EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month. **The control device for EU19A was determined to be integral to the operation of this unit.			

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the two (2) High Velocity Oxy Fuel coating guns are considered affected units.

(3) Three (3) plasma surface coating stations, used to apply coating to metal surfaces, located at 1245 Main Street, each controlled by an integral baghouse with HEPA filters, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
EU05B	prior to 1982	8.04	C05D	05D
EU06B		8.04	C06D	06D

EU10B		8.04	C10D	10D

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the three (3) plasma surface coating stations are considered affected units.

(4) One (1) high velocity oxy fuel coating gun, identified as EU04A, constructed in 1991, with a maximum capacity of 16.08 pounds of coating per hour, used to apply coating to metal surfaces, located at 1245 Main Street, utilizing integral baffles as control, and exhausting to Stack/Vent 04A.

(5) One (1) plasma surface coating station, identified as EU03B, constructed prior to 1982, with a maximum capacity of 8.04 pounds of powder per hour, used to apply coating to metal surfaces, located at 1245 Main Street, utilizing integral baffles as control, and exhausting to Stack/Vent 03D.

(n) One (1) physical vapor deposition coating station, identified as EU01T, constructed prior to 2017, with a maximum capacity of 0.25 pounds of coating per hour, used to apply coating to metal surfaces, utilizing physical vapor deposition (PVD) coating application method, located at 1245 Main Street, utilizing no control, and exhausting to Stack/Vent 01T.

(o) One (1) LSR1 titanium tetrachloride coating station, identified as EU01R, constructed prior to 2014, with a maximum capacity of 0.27 pounds of coating per hour, used to apply coating to metal surfaces, utilizing chemical vapor deposition (CVD) coating application method, located at 1245 Main Street, utilizing a scrubber as control, and exhausting to Stack/Vent 01R.

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(z) Ten (10) metal surface coating stations:

(1) One (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, constructed prior to 2014, with a maximum capacity of 44.09 pounds of coating per hour, used to apply coating to metal surfaces, located at 1415 Main Street, utilizing a dust collector, identified as C01S, during cleanout, and exhausting to Stack/Vent 01S.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the one (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, is considered an affected unit.

(2) Eight (8) plasma surface coating stations used to apply coating to metal surfaces, located at 1415 Main Street, each controlled by an integral baghouse with HEPA filters, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
EU01B	1994	16.08	C01B	01B
EU02B		16.08	C02B	02B
EU05B		16.08	C05B	05B
EU06B		16.08	C06B	06B
EU07B*		16.08	C07B	07B
			Baffles**	
EU08B^		16.08	C08B	08B

EU09B		16.08	C09B	09B
EU11B	2009	16.08	C11B	11B

*Cubicle 07B, approved in 2018 for modification, will use the integral baghouse with HEPA filters when spraying HAP-containing materials, but will use baffles when using materials with combustible dust concerns.
**Baffles are not an integral control device.
^EU08B is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the eight (8) plasma surface coating stations are considered affected units.

(3) One (1) plasma surface coating station, identified as EU12B, constructed in 2013, with a maximum capacity of 16.08 pounds of powder per hour, used to apply coating to metal surfaces, located at 1415 Main Street, utilizing an integral baghouse with HEPA filters, identified as C12B, and exhausting to Stack/Vent 12B.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.3.1 PSD Minor Limits (PM) [326 IAC 2-2]

In order to render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following limits after control specified in the table below:

Emission Unit	PM Limit (lbs/hr)
1245 Main Street	
One (1) surface coating station	
EU20A	0.23
1415 Main Street	
One (1) surface coating station	
EU07B	3.00

Compliance with these limits, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.3.2 FESOP Limits (PM10 and PM2.5) [326 IAC 2-2] [326 IAC 2-8]

Pursuant to 326 IAC 2-8-4 and in order to render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-7 (Part 70 Permits) not applicable, the Permittee shall comply with the following limits after control specified in the table below:

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
1245 Main Street		
One (1) surface coating station		
EU20A	0.15	0.15
1415 Main Street		
One (1) surface coating station		

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
EU07B	3.00	3.00

Compliance with these limits, combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

D.3.3 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(h)]

(a) Pursuant to 326 IAC 6.5-1-2(h), the emission units listed in the table below shall be controlled by a dry particulate filter, waterwash, or an equivalent control device.

Emission Unit
1245 Main Street
Six (6) surface coating stations
EU01A
EU02A
EU16A
EU17A
EU18A
EU06A
1415 Main Street
One (1) surface coating station
EU01S

(b) Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations except Lake County), PM emissions from the following emission units shall not exceed 0.03 grain per dry standard cubic foot of exhaust air:

Emission Unit
1245 Main Street
Kerosene heater for EU19A
1415 Main Street
Kerosene heater for EU08B

D.3.4 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.3.5 Particulate Emissions Control

(a) The integral control devices for particulate control listed in the table below shall be in operation and control emissions from the following units:

Emission Unit	Control Device ID
1245 Main Street	
Six (6) surface coating stations	

Emission Unit	Control Device ID
EU19A	C19A
EU05B	C05D
EU06B	C06D
EU10B	C10D
EU04A	Baffles
EU03B	Baffles
1415 Main Street	
Eight (8) surface coating stations	
EU01B	C01B
EU02B	C02B
EU05B	C05B
EU06B	C06B
EU08B	C08B
EU09B	C09B
EU11B	C11B
EU12B	C12B

(b) In order to comply with Conditions D.3.1 and D.3.2, the control devices for particulate control listed in the table below shall be in operation and control emissions from the following units:

Emission Unit	Control Device ID
1245 Main Street	
One (1) surface coating station	
EU20A	C20A
1415 Main Street	
One (1) surface coating station	
EU07B	C07B and Baffles

(c) In order to comply with Condition D.3.3(a), the control devices for particulate control listed in the table below shall be in operation and control emissions from the following units:

Emission Unit
1245 Main Street
Six (6) surface coating stations
EU01A
EU02A
EU16A
EU17A
EU18A
EU06A
1415 Main Street
One (1) surface coating station
EU01S

Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]

D.3.6 Monitoring

(a) Quarterly inspections:

The Permittee shall perform quarterly inspections of the control device controlling particulate emissions listed in the table below from the emission unit listed in the table below to verify that it is being operated and maintained in accordance with the manufacturer's specifications.

Emission Unit	Control Device ID	Stack/Vent ID
1245 Main Street		
Eleven (11) surface coating stations		
EU01A	C01A	01A
EU02A	C02A	02A
EU16A	C16A	16A
EU17A	C17A	17A
EU18A	C18A	18A
EU06A	C06A	06A
EU19A	C19A	19A
EU20A	C20A	20A
EU05B	C05D	05D
EU06B	C06D	06D
EU10B	C10D	10D
1415 Main Street		
Ten (10) surface coating stations		
EU01S	C01S	01S
EU01B	C01B	01B
EU02B	C02B	02B
EU05B	C05B	05B
EU06B	C06B	06B
EU07B	C07B	07B
EU08B	C08B	08B
EU09B	C09B	09B
EU11B	C11B	11B
EU12B	C12B	12B

Inspections required by this condition shall not be performed in consecutive months. All defective bags and dust collectors shall be replaced.

(b) Weekly inspections:

To monitor the performance of the baffles, identified in the table below, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer.

Emission Unit	Control Device ID	Stack/Vent ID
1245 Main Street		
Two (2) surface coating stations		
EU04A	Baffles	04A

Emission Unit	Control Device ID	Stack/Vent ID
EU03B	Baffles	03D
1415 Main Street		
One (1) surface coating station		
EU07B	Baffles	07B

If a condition exists which should result in a response, the Permittee shall take a reasonable response.

(c) Monthly inspections:
Monthly inspections shall be performed of the coating emissions from the stacks, identified in the table below, and the presence of overspray on the rooftops and the nearby ground.

Emission Unit	Stack/Vent ID
1245 Main Street	
Thirteen (13) surface coating stations	
EU01A	01A
EU02A	02A
EU16A	16A
EU17A	17A
EU18A	18A
EU06A	06A
EU19A	19A
EU20A	20A
EU05B	05D
EU06B	06D
EU10B	10D
EU04A	EU04A
EU03B	03D
1415 Main Street	
Ten (10) surface coating stations	
EU01S	01S
EU01B	01B
EU02B	02B
EU05B	05B
EU06B	06B
EU07B	07B
EU08B	08B
EU09B	09B
EU11B	11B
EU12B	12B

If a condition exists which should result in a response, the Permittee shall take a reasonable response.

(d) Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take

response steps shall be considered a deviation from this permit.

D.3.7 Broken or Failed Bag Detection

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced.

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emission unit.

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.3.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.6(a), the Permittee shall maintain records of the dates and results of the inspections required under Condition D.3.6(a).

(b) To document the compliance status with Condition D.3.6(b), the Permittee shall maintain a log of weekly baffle inspections.

(c) To document the compliance status with Condition D.3.6(c), the Permittee shall maintain a log of monthly stack inspections.

(d) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

1550 Polco Street

(g) Eleven (11) direct heating natural gas-fired combustion units:

(1) Nine (9) natural gas-fired combustion units, constructed prior to 2014, located at 1550 Polco Street, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Rated Maximum Capacity (MMBtu/hr)	Stack / Vent ID
EU001	Powder 4 Furnaces	3	001
EU002		3	002
EU003		3	003
EU004		3	004
EU005		3	005
EU006		3	006
EU007	Powder 5 Furnace	3	007
EU008	Powder 4 Furnaces	3	008
EU009		3	009

(2) Two (2) natural-gas fired combustion units, constructed prior to 2014, located at 1550 Polco Street, utilizing dust collectors as control, and consisting of the following:

Emission Unit ID	Unit Description	Rated Maximum Capacity (MMBtu/hr)	Control Device	Stack / Vent ID
EUP-11	Powder 5 Spray Dryer 1	0.3	DC001	P-13B
EUP-11A	Powder 5 Spray Dryer 12	0.3	DC002	P-13B

(h) Four (4) natural gas-fired boilers, located at 1550 Polco Street, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	Rated Maximum Capacity (MMBtu/hr)	Stack / Vent ID
B-001	Lochinvar Boiler	1996	1.26	004
B-002	Multi-Pulse Hot Water Boiler	2018 This unit replaces the existing B-002.	0.15	003
B-003	Ajax Boilers	1999	0.45	003
B-004			0.45	004

1500 Polco Street

(k) Two (2) natural gas-fired boilers, located at the 1500 Polco Street Powerhouse, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	Rated Maximum Capacity (MMBtu/hr)	Stack / Vent ID
EU002	Cleaver Brooks Boilers	1990	8.369	002
EU003			8.369	003

1245 Main Street

(p) Three (3) direct heating natural gas-fired combustion units, constructed prior to 2014, located at 1245 Main Street, utilizing no control, and exhausting indoors.

Number of Units	Unit Description	Rated Maximum Capacity (MMBtu/hr)
Two (2)	Heaters for the Kolene tank	0.150 each
One (1)	Kiln for LSR1	0.15

1415 Main Street

(aa) Nineteen (19) direct heating natural gas-fired combustion units, constructed prior to 2018, located as 1415 Main Street, utilizing no control, and exhausting outdoors:

Emission Unit ID	Unit Description	Rated Maximum Capacity (MMBtu/hr)
RTU-A2	Carrier roof top units	0.360
RTU-A3		0.360
RTU-F		0.115
RTU-C1		0.250
RTU-E1		0.525
RTU-B2		0.525
RTU-A5		0.525
RTU-A6		0.525
ACPR4-1		0.133
ACPR4-2		0.115
RTU-00	Trane roof top units	0.587
ACPR1-1		0.117
ACPR1-2		0.117
RTU-B1	York roof top units	0.3
RTU-A-1		0.3
RTU-A7		0.699
RTU-E1	Aaon roof top units	0.18
RTU-D2		0.54
RTU-C1		0.27

All Locations

(n) Various downdraft tables throughout the facility used for small-scale production and maintenance, permitted in 2019, with a maximum production rate of 2,000 pounds per hour, using filter cartridges as control, and exhausting indoors.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.4.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2]

(a) Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations except Lake County), PM emissions from the following emission units shall not exceed 0.03 grain per dry standard cubic foot of exhaust air:

Emission Unit ID
1550 Polco Street
Eleven (11) direct heating natural gas-fired combustion units
EU001
EU002
EU003
EU005
EU006
EU007
EU008
EU009
EUP-11
EUP-11A
1245 Main Street
Three (3) direct heating natural gas-fired combustion units
Two (2) Heaters for the Kolene tank
One (1) Kiln for LSR1
1415 Main Street
Nineteen (19) direct heating natural gas-fired combustion units
RTU-A2
RTU-A3
RTU-F
RTU-C1
RTU-E1
RTU-B2
RTU-A5
RTU-A6
ACPR4-1
ACPR4-2
RTU-00
ACPR1-1
ACPR1-2
RTU-B1

Emission Unit ID
RTU-A-1
RTU-A7
RTU-E1
RTU-D2
RTU-C1
All Locations
Downdraft Tables

(b) Pursuant to 326 IAC 6.5-1-2(b)(3), particulate emissions from the following emission units shall not exceed 0.01 grains per dry standard cubic foot (dscf) of natural gas burned:

Emission Unit ID
1550 Polco Street
Four (4) natural gas-fired boilers
B-001
B-002
B-003
B-004
1500 Polco Street
Three (3) natural gas-fired boilers
EU002
EU003

D.4.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

1415 Main Street

(ab) Three (3) degreasers located at 1415 Main Street:

(1) Three (3) conveyorized vapor degreasers, utilizing no control, and exhausting indoors:

Number of Units	Emission Unit ID	Construction Year	Maximum Capacity (gallons per year)	Solvent
Two (2)	Operation 2 Degreasers	Constructed prior to 2014	145	Novec 72DE
One (1)	Operation 1 Degreaser	2016, modified in 2017	500	

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.5.1 Conveyorized Degreaser Control Equipment and Operating Requirements [326 IAC 8-3-4]

Pursuant to 326 IAC 8-3-4 (Conveyorized Degreaser Control Equipment and Operating Requirements), the Permittee shall:

(a) Ensure the following control equipment and operating requirements have been met:

(1) Minimize carryout emissions by:

(A) Racking parts for best drainage;

(B) Maintaining the vertical conveyor speed at less than 3.3 meters per minute (eleven (11) feet per minute);

(2) Store waste solvent only in closed containers.

(3) Prohibit the disposal or transfer of waste solvent in a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(4) Repair solvent leaks immediately, or shut down the degreaser if leaks cannot be repaired immediately.

(5) Prohibit the use of workplace fans near the degreaser opening.

(6) Prohibit visually detectable water in the solvent from exiting the water separator.

(7) Equip the degreaser with a permanent, conspicuous label that lists the operating requirements in Conditions D.5.1(a)(1 through 6).

(b) The Permittee shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser's entrances and exits with downtime covers that are closed when the degreaser is not operating.

(2) Equip the degreaser with the following switches:

(A) A condenser flow switch and thermostat which shuts off sump heat if condenser coolant stops circulating or becomes too warm.

(B) A spray safety switch which shuts off spray pump if the vapor level drops more than ten (10) centimeters (four (4) inches).

(C) A vapor level control thermostat that shuts off sump heat when vapor level rises more than ten (10) centimeters (four (4) inches).

(3) Equip the degreaser with entrances and exits which silhouette workloads in such a manner that the average clearance between the articles and the degreaser opening is either less than ten (10) centimeters (four (4) inches) or less than ten percent (10%) of the width of the opening.

(4) Equip the degreaser with a drying tunnel, rotating or tumbling basket, or other equipment that prevents cleaned articles from carrying out solvent liquid or vapor.

(5) Equip the degreaser with one (1) of the following control devices:

(A) A refrigerated chiller.

(B) A carbon adsorption system with ventilation that, with the downtime covers open, achieves a ventilation rate of greater than or equal to fifteen (15) cubic meters per minute per square meter (fifty (50) cubic feet per minute per square foot) of air-to-solvent interface area, and an average of less than twenty-five (25) parts per million of solvent is exhausted over one (1) complete adsorption cycle.

(C) An alternative system of demonstrated equivalent or better control as those outlined in clause (A) or (B) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(6) Prohibit the exhaust ventilation rate from exceeding twenty (20) cubic meters per minute per square meter (sixty-five (65) cubic feet per minute per square foot) of degreaser opening unless a greater ventilation rate is necessary to meet Occupational Safety and Health Administration requirements.

(7) Cover entrances and exits at all times except when processing workloads through the degreaser.

(8) Ensure that the label required under Condition D.5.1(a)(7) includes the additional operating requirements listed in Conditions D.5.1(b)(6 and 7).

D.5.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

1415 Main Street

(ab) Three (3) degreasers located at 1415 Main Street:

(2) Three (3) open top vapor degreasers, utilizing no control, and exhausting indoors:

Emission Unit ID	Construction Year	Maximum Capacity (gallons per year)	Solvent
LPPS Vapor Degreaser	2013, modified in 2018 and 2023 to change solvent	660	TMC-377
Tribomet Line Vapor Degreaser 1*	2017	660	PCE**
Tribomet Line Vapor Degreaser 2*	2024	260	PCE**
*Under NESHAP for Halogenated Solvent Cleaning [40 CFR 63, Subpart T], the one (1) Tribomet Line Vapor Degreaser is considered an affected unit. **PCE = Perchloroethylene			

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.6.1 Open To Vapor Degreaser Operation [326 IAC 8-3-3]

Pursuant to 326 IAC 8-3-3 (Open Top Vapor Degreasing Operation), the Permittee shall:

(a) Ensure the following control equipment and operating requirements are met:

(1) Equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone.

(2) Keep the cover closed at all times except when processing workloads through the degreaser.

(3) Minimize solvent carryout by:

(A) racking parts to allow complete drainage;

(B) moving parts in and out of the degreaser at less than three and three-tenths (3.3) meters per minute (eleven (11) feet per minute);

(C) degreasing the workload in the vapor zone at least thirty (30) seconds or until condensation ceases;

(D) tipping out any pools of solvent on the cleaned parts before removal;

(E) allowing parts to dry within the degreaser for at least fifteen (15) seconds or until visually dry.

(4) Prohibit the entrance into the degreaser of porous or absorbent materials, such as cloth, leather, wood or rope.

(5) Prohibit the occupation of more than one-half (1/2) of the degreaser's open top area with the workload.

(6) Prohibit the loading of the degreaser in a manner that causes the vapor level to drop more than fifty percent (50%) of the vapor depth when the workload is removed.

(7) Prohibit solvent spraying above the vapor level.

(8) Repair solvent leaks immediately, or shut down the degreaser if leaks cannot be repaired immediately.

(9) Store waste solvent only in closed containers.

(10) Prohibit the disposal or transfer of waste solvent in a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(11) Prohibit the use of workplace fans near the degreaser opening.

(12) Prohibit visually detectable water in the solvent exiting the water separator.

(13) Provide the degreaser with a permanent, conspicuous label that lists the operating requirements in Conditions D.6.1(a)(2 through 12).

(b) Ensure that the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with the following switches:

(A) A condenser flow switch and thermostat that shuts off sump heat if condenser coolant stops circulating or becomes too warm.

(B) A spray safety switch that shuts off spray pump if the vapor level drops more than ten (10) centimeters (four (4) inches).

(2) Equip the degreaser with one (1) of the following control devices:

(A) A freeboard ratio of seventy-five hundredths (0.75) or greater and a powdered cover if the degreaser opening is greater than one (1) square meter (ten and eight-tenths (10.8) square feet).

(B) A refrigerated chiller.

(C) An enclosed design in which the cover opens only when the article is actually entering or exiting the degreaser.

(D) A carbon adsorption system with ventilation that, with the cover open, achieves a ventilation rate of greater than or equal to fifteen (15) cubic meters per minute (fifty (50) cubic feet per minute per square foot) of air-to-vapor interface area and an average of less than twenty-five (25) parts per million of solvent is exhausted over one (1) complete adsorption cycle.

(E) An alternative system of demonstrated equivalent or better control as those outlined in Conditions D.6.1(b)(2)(A through D) that is approved by the department. An alternative system shall be submitted to the U.S.EPA as a SIP revision.

(3) Prohibit the loading of the degreaser to the point where the vapor level would drop more than ten (10) centimeters (four (4) inches) when the workload is removed.

(4) Prohibit the exhaust ventilation rate from exceeding twenty (20) cubic meters per minute per square meter (sixty-five (65) cubic feet per minute per square foot) of degreaser open are unless a greater ventilation rate is necessary to meet Occupational Safety Health Administration requirements.

(5) Ensure that the label required under Condition D.6.1(a)(13) includes the additional operating requirements listed in Conditions D.6.1(b)(3 and 4).

D.6.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: INSIGNIFICANT ACTIVITIES:

1245 Main Street

(j) One (1) cold cleaner degreaser, constructed prior to 2014, located at 1245 Main Street, utilizing no control, and exhausting indoors:

Emission Unit ID	Maximum Capacity (gallons per year)	Solvent
Maintenance Parts Washer	145	Safety Kleen Premium Gold Solvent

1415 Main Street

(m) Two (2) cold cleaner degreasers, constructed prior to 2014, located at 1415 Main Street, utilizing no control, and exhausting indoors:

Emission Unit ID	Maximum Capacity (gallons per year)	Solvent
Maintenance Parts Washer	145	Safety Kleen Premium Gold Solvent
Operation 1 and 2 Machine Shop Parts Washer	145	Safety Kleen solvent

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.7.1 Cold Cleaner Degreaser Control Equipment and Operating Requirements [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Degreaser Control Equipment and Operating Requirements), the Permittee shall:

(a) Ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(5) Provide a permanent, conspicuous label that lists the operating requirements in Conditions D.5.1 (a)(3, 4, 6, and 7).

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) Ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):
(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
(B) A water cover when solvent used is insoluble in, and heavier than, water.
(C) A refrigerated chiller.
(D) Carbon adsorption.
(E) An alternative system of demonstrated equivalent or better control as those outlined in Conditions D.7.1(b)(1)(A through D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:
(A) must be a solid, fluid stream; and
(B) shall be applied at a pressure that does not cause excessive splashing.

D.7.2 Material Requirements for Cold Cleaner Degreasers [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), the Permittee shall not operate a cold cleaning degreaser with a solvent that has a VOC composite partial vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

D.7.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)]

D.7.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.2, the Permittee shall maintain the following records for each purchase of solvent used in the cold cleaner degreasing operations. These records shall be retained on-site or accessible electronically for the most recent three (3) year period and shall be reasonably accessible for an additional two (2) year period.

(1) The name and address of the solvent supplier.

(2) The date of purchase (or invoice/bill dates of contract servicer indicating service date).

(3) The type of solvent purchased.

(4) The total volume of the solvent purchased.

(5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION E.1 **[Reserved]**

SECTION E.2 NESHAP

Emissions Unit Description:

1550 Polco Street

(a) One (1) powder manufacturing process, identified as CSP Department EU020, constructed in 2014 unless otherwise specified below, located at 1550 Polco Street, exhausting outdoors, and consisting of the following:

(1) One (1) raw material handling operation, identified as Raw Material Handling CSP, with a maximum capacity of 12.37 pounds of raw material per hour, consisting of a liquid pumping operation and solid scooping operation, and utilizing no control;

(2) One (1) raw material mixing operation, identified as Raw Material Mixing CSP, in which raw materials are mixed inside of an enclosed 55-gallon drum, utilizing no control, and with no exhaust;

(3) One (1) combustion spray pyrolysis (CSP) operation, approved in 2023 and again in 2024 to increase its maximum capacity, with a maximum capacity of twelve (12) batches of powder per twenty (20) hours, including the following systems:

(A) Spray drying and

(B) Powder to an oxide form converter and utilizing the following control devices:

(C) One (1) cyclonic collection system

(D) Natural Gas Combustion Units:

(i) One (1) natural gas combustion unit, identified as Burner 1 Associated with EU020, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(ii) One (1) natural gas combustion unit, identified as Burner 2 Associated with EU020, constructed in 2024, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iii) One (1) natural gas combustion unit, identified as Burner 3 Associated with EU020, constructed in 2024, with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iv) Three (3) natural gas combustion unit, identified as Burners 4, 5, and 6 Associated with EU020, constructed in 2024, each with a rated maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(E) One (1) CSP pollution control system, used to collect material not captured by the cyclonic collection system, which includes the following control devices:

(i) One (1) high temperature baghouse dust collector, identified as BAG 1 (CSP),

(ii) One (1) selective catalytic reduction system, identified as SCR1 (CSP);

(iii) One (1) high temperature baghouse dust collector, identified as BAG 2 (CSP), constructed in 2024, and

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024.

(4) One (1) powder handling operation to convey powder to a hopper and sagger filling after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing three (3) dust collector, identified as DC-033, DC-034 and DC-020A, as control.

This Powder Handling After CSP is approved in 2024 to add a control.

(5) Ten (10):

(i) One (1) electrically-heated kiln, identified as Kiln 1, permitted in 2022 to use a control, approved in 2023 to increase its maximum capacity, with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC-030, as control;

(ii) Two (2) electrically-heated kilns, identified as Kiln 2 and Kiln 3, constructed in 2022, approved in 2023 to increase its maximum capacity, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC-033, as control;

(iii) Four (4) electrically heated kilns, identified as Kiln 4, Kiln 5, Kiln 6, and Kiln 7, constructed in 2024, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, utilizing a dust collector, identified as DC033, as control.

(iv) Three (3) electrically heated rotary kilns, identified as Kiln 8, Kiln 9 and Kiln 10, constructed in 2024, each with a maximum capacity of six (6) batches of powder per twenty (20) hours, used to calcine powder, and utilizing a dust collector, identified as DC033, as control.

(6) One (1) powder handling operation after the kilns, identified as Powder Handling After Kiln, with a maximum capacity of 84.90 pounds of powder conveyed to a hopper per hour, which feeds the milling process, and utilizing a dust collector, identified as DC-030, as control;

(7) Nine (9) enclosed mills:

(i) One (1) enclosed ball mill, identified as Mill 1, permitted in 2022 to use a control, with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control;

(ii) Two (2) DM1 post kiln enclosed mills, identified as Mill 2 and Mill 3, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control;

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-033, as control.

(iv) Four (4) enclosed DM4 post-kiln mills, identified as Mill 6 to Mill 9, constructed in 2024, each with a maximum capacity of 30 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as DC-030, as control.

(8) One (1) powder handling operation after the mill, including six (6) screeners and 1 packaging operation, identified as Powder Handling After Mill, with a maximum capacity of 70.77 pounds of powder screened per hour and then conveyed to the blending hopper, and utilizing a dust collector, identified as DC-030, as control;

(9) Five (5) primary enclosed blenders:

(i) One (1) primary enclosed blender, identified as Blender 1, permitted in 2022 to use a control, used to homogenize the mixture, utilizing a dust collector, identifies as DC-30, as control, and with no exhaust;

(ii) One (1) primary enclosed blender, identified as Blender 2, constructed in 2023, used to homogenize the mixture, utilizing a dust collector, identifies as DC-30, as control, and with no exhaust;

(iii) Three (3) primary enclosed blender, identified as Blender 3, Blender 4, and Blender 5, constructed in 2024, used to homogenize the mixture, utilizing a dust collector, identified as DC-30, as control, with no exhaust.

(10) One (1) final powder handling process, identified as Final Powder Handling, with a maximum capacity of 70.77 pounds of powder screened and packaged (six screeners) per hour, and utilizing a dust collector, identified as DC-061, as control.

This Final Powder Handling is approved in 2024 to change control.

(11) One (1) powder and media electric drying oven, identified as CSP Drying Oven, approved in 2025 for construction, using no controls, and exhausting indoors. This unit does not produce any emissions.

(12) One (1) powder and media jet mill classifier used for sizing, identified as CSP Jet Mill Classifier, approved in 2025 for construction, utilizing a dust collector, identified as DC-080, as control, and exhausting indoors.

Under NESHAP for Chemical Manufacturing Area Sources [40 CFR 63, Subpart VVVVVV], the one (1) powder manufacturing process, identified as CSP Department EU020, is considered an affected unit.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-8-4(1)]

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 63, Subpart VVVVVV.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

E.2.2 National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources [40 CFR Part 63, Subpart VVVVVV] [326 IAC 20]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart VVVVVV (included as Attachment B to the operating permit), for the emission units listed above:

63.11494(a), (b) and (h)	What are the applicability requirements and compliance dates?
63.11495(a)(1) and (a)(3)	What are the management practices and other requirements?
63.11496(f)(1) and (f)(4)	What are the standards and compliance requirements for process vents?
63.11501(a), (b), (c)(1)(i)(vii)(viii), (c)(3)(ii), (d)(1)(3)(4)(8)	What are the notification, recordkeeping, and reporting requirements?
Tables to Subpart VVVVVV of Part 63	
Table 9	Applicability of General Provisions to Subpart VVVVVV

SECTION E.3 **NESHAP**

Emissions Unit Description:

1550 Polco Street

(b) Twenty-nine (29) specialty powders manufacturing operations, located at the 1550 Polco Street Specialty Powders area:

(1) Twenty-three (23) specialty powders manufacturing operations,

(i) modified in 2015 to reroute baghouses,
(ii) modified in 2016 to construct a new operation,
(iii) modified in 2018 to change the amount of dust collected by the dust collectors, and
(iv) approved in 2023 to add a powder processing equipment,

each controlled by an integral baghouse and HEPA filters, identified in the table below, and exhausting indoors:

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	166.67	DC048	Powder 1 powder processing, including a blender, sieve, vertical material conveyor, crusher, mill, dust booth, three (3) screeners, and one (1) classifier (DC073). DC048 controls the classifier and the rest of the units.
EUS-2	166.67	DC015	One (1) blender and weigh out station for Powder 2 Bay 2
EUS-7	83.335	DC028, DC013	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, and screening. DC013 controls the impact mill and conveyor in Bay 5.
EUP-3	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in electric furnace and placed into vacuum chamber to form a powder
EUS-3	429.3	DC064	Approved in 2018 for modification of the dust collectors and descriptive information. Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling.
---	312.5	---	Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
---	---	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	312.5	DC012, DC013	Powder 3 is milled and sized. DC013 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.

	EUS-8B	58.4	DC040	Powder 4 handling in mill and blender prior to furnacing.
	EUS-8A	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
	EUS-10	300	DC043, DC044, DC045, Powder 5 Baghouse	Processes oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five (5) screeners. DC043 controls one (1) blender, one (1) screener, four (4) filling machines, the filling station (bag breaking table), and two (2) delumpers. DC044 controls one (1) blender, one (1) screener, one (1) weigh station, one (1) delumper, and three (3) mixing tanks. DC045 controls one (1) blender, one (1) screener, three (3) mixing tanks, and one (1) hopper. The Powder 5 Baghouse controls the spray dryer hot exhaust.
	EUP-11*	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
	EUP-11A*	100	DC002 (Stack S001)	Thermal barrier coating (TBC) Spray Dryer 2
	EUP-11B**	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
	EUS-15A	341.66	DC026	Approved in 2018 for modification of the dust collectors and descriptive information. 2 Screeners and 2 Blenders in Powder 2 Processing for Lines 1 and 2. Line 1 and 2 screeners and blenders are controlled by DC026. DC026 is also connected to classifiers DC072 and DC071, which are associated with Lines 1 and 2, respectively.
	EUS-15B	341.66	DC059	Approved in 2018 for modification of the dust collectors and descriptive information. 4 Screeners and 2 Blenders in Powder 2 Processing for Lines 3 and

				4. DC059 is also connected to classifiers DC070, DC023, and DC069, which are associated with Lines 3, 4, and 5, respectively.
	---	---	DC056	DC056 controls packaging.
	EUS-15C	341.66	DC060	Approved in 2018 for modification of the descriptive information. 4 Screeners and 2 Blenders in Powder 2 Processing for Lines 5 and 6. DC060 is also connected to classifiers DC011 and DC068, which are both associated with Line 6.
	Scale	---	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
	EUS-15F	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
	EUS-15G	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
	EUS-15I (constructed in 2024)	56.94	DC032	1 blender and 1 weigh out station used for Powder 2.
	EUP-17 (approved in 2023 to change control)	8.33	DC035, DC045, New Dust collector	Viga 2/5 and Viga 45, for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC045, New Dust collector, while the exhaust from the viga is controlled by DC035.
	EUS-22	21.606	DC005	Powder 7 Operation: Electric furnace, five (5) mills, three (3) jaw crushers, one (1) blender, one (1) screener, one (1) de-egger, one (1) fill station, one (1) classifier, and one (1) work bench. DC005 controls all operations, including the classifier.
	EUS-4A	429.3	DC007, DC054	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls two classifiers, the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer.

EUS-12	100	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.
**This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC.

(2) One (1) specialty powders manufacturing operation, identified as EUS-15D, constructed in 2018, controlled by an integral baghouse, identified as DC074, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15D.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15D	341.66	DC074 (Baghouse)	Support for Viga 250 #3, used for Powder 2. DC079 controls dust from support operations in the Viga 250 #3.

(3) One (1) specialty powders manufacturing operation, constructed in 2018, utilizing no control, and enclosed with no exhaust.

Emission Unit ID	Maximum Throughput (lb/hr)	Description
EUS-15E	341.66	5 Screeners not controlled by a conventional dust collector. These screeners use internal components to separate/segregate manufactured powder into the desired particle size.

(4) One jet mill, identified as EUS-23, constructed in 2021, that is part of the Powder 7 specialty powders manufacturing operations, connected with one classifier, with a maximum throughput of 45 lb/hr, located at 1550 Polco Street, utilizing an integral dust collector, identified as DC006, as control and exhausting outside to stack S006.

(5) One (1) specialty powders manufacturing operation, identified as EUS-15H, constructed in 2024, controlled by a baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15H.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15H	341.66	DC075 (Baghouse)	Used for Powder 2.

(6) One (1) specialty powder manufacturing operation, identified as EUS-25, approved in 2025 for construction, controlled by a baghouse, identified as DC076, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G76. There are two (2) additional small baghouses for the spray dryers, identified as DC077 and

DC078.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-25.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25	52.48	DC076, DC077, and DC078 (Baghouses)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: four (4) 24" vibratory mills, four (4) screw feeders, one (1) electric spray dryer, one (1) natural gas-heated spray dryer, six (6) electric kilns, three (3) 24" classifiers, two (2) vacuum conveyors, one (1) mixer blender, two (2) wet stirred bead mills and two (2) plastic tanks for mixing.

(7) One (1) specialty powder R&D operation, identified as EUS-25A, approved in 2025 for construction, controlled by a baghouse, identified as DC079, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G79.

The HEPA filters are not considered as integral to the one (1) specialty powders R&D operation, identified as EUS-25A.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: two (2) electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table.

(8) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(9) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-26	5.25	DC075 (Baghouse)	Powder is weighed, mixed into a slurry, and spray-dried. The process involves: one (1) jet mill,

				one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the specialty powders manufacturing operation (except EUP-11B) are considered affected units.

(c) Titanium Power Processes:

(i) One (1) titanium powder process, identified as Titanium Powder Process 1, constructed in 2015, located at 1550 Polco Street, utilizing a wet collector, identified as Rotoclone, as control, with a maximum of 4.00 pounds of particulate collected by the wet collector per hour, and exhausting outdoors.

(ii) One (1) titanium powder process, identified as Titanium Powder Process 2, constructed in 2023, located at 1550 Polco Street, utilizing a wet collector, identified as Rotoclone, as control, with a maximum of 4.00 pounds of particulate collected by the wet collector per hour, and exhausting outdoors.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the two (2) titanium powder processes are considered affected units.

(d) One (1) coating mixing operation, identified as Sermatech Process, constructed prior to 2014, with the following maximum mixing capacities:

(1) 60.00 pounds per hour of water-based paint and
(2) 24.00 pounds per hour of solvent-based paint

located at the 1550 Polco Street Specialty Powders area, utilizing two (2) scrubbers, identified as Scrubber #1 and Scrubber #2, and exhausting indoors.

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the one (1) coating mixing operation is considered an affected unit.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-8-4(1)]

E.3.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 63, Subpart CCCCCCC.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North

100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

E.3.2 National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing [40 CFR Part 63, Subpart CCCCCCC] [326 IAC 20]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart CCCCCCC (included as Attachment C to the operating permit), for the emission units listed above:

63.11599(a) & (b)	Am I subject to this subpart?
63.11600	What are my compliance dates?
63.11601	What are the standards for new and existing paints and allied products manufacturing facilities?
63.11602	What are the performance test and compliance requirements for new and existing sources?
63.11603(a), (b), (c)	What are the notification, reporting, and recordkeeping requirements?
63.11605	What General Provisions apply to this subpart?
63.11606	Who implements and enforces this subpart?
63.11607	What definitions apply to this subpart?
Tables to Subpart CCCCCCC of Part 63	
Table 1	Applicability of General Provisions to Paints and Allied Products Manufacturing Area Sources

SECTION E.4 **NESHAP**

Emissions Unit Description:

1245 Main Street

(m) Eleven (11) metal surface coating stations:

(1) Six (6) detonation surface coating stations, all constructed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, used to apply coating to metal surfaces, each utilizing a D gun to apply coatings, located at 1245 Main Street, each utilizing an integral baghouse with HEPA filters, and identified as follows:

Emission Unit ID	Control Device ID	Stack/Vent ID
EU01A	C01A	01A
EU02A	C02A	02A
EU16A	C16A	16A
EU17A	C17A	17A
EU18A	C18A	18A
EU06A	C06A	06A

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the six (6) detonation surface coating stations are considered affected units.

(2) Two (2) High Velocity Oxy Fuel coating guns, each with a maximum capacity of 16.08 pounds of coating per hour, used to apply coating to metal surfaces, located at 1245 Main Street, each controlled by a baghouse with HEPA filters, and exhausting indoors:

Emission Unit ID	Construction Year	Control Device ID	Stack/Vent ID
EU19A*	Constructed prior to 2018	C19A**	19A
EU20A	2018	C20A	20A
* EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month. **The control device for EU19A was determined to be integral to the operation of this unit.			

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the two (2) High Velocity Oxy Fuel coating guns are considered affected units.

(3) Three (3) plasma surface coating stations, used to apply coating to metal surfaces, located at 1245 Main Street, each controlled by an integral baghouse with HEPA filters, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
EU05B	prior to 1982	8.04	C05D	05D
EU06B		8.04	C06D	06D
EU10B		8.04	C10D	10D

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the three (3) plasma surface coating stations are considered affected units.

1415 Main Street

(y) Three (3) grinders, constructed prior to 2014, located at 1415 Main Street, each with a maximum capacity of 100 pounds per hour, each utilizing dust collectors with HEPA filters as control, exhausting indoors, and consisting of the following:

Emission Unit ID	Control Device
Bader Grinder #2	C03C
Bader Grinder #3	C07B
Bader Grinder #4	C08B

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the three (3) grinders are considered affected units.

(z) Ten (10) metal surface coating stations:

(1) One (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, constructed prior to 2014, with a maximum capacity of 44.09 pounds of coating per hour, used to apply coating to metal surfaces, located at 1415 Main Street, utilizing a dust collector, identified as C01S, during cleanout, and exhausting to Stack/Vent 01S.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the one (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, is considered an affected unit.

(2) Eight (8) plasma surface coating stations used to apply coating to metal surfaces, located at 1415 Main Street, each controlled by an integral baghouse with HEPA filters, and consisting of the following:

Emission Unit ID	Construction Year	Maximum Capacity (lbs of powder coating per hour)	Control Device	Stack / Vent ID
EU01B	1994	16.08	C01B	01B
EU02B		16.08	C02B	02B
EU05B		16.08	C05B	05B
EU06B		16.08	C06B	06B
EU07B*		16.08	C07B	07B
			Baffles**	
EU08B^		16.08	C08B	08B
EU09B		16.08	C09B	09B
EU11B	2009	16.08	C11B	11B

*Cubicle 07B, approved in 2018 for modification, will use the integral baghouse with HEPA filters when spraying HAP-containing materials, but will use baffles when using materials with combustible dust concerns.
**Baffles are not an integral control device.
^EU08B is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the eight (8) plasma surface coating stations are considered affected units.

INSIGNIFICANT ACTIVITIES

1415 Main Street

(j) Three (3) Tribomet lines consisting of the following:

(1) Two (2) Tribomet lines, identified as Lines #1 and #2, constructed prior to 2014 and 2017, both including a series of 16 dip tanks, located at 1415 Main Street, utilizing a composite mesh pad system with mist eliminator as control, and exhausting indoors.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the two (2) Tribomet lines, identified as Lines #1 and #2, are considered affected units.

(2) One Tribomet nickel sulfate plating line, identified as Line #3, constructed in 2024, including a series of 10 dip tanks, located at 1415 Main Street, utilizing a scrubber as control, and exhausting indoors.

Under NESHAP for Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW], the Tribomet nickel sulfate plating line, identified as Lines #3, is considered an affected unit.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-8-4(1)]

E.4.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 63, Subpart WWWWWW.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

E.4.2 National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations [40 CFR Part 63, Subpart WWWWWW] [326 IAC 20]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart WWWWWW (included as Attachment D to the operating permit), for the emission units listed above:

63.11504(a)	Am I subject to this subpart?

63.11505(a), (b) & (e)	What parts of my plant does this subpart cover?
63.11506(a)	What are my compliance dates?
63.11507(a)(2), (f)(1) & (g)	What are my standards and management practices?
63.11508(a), (b), (c)(2),(8),(9), (d)(1)(2)(4)(8)	What are my compliance requirements?
63.11509	What are my notification, reporting, and recordkeeping requirements?
63.11510	What General Provisions apply to this subpart?
63.11511	What definitions apply to this subpart?
63.11512	Who implements and enforces this subpart?
Tables to Subpart WWWWWW of Part 63	
Table 1	Applicability of General Provisions to Plating and Polishing Area Sources

SECTION E.5 NESHAP

Emissions Unit Description:

1500 Polco Street

(f) Two (2) emergency generators, utilizing no control, and exhausting indoors:

Location	Emission Unit ID	Maximum Capacity (HP)	Fuel Type	Date Installed	Date Manufactured	Engine Type
1500 Polco Street	Generac	207	Diesel	1999	1999	6 cylinder
1500 Polco Street - Power House	ONAN/ Cummins	168	Diesel	1975	1975	6 cylinder

Under NESHAP for Stationary reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ], the two (2) emergency generators are considered affected units.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-8-4(1)]

E.5.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission units listed above, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

E.5.2 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines NESHAP [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment E to the operating permit), which are incorporated by reference as 326 IAC 20-82, for the emission units listed above:

63.6580	What is the purpose of subpart ZZZZ?
63.6585(a), (c) & (d)	Am I subject to this subpart?
63.6590(a)(1)(iii)	What parts of my plant does this subpart cover?
63.6595(a)(1), (c)	When do I have to comply with this subpart?

63.6605	What are my general requirements for complying with this subpart?
63.6625(e),(f),(h),(i)	What are my monitoring, installation, collection, operation, and maintenance requirements?
63.6640	How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?
63.6645(a)(2)	What notifications must I submit and when?
63.6655(a)(2),(5),(d),(e)(2)(3),(f)(2)	What records must I keep?
63.6660	In what form and how long must I keep my records?
63.6665	What parts of the General Provisions apply to me?
63.6670	Who implements and enforces this subpart?
63.6675	What definitions apply to this subpart?
Tables to Subpart ZZZZ of Part 63	
Table 2d	Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions
Table 6	Continuous Compliance With Emission Limitations, and Other Requirements
Table 7	Requirements for Reports
Table 8	Applicability of General Provisions to Subpart ZZZZ

SECTION E.6 NESHAP

Emissions Unit Description:

1415 Main Street

(ab) Two (2) degreasers located at 1415 Main Street:

(2) Two (2) open top vapor degreasers, utilizing no control, and exhausting indoors:

Emission Unit ID	Construction Year	Maximum Capacity (gallons per year)	Solvent
Tribomet Line Vapor Degreaser 1*	2017	660	PCE**
Tribomet Line Vapor Degreaser 2*	2024	260	PCE**
*Under NESHAP for Halogenated Solvent Cleaning [40 CFR 63, Subpart T], the one (1) Tribomet Line Vapor Degreaser is considered an affected unit. **PCE = Perchloroethylene			

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-8-4(1)]

E.6.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit listed above, except as otherwise specified in 40 CFR Part 63, Subpart T.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251

E.6.2 National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning [40 CFR Part 63, Subpart T] [326 IAC 20-6]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart T (included as Attachment F to the operating permit), which are incorporated by reference as 326 IAC 20-6, for the emission unit listed above:

63.460	Applicability and designation of source.
63.461	Definitions.

63.463(a), (b), (d), (e)	Batch vapor and in-line cleaning machine standards.
63.466(a)(1) and (b)(1)	Monitoring procedures.
63.467(a) and (b)	Recordkeeping requirements.
63.468(b), (d), (f) and (h)	Reporting requirements.
63.470	Implementation and enforcement.
63.471	Facility-wide standards.
Appendices to Subpart T of Part 63	
Appendix A	Test of Solvent Cleaning Procedures
Appendix B	General Provisions Applicability to Subpart T

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name:	Linde Advanced Material Technologies, Inc
Source Address:	1245 and 1415 Main Street, Indianapolis, Indiana 46224, and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222
FESOP Permit No.:	F097-46563-00060

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify) _____

☐ Report (specify) _____

☐ Notification (specify) _____

☐ Affidavit (specify) _____

☐ Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.	
Signature:	
Printed Name:	
Title/Position:	
Email Address:	Phone:
Date:	

DRAFT

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FAX NUMBER: (317) 233-6865
EMAIL: AirCompl@idem.in.gov

Source Name:	Linde Advanced Material Technologies, Inc
Source Address:	1245 and 1415 Main Street, Indianapolis, Indiana 46224, and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222
Permit No.:	F097-46563-00060

For any malfunction lasting one (1) hour or longer, the Permittee must submit this form to the Office of Air Quality (OAQ), within four (4) daytime business hours of malfunction start.

If any of the following are not applicable, mark N/A. This form consists of two (2) pages.

This malfunction resulted in a violation of the following Indiana Administrative Code, permit condition, and/or permit limit and meets the definition of "malfunction" as listed on reverse side (e.g., 326 IAC 5-1, Permit Condition D.1.1, 40 CFR 60.62, etc.):

Describe affected facility/equipment/operation (e.g., Coating Line #2, Boiler D, Diesel engine, No. 3 smelter, etc.):
Control equipment (e.g., Baghouse B4, Thermal oxidizer for Paint Line #1, etc.):
Description of the malfunction and cause:

When the malfunction started:	Date (MM/DD/YYYY):
	Time (HH:MM):
When the malfunction was corrected or is expected to be corrected:	Date (MM/DD/YYYY):
	Time (HH:MM):

Type of pollutant(s) emitted (e.g., PM, PM10, PM2.5, VOC, etc.):
Estimated amount of pollutant(s) emitted during malfunction (e.g., VOC at 35 lbs/hr, 5 tons of PM, etc.):
Describe the corrective actions and interim control measures taken to minimize emissions (e.g., shut coating line down, isolated failing baghouse compartment, idled furnace operations until repairs completed, etc.):

Form completed by: _____

Title/position: _____

Signature:_____

Date:_____

Phone: _____

Email: _____

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1, 326 IAC 2-6.1, 326 IAC 2-7, or 326 IAC 2-8.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Linde Advanced Material Technologies, Inc
Source Address: 1245 and 1415 Main Street, Indianapolis, Indiana 46224, and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222
FESOP Permit No.: F097-46563-00060

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section C - Malfunctions Report satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

Attachment B

Federally Enforceable State Operating Permit (FESOP) No: 097-46563-00060

[Downloaded from the eCFR on April 6, 2026]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart VVVVVV—National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources

Source: 74 FR 56041, Oct. 29, 2009, unless otherwise noted.

Applicability and Compliance Dates

§ 63.11494 What are the applicability requirements and compliance dates?

(a) Except as specified in paragraph (c) of this section, you are subject to this subpart if you own or operate a chemical manufacturing process unit (CMPU) that meets the conditions specified in paragraphs (a)(1) and (2) of this section.

(1) The CMPU is located at an area source of hazardous air pollutant (HAP) emissions.

(2) HAP listed in table 1 to this subpart (Table 1 HAP) are present in the CMPU, as specified in paragraph (a)(2)(i), (ii), (iii), or (iv) of this section.

(i) The CMPU uses as feedstock, any material that contains quinoline, manganese, and/or trivalent chromium at an individual concentration greater than 1.0 percent by weight, or any other Table 1 HAP at an individual concentration greater than 0.1 percent by weight. To determine the Table 1 HAP content of feedstocks, you may rely on formulation data provided by the manufacturer or supplier, such as the Safety Data Sheet (SDS) for the material. If the concentration in an SDS is presented as a range, use the upper bound of the range.

(ii) Quinoline is generated as byproduct and is present in the CMPU in any liquid stream (process or waste) at a concentration greater than 1.0 percent by weight.

(iii) Hydrazine and/or Table 1 organic HAP other than quinoline are generated as byproduct and are present in the CMPU in any liquid stream (process or waste), continuous process vent, or batch process vent at an individual concentration greater than 0.1 percent by weight.

(iv) Hydrazine or any Table 1 HAP is produced as a product of the CMPU.

(b) A CMPU includes all process vessels, equipment, and activities necessary to operate a chemical manufacturing process that produces a material or a family of materials described by North American Industry Classification System (NAICS) code 325. A CMPU consists of one or more unit operations and any associated recovery devices. A CMPU also includes each storage tank, transfer operation, surge control vessel, and bottoms receiver associated with the production of such NAICS code 325 materials.

(c) This subpart does not apply to the operations specified in paragraphs (c)(1) through (6) of this section.

(1) Affected sources under the following chemical manufacturing area source categories listed pursuant to Clean Air Act (CAA) section 112(c)(3) and 112(k)(3)(B)(ii) that are subject to area source standards under this part:

(i) Manufacture of Paint and Allied Products, subject to subpart CCCCCCC of this part.

(ii) Mercury Emissions from Mercury Cell Chlor-Alkali Plants, subject to subpart IIIII of this part.

(iii) Polyvinyl Chloride and Copolymers Production, subject to subpart DDDDDD of this part.

(iv) Acrylic and Modacrylic Fibers Production, subject to subpart LLLLLL of this part.

(v) Carbon Black Production, subject to subpart MMMMMM of this part.

(vi) Chemical Manufacturing Area Sources: Chromium Compounds, subject to subpart NNNNNN of this part.

(vii) Lead oxide production at Lead Acid Battery Manufacturing Facilities, subject to subpart PPPPPP of this part.

(2) Production of the following chemical manufacturing materials described in NAICS code 325:

(i) Manufacture of radioactive elements or isotopes, radium chloride, radium luminous compounds, strontium, uranium.

(ii) Manufacture of photographic film, paper, and plate where the material is coated with or contains chemicals. This subpart does apply to the manufacture of photographic chemicals.

(iii) Fabricating operations (such as spinning or compressing a solid polymer into its end use); compounding operations (in which blending, melting, and resolidification of a solid polymer product occurs for the purpose of incorporating additives, colorants, or stabilizers); and extrusion and drawing operations (converting an already produced solid polymer into a different shape by melting or mixing the polymer and then forcing it or pulling it through an orifice to create an extruded product). An operation is subject if it involves processing with Table 1 HAP solvent or if an intended purpose of the operation is to remove residual Table 1 HAP monomer.

(iv) Manufacture of chemicals classified using the 2007 version of NAICS code 325222, 325314, 325413, or 325998.

(3) Research and development facilities, as defined in CAA section 112(c)(7).

(4) Quality assurance/quality control laboratories.

(5) Ancillary activities, as defined in § 63.11502(b).

(6) Metal HAP in structures or existing as articles as defined in 40 CFR 372.3.

(d) This subpart applies to each new or existing affected source. The affected source is the facility-wide collection of CMPUs and each heat exchange system and wastewater system associated with a CMPU that meets the criteria specified in paragraphs (a) and (b) of this section. A CMPU using only Table 1 organic HAP is required to control only total CAA section 112(b) organic HAP. A CMPU using only Table 1 metal HAP is required to control only total CAA section 112(b) metal HAP in accordance with § 63.11495 and, if applicable, § 63.11496(f).

(1) An affected source is an existing source if you commenced construction or reconstruction of the affected source before October 6, 2008.

(2) An affected source is a new source if you commenced construction or reconstruction of the affected source on or after October 6, 2008.

(e) Any area source that installed a federally-enforceable control device on an affected CMPU is required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 if the control device on the affected CMPU is necessary to maintain the source's emissions at area source levels. For new and existing sources subject to this rule on December 21, 2012 and subject to title V as a result of this rule, a complete title V permit application must be submitted no later than December 21, 2013. New and existing sources that become subject to this rule after December 21, 2012 must submit a complete title V permit application no later than 12 months after becoming subject to this rule if the source is subject to title V as a result of this rule. Otherwise, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

(f) If you own or operate an existing affected source, you must achieve compliance with the applicable provisions in this subpart no later than March 21, 2013, except as specified otherwise in paragraph (i) of this section.

(g) If you start up a new affected source on or before October 29, 2009, you must achieve compliance with the applicable provisions of this subpart no later than October 29, 2009, except as specified otherwise in paragraph (i) of this section.

(h) If you start up a new affected source after October 29, 2009, you must achieve compliance with the provisions in this subpart upon startup of your affected source, except as specified otherwise in paragraph (i) of this section.

(i) All affected sources that commenced construction or reconstruction on or before January 22, 2025, must be in compliance with the requirements in §§ 63.11495(a)(6), (b)(4), and (e), 63.11496(e)(6)(iii), (f)(3)(iv), (f)(4), (g)(1)(iii), (g)(2)(ii), and (g)(4)(iii), and 63.11499(d), item 5 to table 5 to this subpart, and item 1.c to table 8 to this subpart upon initial startup, or on April 1, 2029, whichever is later. All affected sources that commenced construction or reconstruction after January 22, 2025, must be in compliance with the requirements in §§ 63.11495(a)(6), (b)(4), and (e), 63.11496(e)(6)(iii), (f)(3)(iv), (f)(4), (g)(1)(iii), (g)(2)(ii), and (g)(4)(iii), and 63.11499(d), item 5 to table 5 to this subpart, and item 1.c to table 8 to this subpart upon initial startup, or on April 1, 2026, whichever is later.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75756, Dec. 21, 2012; 91 FR 16522, Apr. 1, 2026]

Standards and Compliance Requirements

§ 63.11495 What are the management practices and other requirements?

(a) ***Management practices.*** If you have a CMPU subject to this subpart, you must comply with paragraphs (a)(1) through (6) of this section.

(1) Each process vessel must be equipped with a cover or lid that must be closed at all times when it is in organic HAP service or metal HAP service, except for manual operations that require access, such as material addition and removal, inspection, sampling and cleaning. This requirement does not apply to process vessels containing only metal HAP that are in a liquid solution or other form that will not result in particulate emissions of metal HAP (*e.g.,* metal HAP that is in ingot, paste, slurry, or moist pellet form or other form).

(2) You must use any of the methods listed in paragraphs (a)(2)(i) through (iv) of this section to control total organic HAP emissions from transfer of liquids containing HAP listed in table 1 to this subpart to tank trucks or railcars. You are not required to comply with this paragraph (a)(2) if you have notified the Administrator in your initial notification that a material is reactive or resinous, and you will not be able to comply with any of the methods in paragraphs (a)(2)(i) through (iv) of this section for the transfer of such material.

(i) Use submerged loading or bottom loading.

(ii) Route emissions to a fuel gas system or process in accordance with § 63.982(d).

(iii) Vapor balance back to the storage tank or another storage tank connected by a common header.

(iv) Vent through a closed-vent system to a control device.

(3) Except as specified in paragraph (a)(6) of this section, you must conduct inspections of process vessels and equipment for each CMPU in organic HAP service or metal HAP service, as specified in paragraphs (a)(3)(i) through (v) of this section, to demonstrate compliance with paragraph (a)(1) of this section and to determine that the process vessels and equipment are sound and free of leaks. Alternatively, except when the subject CMPU contains metal HAP as particulate, inspections may be conducted while the subject process vessels and equipment are in VOC service, provided that leaks can be detected when in VOC service.

(i) Inspections must be conducted at least quarterly.

(ii) For these inspections, detection methods incorporating sight, sound, or smell are acceptable. Indications of a leak identified using such methods constitute a leak unless you demonstrate that the indications of a leak are due to a condition other than loss of HAP. If indications of a leak are determined not to be HAP in one quarterly monitoring period, you must still perform the inspection and demonstration in the next quarterly monitoring period.

(iii) As an alternative to conducting inspections, as specified in paragraph (a)(3)(ii) of this section, you may use Method 21 of 40 CFR part 60, appendix A-7, with a leak definition of 500 ppmv to detect leaks. You may also use Method 21 with a leak definition of 500 ppmv to determine if indications of a leak identified during an inspection conducted in accordance with paragraph (a)(3)(ii) of this section are due to a condition other than loss of HAP. The procedures in this paragraph (a)(3)(iii) may not be used as an alternative to the inspection required by paragraph (a)(3)(ii) of this section for process vessels that contain metal HAP as particulate.

(iv) Inspections must be conducted while the subject CMPU is operating.

(v) No inspection is required in a calendar quarter during which the subject CMPU does not operate for the entire calendar quarter and is not in organic HAP service or metal HAP service. If the CMPU operates at all during a calendar quarter, an inspection is required.

(4) Except as specified in paragraph (a)(6) of this section, you must repair any leak within 15 calendar days after detection of the leak, or document the reason for any delay of repair. For the purposes of this paragraph (a)(4), a leak will be considered “repaired” if a condition specified in paragraph (a)(4)(i), (ii), or (iii) of this section is met.

(i) The visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; or

(ii) No bubbles are observed at potential leak sites during a leak check using soap solution; or

(iii) The system will hold a test pressure.

(5) Except as specified in paragraph (a)(6) of this section, you must keep records of the dates and results of each inspection event, the dates of equipment repairs, and, if applicable, the reasons for any delay in repair.

(6) Beginning no later than the compliance dates specified in § 63.11494(i) for equipment in organic HAP service, as determined by § 63.180(d), paragraphs (a)(3) through (5) of this section no longer apply. Instead, you must comply with the requirements specified in paragraphs (a)(6)(i) through (xiv) of this section. Equipment that is in vacuum service is excluded from the requirements of this paragraph (a)(6). Equipment that is in organic HAP service less than 300 hours per calendar year is excluded from the requirements of this paragraph (a)(6) if it is identified as required in § 63.11501(c)(9)(i)(D).

(i) Except as specified in paragraph (a)(6)(ii) of this section, conduct leak detection monitoring annually for all pumps in light liquid service, valves in gas/vapor service and in light liquid service, and connectors in gas/vapor service and in light liquid service as specified in paragraphs (a)(6)(i)(A) through (C) of this section.

(A) Use the method specified in § 63.180(b)(1) through (3).

(B) The calibration gases must be zero air (less than 10 ppm of hydrocarbon in air); and methane and air at a concentration of 10,000 ppm methane. At the end of each monitoring day, check the instrument using the same calibration gas that was used to calibrate the instrument before use. Follow the procedures specified

in Method 21 of 40 CFR part 60, appendix A-7, section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. If multiple scales are used, record the instrument reading for each scale used. Divide the arithmetic difference of the initial and post-test calibration response by the corresponding calibration gas value for each scale and multiply by 100 to express the calibration drift as a percentage. If a calibration drift assessment shows a negative drift of more than 10 percent, then re-monitor all equipment monitored since the last calibration with instrument readings between the leak definition and the leak definition multiplied by (100 minus the percent of negative drift) divided by 100. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at your discretion, all equipment with instrument readings above the leak definition and below the leak definition multiplied by (100 plus the percent of positive drift) divided by 100 monitored since the last calibration may be re-monitored.

(C) The instrument reading that defines a leak is 10,000 ppm or greater. When a leak is detected, the following requirements apply:

(*1*) Clearly identify the leaking equipment. A weatherproof and readily visible identification, marked with the equipment identification number, must be attached to the leaking equipment. The identification on the equipment may be removed after it is repaired.

(*2*) A first attempt at repair must be made no later than 5 calendar days after the leak is detected.

(*3*) The piece of equipment must be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in paragraph (a)(6)(viii) of this section.

(*4*) The leak is repaired when instrument re-monitoring of the equipment does not detect a leak.

(*5*) It is a deviation to fail to take action to repair the leaks within the specified time. If action is taken to repair the leaks within the specified time, failure of that action to successfully repair the leak is not a deviation. However, if the repairs are unsuccessful, a leak is detected and you must take further action as required by applicable provisions of this paragraph (a)(6).

(ii) The following types of equipment are exempt from the monitoring requirements specified in paragraph (a)(6)(i) of this section if the equipment meets one of the requirements in paragraphs (a)(6)(ii)(A) through (E) of this section.

(A) Any pump in light liquid service, valve in gas/vapor service or light liquid service, or connector in gas/vapor service or light liquid service that is designated as unsafe-to-monitor if:

(*1*) You determine that the pump, valve, or connector is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a)(6)(i) of this section; and

(*2*) You have a written plan that requires monitoring of the pump, valve, or connector as frequently as practical during safe-to-monitor times, but not more frequently than the annual leak detection monitoring.

(B) Any pump in light liquid service if it meets one of the requirements in § 63.163(e)(1) through (6), (f), or (g). If the pump is located within the boundary of an unmanned plant site then it is exempt from the weekly visual inspection requirement of § 63.163(e)(4), and the daily requirements of § 63.163(e)(5), provided that each pump is visually inspected as often as practicable and at least monthly.

(C) Any valve in gas/vapor service or light liquid service that is designated as a difficult-to-monitor valve if:

(*1*) You determine that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;

(*2*) The CMPU within which the valve is located is an existing source or you designate less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and

(*3*) You follow a written plan that requires monitoring of the valve as frequently as practical, but not more frequently than the annual leak detection monitoring.

(D) Any connector in gas/vapor service or light liquid service that is designated as an unsafe-to-repair connector if:

(*1*) You determine that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a)(6)(i) of this section; and

(*2*) The connector will be repaired before the end of the next scheduled CMPU shutdown.

(E) Any connector in gas/vapor service or light liquid service that is inaccessible or is ceramic or ceramic-lined (*e.g.,* porcelain, glass, or glass-lined); however, if any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, a first attempt at repair must be made no later than 5 calendar days after the leak is detected. The leak must be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in paragraphs (a)(6)(viii) and (a)(6)(ii)(D) of this section. An inaccessible connector is defined in § 63.11502(b).

(iii) For compressors, comply with the requirements in § 63.164.

(iv) For pressure relief devices in gas/vapor service or light liquid service, comply with the requirements in § 63.165(e)(1) through (8), except as specified in paragraphs (a)(6)(iv)(A) through (D) of this section.

(A) Substitute “violation” with “deviation”.

(B) Section 63.165(e)(3)(v)(D) does not apply.

(C) Substitute each occurrence of April 25, 2023 with April 1, 2026.

(D) Substitute the occurrence of July 15, 2027 with April 1, 2029.

(v) For sampling connection systems, comply with the requirements in § 63.166.

(vi) For open-ended valves or lines, comply with the requirements in § 63.167.

(vii) For pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service, comply with the requirements in § 63.169 except a leak is detected if the instrument reading equals or exceeds 10,000 ppmv for pumps, valves, and connectors instead of the leak definitions specified in § 63.169(b).

(viii) For delay of repair, comply with the requirements in § 63.171 except the phrase “Except as specified in paragraph (f) of this section,” and § 63.171(f) do not apply.

(ix) For closed vent systems and control devices, comply with the requirements in § 63.172 except as specified in paragraphs (a)(6)(ix)(A) through (G) of this section.

(A) Substitute “§ 63.162(b) of this subpart” with “paragraph (a)(6)(xi) of this section”.

(B) Section 63.172(d) does not apply.

(C) Flares used to comply with this paragraph (a)(6) must comply with the requirements in subpart SS of this part.

(D) Substitute “violation” with “deviation”.

(E) Substitute “For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10)” with “For each affected source as described in § 63.11494(d), beginning no later than the compliance dates specified in § 63.11494(i)”.

(F) Substitute “After the compliance dates specified in § 63.100 of subpart F of this part” with “After the compliance dates specified in § 63.11494(i)”.

(G) Substitute “periodic report required by § 63.182(d)” with “semiannual compliance report required by paragraph (a)(6)(xiv) of this section”.

(x) For agitators in gas/vapor service and in light liquid service, comply with the requirements in § 63.173.

(xi) You may use the alternative means of emission limitation provided in §§ 63.178 and 63.179. You may also request a determination of alternative means of emission limitation to the requirements in this paragraph (a)(6) as provided in § 63.177. If the Administrator makes a determination that an alternative means of emission limitation is permissible, you must comply with the alternative.

(A) Substitute “§§ 63.163 through 63.171 and §§ 63.173 through 63.176” and “§ 63.163, through 63.171, and §§ 63.173 and 63.174 of this subpart” with “paragraphs (a)(6)(i) through (viii) and (x) of this section”.

(B) Substitute “§ 63.181” with “§ 63.11501(c)(9)”.

(C) Substitute “§ 63.163, §§ 63.168 and 63.169, and §§ 63.173 through 63.176 of this subpart” with “paragraphs (a)(6)(i), (ii), and (vii) through (x) of this section”.

(D) Substitute “§ 63.180(b) of this subpart” with “paragraph (a)(6)(i)(A) and (B) of this section”.

(E) Substitute “§§ 63.163 through 63.170, and §§ 63.172 through 63.176 of this subpart” with “paragraphs (a)(6)(i) through (vii), (ix), and (x) of this section”.

(F) Substitute “§ 63.174 of this subpart” with “paragraph (a)(6)(i) of this section”.

(G) Section 63.178(c)(3)(iii) and (iv) does not apply.

(H) Substitute “§ 63.172 of this subpart” with “paragraph (a)(6)(ix) of this section”.

(xii) Keep records as specified in § 63.11501(c)(9).

(xiii) Submit the Notification of Compliance Status as specified in § 63.11501(b)(6).

(xiv) Submit the Semiannual Compliance Report as specified in § 63.11501(d)(9).

(b) ***Small heat exchange systems.*** For each heat exchange system subject to this subpart with a cooling water flow rate less than 8,000 gallons per minute (gal/min) and not meeting one or more of the conditions in § 63.104(a)(1) through (4), you must comply with paragraphs (b)(1) through (4) of this section, or as an alternative, you may comply with any one of the requirements in item 1.a, 1.b, or 1.c of table 8 to this subpart. Beginning on April 1, 2029, for purposes of compliance with this paragraph (b), § 63.104(a)(3) and (4) no longer apply.

(1) You must develop and operate in accordance with a heat exchange system inspection plan. The plan must describe the inspections to be performed that will provide evidence of hydrocarbons in the cooling water. Among other things, inspections may include checks for visible floating hydrocarbon on the water, hydrocarbon odor, discolored water, and/or chemical addition rates. You must conduct inspections at least once per quarter, even if the previous inspection determined that the indications of a leak did not constitute a leak as defined by § 63.104(b)(6).

(2) You must perform repairs to eliminate the leak and any indications of a leak or demonstrate that the HAP concentration in the cooling water does not constitute a leak, as defined by § 63.104(b)(6), within 45 calendar days after indications of the leak are identified, or you must document the reason for any delay of repair in your next semiannual compliance report.

(3) You must keep records of the dates and results of each inspection, documentation of any demonstrations that indications of a leak do not constitute a leak, the dates of leak repairs, and, if applicable, the reasons for any delay in repair.

(4) Beginning no later than the compliance dates specified in § 63.11494(i), you must not inject water into or dispose of water in the heat exchange system if the water is considered wastewater as defined in § 63.11502.

(c) ***Startup, shutdown and malfunction.*** Startup, shutdown, and malfunction (SSM) provisions in subparts that are referenced in paragraphs (a) and (b) of this section do not apply.

(d) ***General duty.*** At all times, you must operate and maintain any affected CMPU, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the CMPU.

(e) ***Bypass provisions.*** Beginning no later than the compliance dates specified in § 63.11494(i), the use of a bypass line at any time on a closed vent system to divert emissions subject to any of the requirements in §§ 63.11495 through 63.11498 to the atmosphere, or to a control device not meeting the requirements specified in §§ 63.11495 through 63.11498, is an emissions standards deviation. If you are subject to the bypass monitoring requirements of § 63.983(a)(3), then you must continue to comply with the requirements in § 63.983(a)(3) and the recordkeeping and reporting requirements in §§ 63.998(d)(1)(ii) and 63.999(c)(2)(ii) and (iii), except the phrase “Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 63.983(a)(3) does not apply. Instead, the exemptions specified in paragraphs (e)(1) and (2) of this section apply. Owners or operators of closed-vent systems and control devices used to comply with the equipment leak provisions specified in paragraph (a)(6)(ix) of this section are not subject to this paragraph (e).

(1) Except for pressure relief devices subject to § 63.165(e)(4), equipment such as low leg drains and equipment subject to the requirements specified in paragraph (a)(6) of this section are not subject to this paragraph (e).

(2) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in 40 CFR 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as 40 CFR 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (e).

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75756, Dec. 21, 2012; 91 FR 16523, Apr. 1, 2026]

§ 63.11496 What are the standards and compliance requirements for process vents?

(a) ***Organic HAP emissions from batch process vents.*** You must comply with the requirements in paragraphs (a)(1) through (4) of this section for organic HAP emissions from your batch process vents for each CMPU using Table 1 organic HAP. If uncontrolled organic HAP emissions from all batch process vents from a CMPU subject to this subpart are equal to or greater than 10,000 pounds per year (lb/yr), you must also comply with the emission limits and other requirements in Table 2 to this subpart.

(1) You must determine the sum of actual organic HAP emissions from all of your batch process vents within a CMPU subject to this subpart using process knowledge, engineering assessment, or test data. Emissions for a standard batch in a process may be used to represent actual emissions from each batch in that process. You must maintain records of the calculations. Calculations of annual emissions are not required if you meet the emission standards for batch process vents in Table 2 to this subpart.

(2) As an alternative to calculating actual emissions for each affected CMPU at your facility, you may elect to estimate emissions for each CMPU based on the emissions for the worst-case CMPU. The worst-case CMPU means the CMPU at the affected source with the highest organic HAP emissions per batch. The worst-case emissions per batch are used with the number of batches run for other affected CMPU. Process knowledge, engineering assessment, or test data may be used to identify the worst-case process. You must keep records of the information and procedures used to identify the worst-case process.

(3) If your current estimate is that emissions from batch process vents from a CMPU are less than 10,000 lb/yr, then you must keep a record of the number of batches of each process operated per month. Also, you must reevaluate your total emissions from batch process vents prior to making any process changes that affect emission calculations in paragraphs (a)(1) and (2) of this section. If projected emissions increase to 10,000 lb/yr or more, you must be in compliance with the options for batch process vents in table 2 to this subpart upon initiating operation under the new operating conditions. You must maintain records documenting the results of all updated emissions calculations.

(4) As an alternative to determining the HAP emissions, you may elect to demonstrate that the amount of organic HAP used in the process is less than 10,000 lb/yr. You must keep monthly records of the organic HAP usage.

(b) ***Organic HAP emissions from continuous process vents.*** You must comply with the requirements in paragraphs (b)(1) through (3) of this section for organic HAP emissions from your continuous process vents for each CMPU subject to this subpart using Table 1 organic HAP. If the total resource-effectiveness (TRE) index value for a continuous process vent is less than or equal to 1.0, you must also comply with the emission limits and other requirements in Table 3 to this subpart.

(1) You must determine the TRE index value according to the procedures in § 63.115(d), except as specified in paragraphs (b)(1)(i) through (iii) of this section.

(i) You are not required to calculate the TRE index value if you control emissions in accordance with Table 3 to this subpart.

(ii) Sections 63.115(d)(1)(i) and (ii) are not applicable for the purposes of this paragraph (b)(1)(ii).

(iii) You may assume the TRE for a vent stream is >1.0 if the amount of organic HAP emitted in the vent stream is less than 0.1 pound per hour.

(2) If the current TRE index value is greater than 1, you must recalculate the TRE index value before you make any process or operational change that affects parameters in the calculation. If the recalculated TRE is less than or equal to 1.0, then you must comply with one of the compliance options for continuous process vents in Table 3 to this subpart before operating under the new operating conditions. You must maintain records of all TRE calculations.

(3) If a recovery device as defined in § 63.11502 is used to maintain the TRE index value at a level greater than 1.0 and less than or equal to 4.0, you must comply with § 63.982(e) and the requirements specified therein.

(c) ***Combined streams.*** If you combine organic HAP emissions from batch process vents and continuous process vents, you must comply with the more stringent standard in Table 2 or Table 3 to this subpart that applies to any portion of the combined stream, or you must comply with Table 2 for the batch process vents and Table 3 for the continuous process vents. The TRE index value for continuous process vents and the annual emissions from batch process vents shall be determined for the individual streams before they are combined, and prior to any control (e.g., by subtracting any emission contributions from storage tanks, continuous process vents or batch process vents, as applicable), in order to determine the most stringent applicable requirements.

(d) ***Halogenated streams.*** You must determine if an emission stream is a halogenated vent stream by calculating the mass emission rate of halogen atoms in accordance with § 63.115(d)(2)(v). Alternatively, you may elect to designate the emission stream as halogenated. If you use a combustion device to comply with the emission limits for organic HAP from a halogenated batch process vent or a halogenated continuous process vent, you must use a halogen reduction device to meet the emission limit in either paragraph (d)(1) or (d)(2) of this section and in accordance with § 63.994 and the requirements referenced therein.

(1) Reduce overall emissions of hydrogen halide and halogen HAP after the combustion device by greater than or equal to 95 percent, to less than or equal to 0.45 kilograms per hour (kg/hr), or to a concentration less than or equal to 20 parts per million by volume (ppmv).

(2) Reduce the halogen atom mass emission rate before the combustion device to less than or equal to 0.45 kg/hr or to a concentration less than or equal to 20 ppmv.

(e) ***Alternative standard for organic HAP.*** Exceptions to the requirements for the alternative standard requirements specified in Tables 2 and 3 to this subpart and § 63.2505 are specified in paragraphs (e)(1) through (6) of this section.

(1) When § 63.2505 of subpart FFFF refers to Tables 1 and 2 to subpart FFFF and §§ 63.2455 and 63.2460, it means Tables 2 and 3 to this subpart and § 63.11496(a) and (b).

(2) Sections 63.2505(a)(2) and (b)(9) do not apply.

(3) When § 63.2505(b) references § 63.2445 it means § 63.11494(f) through (h).

(4) The requirements for hydrogen halide and halogen HAP apply only to hydrogen halide and halogen HAP generated in a combustion device that is used to comply with the alternative standard.

(5) When § 63.1258(b)(5)(ii)(B)(2) refers to a “notification of process change” report, it means the semi-annual compliance report required by § 63.11501(d) for the purposes of this subpart.

(6) Except as specified in paragraphs (e)(6)(i) through (iii) of this section, the CEMS requirements and data reduction requirements for CEMS specified in § 63.2450(j) apply.

(i) Substitute April 1, 2026” for “August 12, 2020” in § 63.2450(j)(1).

(ii) Section 63.2450(j)(3) does not apply. Instead, you must conduct a performance evaluation of each CEMS according to the requirements in § 63.8 and according to the applicable Performance Specification of 40 CFR part 60, appendix B, except that the schedule in § 63.8(e)(4) does not apply, and before January 22, 2025, the results of the performance evaluation must be included in the notification of compliance status report. Beginning on and after January 22, 2025, the results of the performance evaluation must be submitted in accordance with § 63.2520(g).

(iii) Substitute “§ 63.11494(i)” for each occurrence of “§ 63.2445(g)”.

(f) ***Emissions from metal HAP process vents.*** You must comply with the requirements in paragraphs (f)(1) and (2) of this section for metal HAP emissions from each CMPU using Table 1 metal HAP. If the collective uncontrolled metal HAP emissions from all metal HAP process vents from a CMPU are equal to or greater than 400 lb/yr, then you must also comply with the emission limits and other requirements in Table 4 to this subpart and in paragraph (f)(3), (4), or (5) of this section. The requirements of this paragraph (f) do not apply to metal HAP process vents from CMPU containing only metal HAP that are in a liquid solution or other form that will not result in particulate emissions of metal HAP (e.g., metal HAP that is in ingot, paste, slurry, or moist pellet form or other form).

(1) You must determine the sum of metal HAP emissions from all metal HAP process vents within a CMPU subject to this subpart, except you are not required to determine the annual emissions if you control the metal HAP process vents within a CMPU in accordance with Table 4 to this subpart or if you determine your total metal HAP usage in the process unit is less than 400 lb/yr. To determine the mass emission rate you may use process knowledge, engineering assessment, or test data. You must keep records of the emissions calculations.

(2) If your current estimate is that total uncontrolled metal HAP emissions from a CMPU subject to this subpart are less than 400 lb/yr, then you must keep records of either the number of batches operated per month (batch vents) or the process operating hours (continuous vents). Also, you must reevaluate your total emissions before you make any process or operational change that affects emissions of metal HAP. If projected emissions

increase to 400 lb/yr or more, then you must be in compliance with one of the options for metal HAP process vents in Table 4 to this subpart upon initiating operation under the new operating conditions. You must keep records of all recalculated emissions determinations.

(3) If you have an existing source subject to the HAP metals emission limits specified in table 4 to this subpart, you must comply with the initial and continuous compliance and monitoring requirements in paragraphs (f)(3)(i) through (iv) of this section. You must keep records of monitoring results to demonstrate continuous compliance.

(i) You must prepare a monitoring plan containing the information in paragraphs (f)(3)(i)(A) through (E) of this section. The plan must be maintained on-site and be available on request. You must operate and maintain the control device according to a site-specific monitoring plan at all times.

(A) A description of the device;

(B) Results of a performance test or engineering assessment conducted in accordance with paragraph (f)(3)(ii) of this section verifying the performance of the device for reducing HAP metals or particulate matter (PM) to the levels required by this subpart;

(C) Operation and maintenance plan for the control device (including a preventative maintenance schedule consistent with the manufacturer's instructions for routine and long-term maintenance) and continuous monitoring system (CMS);

(D) A list of operating parameters that will be monitored to maintain continuous compliance with the applicable emissions limits; and

(E) Operating parameter limits based on either monitoring data collected during the performance test or established in the engineering assessment.

(ii) Except as specified in paragraph (f)(3)(iv) of this section, you must conduct a performance test or an engineering assessment for each CMPU subject to a HAP metals emissions limit in table 4 to this subpart and on or before June 1, 2026 report the results in your Notification of Compliance Status (NOCS), after June 1, 2026 include a summary of results of a performance test submitted according to paragraph (g)(1)(iv) of this section and the results of an engineering assessment in your NOCS. If the performance test was not submitted according to paragraph (g)(1)(iv) of this section, submit the complete report with the NOCS. Each performance test or engineering assessment must be conducted under representative operating conditions, and sampling for each performance test must be conducted at both the inlet and outlet of the control device. You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent the entire range of normal operation, including operational conditions for maximum emissions if such emissions are not expected during maximum production. You shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests. If you own or operate an existing affected source, you are not required to conduct the initial performance test if a prior performance test was conducted within the 5 years prior to the effective date using the same methods specified in paragraph (f)(3)(iii) of this section, and, either no process changes have been made since the test, or, if you can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.

(iii) Except as specified in paragraph (f)(3)(iv) of this section, if you elect to conduct a performance test, it must be conducted according to requirements in § 63.11410(j)(1). As an alternative to conducting a performance test using Method 5 or 5D to determine the concentration of PM, you may use Method 29 of 40 CFR part 60, appendix A-8 of this chapter to determine the concentration of HAP metals. ASTM D6784-24 (incorporated by reference, see § 63.14) may also be used in lieu of Method 29, if the target compound is mercury and concentrations are approximately 0.5 to 100 micrograms per cubic meter. You have demonstrated compliance if the overall reduction of either HAP metals or total PM is equal to or greater than 95 percent.

(iv) Beginning on the compliance dates specified in § 63.11494(i), the option to use an engineering assessment (as specified in paragraph (f)(3)(ii) of this section for determining compliance with a HAP metals emissions limit in table 4 to this subpart) no longer applies. Instead, you must comply with the performance test requirements in paragraphs (f)(3)(ii) and (iii) of this section. If a performance test has never been

conducted, conduct an initial performance test no later than the compliance dates specified in § 63.11494(i) or within 180 days after startup of the source, whichever is later. Begin conducting subsequent performance tests no later than the compliance dates specified in § 63.11494(i) or 60 calendar months after the previous performance test, whichever is later.

(4) If you have a new source using a baghouse as a control device, you must install, operate, and maintain a bag leak detection system on all baghouses used to comply with the HAP metals emissions limit in table 4 to this subpart. You must comply with the testing, monitoring, and recordkeeping requirements in § 63.11410(g), (i), and (j)(1), except you are not required to submit the monitoring plan required by § 63.11410(g)(2) for approval. If a performance test has never been conducted, conduct an initial performance test no later than the compliance dates specified in § 63.11494(i) or within 180 days after startup of the source, whichever is later. Begin conducting subsequent performance tests no later than the compliance dates specified in § 63.11494(i) or 60 calendar months after the previous performance test, whichever is later.

(5) If you have a new source using a control device other than a baghouse to comply with the HAP metals emission limits in table 4 to this subpart, you must comply with the initial and continuous compliance and monitoring requirements in paragraphs (f)(3)(i) through (iv) of this section.

(g) ***Exceptions and alternatives to 40 CFR part 63, subpart SS.*** If you are complying with the emission limits and other requirements for continuous process vents in Table 3 to this subpart, the provisions in paragraphs (g)(1) through (7) and (9) of this section apply in addition to the provisions in 40 CFR part 63, subpart SS. If you are complying with the emission limits and other requirements for batch process vents in Table 2 to this subpart, the provisions in paragraphs (g)(1) through (8) of this section apply in addition to the provisions in subpart SS.

(1) ***Requirements for performance tests.***

(i) If you are complying with a percent reduction, mass emission limit, or outlet concentration performance standard in table 2 to this subpart for batch process vents or in table 3 to this subpart for continuous process vents, then the requirements specified in paragraphs (g)(1)(ii) through (iv) of this section and in § 63.2450(g)(1) through (4) apply instead of, or in addition to, the requirements specified in subpart SS of this part.

(ii) Upon request, you shall make available to the Administrator, such records as may be necessary to determine the conditions of performance tests.

(iii) If a performance test has never been conducted, conduct an initial performance test no later than 180 days after the compliance dates specified in § 63.11494(i). Begin conducting subsequent performance tests no later than 180 days after the compliance dates specified in § 63.11494(i) or 60 calendar months after the previous performance test, whichever is later. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent the entire range of normal operation, including operational conditions for maximum emissions if such emissions are not expected during maximum production. The owner or operator may not conduct performance tests during periods of malfunction.

(iv) Beginning on June 1, 2026 within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedure specified in § 63.9(k). Submit the data in a file format generated using the EPA's Electronic Reporting Tool (ERT). Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website (*https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert*) accompanied by the other information required by § 63.7(g)(2) in PDF format.

(2) ***Design evaluation.***

(i) Except as specified in paragraph (g)(2)(ii) of this section, to determine initial compliance with a percent reduction or outlet concentration emission limit, you may elect to conduct a design evaluation as specified in § 63.1257(a)(1) instead of a performance test as specified in subpart SS of this part. You must establish the value(s) and basis for the operating limits as part of the design evaluation. For continuous process vents, the design evaluation must be conducted at maximum representative operating conditions for the process, unless

the Administrator specifies or approves alternate operating conditions. For batch process vents, the design evaluation must be conducted under worst-case conditions, as specified in § 63.2460(c)(2).

(ii) Beginning on the compliance dates specified in § 63.11494(i), paragraph (g)(2)(i) of this section does not apply. Instead, the owner or operator must comply with the performance test requirements in paragraph (g)(1) of this section.

(3) ***Outlet concentration correction for combustion devices.*** When § 63.997(e)(2)(iii)(C) requires you to correct the measured concentration at the outlet of a combustion device to 3 percent oxygen if you add supplemental combustion air, the requirements in either paragraph (g)(3)(i) or (ii) of this section apply for the purposes of this subpart.

(i) You must correct the concentration in the gas stream at the outlet of the combustion device to 3 percent oxygen if you add supplemental gases, as defined in § 63.2550, to the vent stream, or;

(ii) You must correct the measured concentration for supplemental gases using equation 1 to § 63.2460(e)(6); you may use process knowledge and representative operating data to determine the fraction of the total flow due to supplemental gas.

(4) ***Continuous parameter monitoring.*** The provisions in § 63.2450(k)(1) through (7) apply in addition to the requirements for continuous parameter monitoring systems (CPMS) in subpart SS of this part, except as specified in paragraphs (g)(4)(i) through (iii) of this section.

(i) You may measure pH or caustic strength of the scrubber effluent at least once per day for any halogen scrubber within a CMPU subject this section.

(ii) The requirements in § 63.2450(k)(6) to request approval of a procedure to monitor operating parameters does not apply for the purposes of this subpart. You must provide the required information in your NOCS report required by § 63.11501(b).

(iii) In § 63.2450(k)(7), substitute “§ 63.11494(i)” for “§ 63.2445(g)”.

(5) [Reserved]

(6) ***Excused excursions.*** Excused excursions, as defined in subpart SS of this part 63, are not allowed.

(7) ***Energetics and organic peroxides.*** If an emission stream contains energetics or organic peroxides that, for safety reasons, cannot meet an applicable emission limit specified in this subpart, then you must submit an application to the Administrator explaining why an undue safety hazard would be created if the air emission controls were installed, and you must describe the procedures that you will implement to minimize HAP emissions from these vent streams in lieu of the emission limitations in this section.

(8) ***Additional requirements for batch process vents.*** The provisions specified in § 63.2460(c) apply in addition to the provisions in subpart SS of this part 63, except as specified in paragraphs (g)(8)(i) through (iii) of this section.

(i) References to emission limits in Table 2 to subpart FFFF mean the emission limits in Table 2 to this subpart.

(ii) References to MCPU mean CMPU for purposes of this subpart.

(iii) Section 63.2460(c)(8) does not apply for the purposes of this subpart.

(9) ***Parameter monitoring averaging periods.*** Daily averages required in § 63.998(b)(3) apply at all times except during startup and shutdown. Separate averages shall be determined for each period of startup and period of shutdown.

(h) ***Surge control vessels and bottoms receivers.*** For each surge control vessel and bottoms receiver that meets the applicability criteria for storage tanks specified in Table 5 to this subpart, you must meet the emission limits and control requirements specified in Table 5 to this subpart.

(i) ***Startup, shutdown, and malfunction (SSM).*** References to SSM provisions in subparts that are referenced in paragraphs (a) through (h) of this section or Tables 2 through 5 to this subpart do not apply.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75757, Dec. 21, 2012; 91 FR 16525, Apr. 1, 2026]

§ 63.11497 What are the standards and compliance requirements for storage tanks?

(a) ***Organic HAP emissions from storage tanks.*** You must comply with the emission limits and other requirements in table 5 to this subpart and in paragraphs (b) through (f) of this section for organic HAP emissions from each of your storage tanks that meet the applicability criteria in table 5 to this subpart.

(b) ***Planned routine maintenance for a control device.*** Operate in accordance with paragraphs (b)(1) through (3) of this section for periods of planned routine maintenance of a control device for storage tanks.

(1) Add no material to the storage tank during periods of planned routine maintenance.

(2) Limit periods of planned routine maintenance for each control device (or series of control devices) to no more than 240 hours per year (hr/yr), or submit an application to the Administrator requesting an extension of this time limit to a total of 360 hr/yr. The application must explain why the extension is needed and it must be submitted at least 60 days before the 240-hour limit will be exceeded.

(3) Keep records of the day and time at which planned routine maintenance periods begin and end, and keep a record of the type of maintenance performed.

(c) ***SSM provisions.*** References to SSM provisions in subparts that are referenced in paragraphs (a) or (b) of this section or table 5 to this subpart do not apply.

(d) ***Combustion of halogenated streams.*** If you use a combustion device to comply with the emission limits for organic HAP from a halogenated vent stream from a storage tank, you must reduce emissions in accordance with § 63.11496(d) and the requirements referenced therein.

(e) ***Pressure vessels.*** If you are required to comply with this paragraph (e) as specified in item 5 of table 5 to this subpart (for each pressure vessel with a design capacity greater than or equal to 20,000 gallons), you must operate and maintain the pressure vessel, as specified in paragraphs (e)(1) through (5) of this section.

(1) The pressure vessel must be designed to operate with no detectable emissions at all times.

(2) Except for equipment that meet the criteria specified in § 63.11495(a)(6)(ii)(A) (for valves, connectors, and pumps in gas/vapor service and in light liquid service that are unsafe to monitor), § 63.11495(a)(6)(ii)(C) (for valves in gas/vapor service and in light liquid service that are difficult-to-monitor), and § 63.11495(a)(6)(ii)(E) (for connectors in gas/vapor service and in light liquid service that are inaccessible or ceramic or ceramic-lined), you must monitor each point on the pressure vessel through which organic HAP could potentially be emitted by conducting initial and annual performance tests using Method 21 of appendix A-7 to part 60 of this chapter.

(3) Each instrument reading greater than 500 ppmv is a deviation.

(4) Estimate the flow rate and total regulated material emissions from the defect. Assume the pressure vessel has been emitting for half of the time since the last performance test, unless other information supports a different assumption.

(5) Whenever organic HAP are in the pressure vessel, you must operate the pressure vessel as a closed system that vents through a closed vent system to either a control device (other than a flare) in accordance with §

63.982(c); or a flare in accordance with § 63.982(b). For purposes of compliance with this paragraph, a release of organic HAP through a pressure vessel's pressure relief device to the atmosphere is a deviation.

(f) ***Exceptions and alternatives to subpart SS of this part.*** If you are complying with a percent reduction, mass emission limit, or outlet concertation performance standard in table 5 to this subpart for storage tanks, then the provisions in paragraphs (f)(1) and (2) of this section apply in addition to the provisions in subpart SS of this part.

(1) ***Requirements for performance tests.***

(i) The requirements specified in paragraphs (f)(1)(ii) through (iv) of this section apply instead of, or in addition to, the requirements specified in subpart SS of this part.

(ii) Upon request, you shall make available to the Administrator, such records as may be necessary to determine the conditions of performance tests.

(iii) If a performance test has never been conducted, conduct an initial performance test no later than 180 days after the compliance dates specified in § 63.11494(i). Begin conducting subsequent performance tests no later than 180 days after the compliance dates specified in § 63.11494(i) or 60 calendar months after the previous performance test, whichever is later. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent the entire range of normal operation, including operational conditions for maximum emissions if such emissions are not expected during maximum production.

(iv) Beginning on June 1, 2026, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedure specified in § 63.9(k). Submit the data in a file format generated using the EPA's Electronic Reporting Tool (ERT). Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website (*https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert*) accompanied by the other information required by § 63.7(g)(2) in PDF format.

(2) ***Design evaluation.*** Beginning on the compliance dates specified in § 63.11494(i), the option to use a design evaluation to demonstrate compliance in § 63.985(b)(1)(i) does not apply. Instead, the owner or operator must comply with the performance test requirements in § 63.985(b)(1)(ii) and paragraph (f)(1) of this section.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75757, Dec. 21, 2012; 91 FR 16527, Apr. 1, 2026]

§ 63.11498 What are the standards and compliance requirements for wastewater systems?

(a) You must comply with the requirements in paragraph (a)(1) and (2) of this section and in table 6, item 1 to this subpart for all wastewater streams from a CMPU subject to this subpart. If the partially soluble HAP concentration in a wastewater stream is equal to or greater than 10,000 ppmw and the wastewater stream contains a separate organic phase, then you must also comply with table 6, item 2 to this subpart for that wastewater stream. Partially soluble HAP are listed in table 7 to this subpart.

(1) Except as specified in paragraph (a)(2) of this section, you must determine the total concentration of partially soluble HAP in each wastewater stream using process knowledge, engineering assessment, or test data. Also, you must reevaluate the concentration of partially soluble HAP if you make any process or operational change that affects the concentration of partially soluble HAP in a wastewater stream.

(2) You are not required to determine the partially soluble concentration in wastewater that is hard piped to a combustion unit or hazardous waste treatment unit, as specified in Table 6, Item 2.b to this subpart.

(3) Separated organic material that is recycled to a process is no longer wastewater and no longer subject to the wastewater requirements after it has been recycled.

(b) References to SSM provisions in subparts that are referenced in paragraph (a) of this section or table 6 to this subpart do not apply.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75757, Dec. 21, 2012; 91 FR 16528, Apr. 1, 2026]

§ 63.11499 What are the standards and compliance requirements for heat exchange systems?

(a) Except as specified in paragraph (d) of this section, if the cooling water flow rate in your heat exchange system is equal to or greater than 8,000 gal/min and is not meeting one or more of the conditions in § 63.104(a)(1) through (4), then you must comply with one of the requirements specified in table 8 to this subpart.

(b) For equipment that meets Current Good Manufacturing Practice (CGMP) requirements of 21 CFR part 211, you may use the physical integrity of the reactor as the surrogate indicator of heat exchanger system leaks when complying with Item 1.a in Table 8 to this subpart.

(c) Any reference to SSM provisions in other subparts that are referenced in paragraphs (a) and (b) of this section or Table 8 to this subpart do not apply.

(d) If you are required to comply with the requirements in § 63.104(f) through (j) and (l) as specified in item 1.c of table 8 to this subpart (for heat exchange systems with a cooling water flow rate greater than or equal to 8,000 gal/min), then you must also comply with the requirements in paragraphs (d)(1) through (6) of this section.

(1) Replace each occurrence of “For each source as defined in § 63.101,” with “For each affected source as described in § 63.11494(d),”.

(2) Replace each reference to § 63.100(k)(10) with § 63.11494(i).

(3) Replace each occurrence of “semi-annual periodic report required by § 63.152(c)”, “semi-annual periodic report”, or “periodic report” with “semiannual compliance report”.

(4) The phrase “Except as specified in paragraph (g)(6) of this section,” in § 63.104(g)(4) does not apply.

(5) Section 63.104(g)(6) and (h)(6) do not apply.

(6) Beginning no later than the compliance dates specified in § 63.11494(i), you must not inject water into or dispose of water in the heat exchange system if the water is considered wastewater as defined in § 63.11502.

[72 FR 73623, Dec. 28, 2007, as amended at 91 FR 16528, Apr. 1, 2026]

§ 63.11500 What compliance options do I have if part of my plant is subject to both this subpart and another Federal standard?

For any CMPU, heat exchange system, or wastewater system subject to the provisions of both this subpart and another rule, you may elect to comply only with the more stringent provisions as specified in paragraphs (a) through (d) of this section. You must consider all provisions of the rules, including monitoring, recordkeeping, and reporting. You must identify the subject CMPU, heat exchange system, and/or wastewater system, and the provisions with which you will comply in your NOCS report required by § 63.11501(b). You also must demonstrate in your NOCS report that each provision with which you will comply is at least as stringent as the otherwise applicable requirement in this subpart VVVVVV. You are responsible for making accurate determinations concerning the more stringent standards and noncompliance with this rule is not excused if it is later determined that your determination was in error and, as a result, you are violating this subpart. Compliance with this rule is your responsibility and the NOCS report does not alter or affect that responsibility.

(a) ***Compliance with other subparts of this part 63.***

(1) If any part of a CMPU that is subject to the provisions of this subpart is also subject to the provisions of another subpart of 40 CFR part 63, then compliance with any of the requirements in the other subpart of this part 63 that are at least as stringent as the corresponding requirements in this subpart VVVVVV constitutes compliance with this subpart VVVVVV.

(2) After the compliance dates specified in § 63.11494, at an offsite reloading or cleaning facility subject to § 63.1253(f), as referenced from § 63.2470(e) and table 5 to this subpart, compliance with the monitoring, recordkeeping, and reporting provisions of any other subpart of this part constitutes compliance with the monitoring, recordkeeping, and reporting provisions of § 63.1253(f)(7)(ii) or (iii). You must identify in your notification of compliance status report required by § 63.11501(b) the subpart of this part with which the owner or operator of the offsite reloading or cleaning facility complies.

(b) ***Compliance with subparts of part 60 of this chapter.*** If any part of a CMPU that is subject to the provisions of this subpart is also subject to the provisions of subpart VV, VVa, VVb, DDD, III, IIIa, NNN, NNNa, RRR, or RRRa in part 60 of this chapter, then compliance with any of the requirements in part 60 of this chapter, subpart VV, VVa, VVb, DDD, III, IIIa, NNN, NNNa, RRR, or RRRa that are at least as stringent as the corresponding requirements in this subpart constitutes compliance with this subpart.

(c) ***Compliance with subparts of 40 CFR part 61.*** If any part of a CMPU that is subject to the provisions of this subpart is also subject to the provisions of subpart V, Y, BB, or FF of 40 CFR part 61, then compliance with any of the requirements in 40 CFR part 61, subpart V, Y, BB, or FF that are at least as stringent as the corresponding requirements in this subpart VVVVVV constitutes compliance with this subpart VVVVVV.

(d) ***Compliance with 40 CFR parts 260 through 272.*** If any part of a CMPU that is subject to the provisions of this subpart is also subject to the provisions of 40 CFR parts 260 through 272, then compliance with any of the requirements in 40 CFR part 260 through 272 rule that are at least as stringent as the corresponding requirements in this subpart VVVVVV constitutes compliance with this subpart VVVVVV.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75757, Dec. 21, 2012; 91 FR 16528, Apr. 1, 2026]

§ 63.11501 What are the notification, recordkeeping, and reporting requirements?

(a) ***General provisions.*** You must meet the requirements of the General Provisions in 40 CFR part 63, subpart A, as shown in Table 9 to this subpart. The General Provisions in other parts do not apply except when a requirement in an overlapping standard, which you determined is at least as stringent as subpart VVVVVV and with which you have opted to comply, requires compliance with general provisions in another part.

(b) ***Notification of compliance status (NOCS).*** Beginning August 31, 2026, the owner or operator must submit all subsequent Notification of Compliance Status reports in PDF format to the EPA following the procedure specified in § 63.9(k). Your NOCS required by § 63.9(h) must include the following additional information specified in paragraphs (b)(1) through (5) of this section, as applicable. Within 150 days after the first applicable compliance date, you must also submit the information in paragraph (b)(6) of this section for equipment subject to the requirements of § 63.11495(a)(6).

(1) This certification of compliance, signed by a responsible official:

(i) “This facility complies with the management practices in § 63.11495.”

(ii) “This facility complies with the requirements in § 63.11496 for HAP emissions from process vents.”

(iii) “This facility complies with the requirements in § 63.11496 and § 63.11497 for surge control vessels, bottoms receivers, and storage tanks.”

(iv) “This facility complies with the requirements in § 63.11498 to treat wastewater streams.”

(v) “This facility complies with the requirements in § 63.11499 for heat exchange systems.”

(2) If you comply with the alternative standard as specified in Table 2 to this subpart or Table 3 to this subpart, include the information specified in § 63.1258(b)(5), as applicable.

(3) If you establish an operating limit for a parameter that will not be monitored continuously in accordance with §§ 63.11496(g)(4) and 63.2450(k)(6), provide the information as specified in §§ 63.11496(g)(4) and 63.2450(k)(6).

(4) A list of all transferred liquids that are reactive or resinous materials, as defined in § 63.11502(b).

(5) If you comply with provisions in an overlapping rule in accordance with § 63.11500, identify the affected CMPU, heat exchange system, and/or wastewater system; provide a list of the specific provisions with which you will comply; and demonstrate that the provisions with which you will comply are at least as stringent as the otherwise applicable requirements, including monitoring, recordkeeping, and reporting requirements, in this subpart VVVVVV.

(6) For equipment subject to the requirements of § 63.11495(a)(6), you must also submit the information specified in paragraphs (b)(6)(i) through (iv) of this section.

(i) CMPU identification,

(ii) Number of each equipment type (*e.g.,* valves, pumps) excluding equipment in vacuum service; and

(iii) Method of compliance with the standard (*e.g.,* "annual leak detection and repair" or "equipped with dual mechanical seals").

(iv) For pressure relief devices subject to the pressure release management work practice standards in § 63.165(e), you must submit the information listed in paragraphs (b)(6)(iv)(A) and (B) of this section.

(A) A description of the monitoring system to be implemented, including the relief devices and process parameters to be monitored, and a description of the alarms or other methods by which operators will be notified of a pressure release.

(B) A description of the prevention measures to be implemented for each affected pressure relief device.

(c) ***Recordkeeping.*** You must maintain files of all information required by this subpart for at least 5 years following the date of each occurrence according to the requirements in § 63.10(b)(1). If you are subject, you must comply with the recordkeeping and reporting requirements of § 63.10(b)(2)(iii) and (vi) through (xiv), and the applicable requirements specified in paragraphs (c)(1) through (11) of this section.

(1) For each CMPU subject to this subpart, you must keep the records specified in paragraphs (c)(1)(i) through (viii) of this section.

(i) Except as specified in paragraph (c)(9) of this section, records of management practice inspections, repairs, and reasons for any delay of repair, as specified in § 63.11495(a)(5).

(ii) Except as specified in paragraph (c)(11) of this section, records of small heat exchange system inspections, demonstrations of indications of leaks that do not constitute leaks, repairs, and reasons for any delay in repair as specified in § 63.11495(b).

(iii) If batch process vent emissions are less than 10,000 lb/yr for a CMPU, records of batch process vent emission calculations, as specified in § 63.11496(a)(1), the number of batches operated each month, as specified in § 63.11496(a)(3), and any updated emissions calculations, as specified in § 63.11496(a)(3). Alternatively, keep records of the worst-case processes or organic HAP usage, as specified in § 63.11496(a)(2) and (4), respectively.

(iv) Records of all TRE calculations for continuous process vents as specified in § 63.11496(b)(2).

(v) Records of metal HAP emission calculations as specified in § 63.11496(f)(1) and (2). If total uncontrolled metal HAP process vent emissions from a CMPU subject to this subpart are estimated to be less than 400

lb/yr, also keep records of either the number of batches per month or operating hours, as specified in § 63.11496(f)(2).

(vi) Records identifying wastewater streams and the type of treatment they receive, as specified in table 6 to this subpart.

(vii) Before April 1, 2029, records of the date, time, and duration of each malfunction of operation of process equipment, control devices, recovery devices, or continuous monitoring systems used to comply with this subpart that causes a failure to meet a standard. The record must include a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over the standard, and a description of the method used to estimate the emissions. After April 1, 2029, for any deviation, records of the start date, start time, duration in hours, cause, a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

(viii) Before April 1, 2029, records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.11495(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. After April 1, 2029, for any deviation, records of actions taken to minimize emissions in accordance with § 63.11495(d), and any corrective action taken to return the affected unit to its normal or usual manner of operation.

(2) For batch process vents subject to table 2 to this subpart and continuous process vents subject to table 3 to this subpart, you must keep records specified in paragraphs (c)(2)(i) or (ii) of this section, as applicable.

(i) If you route emissions to a control device other than a flare, keep records of performance tests, if applicable, as specified in § 63.998(a)(2)(ii) and (4), keep records of the monitoring system and the monitored parameters, as specified in § 63.998(b) and (c), and keep records of the closed-vent system, as specified in § 63.998(d)(1). If you use a recovery device to maintain the TRE above 1.0 for a continuous process vent, keep records of monitoring parameters during the TRE index value determination, as specified in § 63.998(a)(3).

(ii) If you route emissions to a flare, keep records of the flare compliance assessment, as specified in § 63.998(a)(1)(i), keep records of the pilot flame monitoring, as specified in § 63.998(a)(1)(ii) and (iii), and keep records of the closed-vent system, as specified in § 63.998(d)(1).

(3) For metal HAP process vents subject to table 4 to this subpart, you must keep records specified in paragraph (c)(3)(i) or (ii) of this section, as applicable.

(i) For a new source using a control device other than a baghouse and for any existing source, maintain a monitoring plan, as specified in § 63.11496(f)(3)(i), and keep records of monitoring results, as specified in § 63.11496(f)(3).

(ii) For a new source using a baghouse to control metal HAP emissions, keep a site-specific monitoring plan, as specified in §§ 63.11496(f)(4) and 63.11410(g), and keep records of bag leak detection systems, as specified in §§ 63.11496(f)(4) and 63.11410(g)(4).

(4) For each storage tank subject to table 5 to this subpart, you must keep records specified in paragraphs (c)(4)(i) through (vii) of this section, as applicable.

(i) Keep records of the vessel dimensions, capacity, and liquid stored, as specified in § 63.1065(a).

(ii) Keep records of each inspection of an internal floating roof, as specified in § 63.1065(b)(1).

(iii) Keep records of each seal gap measurement for external floating roofs, as specified in § 63.1065(b)(2), and keep records of inspections of external floating roofs, as specified in § 63.1065(b)(1).

(iv) If you vent emissions to a control device other than a flare, keep records of the operating plan and measured parameter values, as specified in §§ 63.985(c) and 63.998(d)(2).

(v) If you vent emissions to a flare, keep records of all periods of operation during which the flare pilot flame is absent, as specified in §§ 63.987(c) and 63.998(a)(1), and keep records of closed-vent systems, as specified in § 63.998(d)(1).

(vi) For periods of planned routine maintenance of a control device, keep records of the day and time at which each maintenance period begins and ends, and keep records of the type of maintenance performed, as specified in § 63.11497(b)(3).

(vii) For each pressure vessel subject to the requirements of § 63.11497(f) you must keep records as specified in paragraphs (c)(4)(vii)(A) and (B) of this section.

(A) The date of each performance test conducted according to § 63.11497(f)(2).

(B) The record of each performance test conducted according to § 63.11497(f)(2), including the following:

(*1*) Date each defect was detected and the instrument reading (in ppmv) during the performance test.

(*2*) Date of the next performance test that shows the instrument reading is less than 500 ppmv and the instrument reading (in ppmv) during the performance test.

(*3*) Start and end dates of each period after the date in paragraph (c)(4)(ix)(B)(*1*) of this section when the pressure vessel was completely empty.

(*4*) Estimated emissions from each defect.

(5) For each wastewater stream subject to item 2 in table 6 to this subpart, keep records of the wastewater stream identification and the disposition of the organic phase(s), as specified in item 2 to table 6 to this subpart.

(6) Except as specified in paragraph (c)(11) of this section, for each large heat exchange system subject to table 8 to this subpart, you must keep records of detected leaks; the date the leak was detected; if demonstrated not to be a leak, the basis for that determination; the date of efforts to repair the leak; and the date the leak is repaired, as specified in table 8 to this subpart.

(7) You must keep a record of all transferred liquids that are reactive or resinous materials, as defined in § 63.11502(b), and not included in the NOCS.

(8) For continuous process vents subject to table 3 to this subpart, keep records of the occurrence and duration of each startup and shutdown of operation of process equipment, or of air pollution control and monitoring equipment.

(9) If you are subject to the equipment leak requirements specified in § 63.11495(a)(6), then you must keep records as specified in paragraphs (c)(9)(i) through (vii) of this section instead of the records specified in paragraph (c)(1)(i) of this section.

(i) Keep a list, summary description, or diagram(s) showing the location and identification number of all equipment in organic HAP service at the facility and the information in paragraphs (c)(9)(i)(A) through (D) of this section.

(A) Identification of equipment designated as unsafe to monitor, difficult to monitor, unsafe to inspect, difficult to inspect, or unsafe to repair and the plan for monitoring or inspecting this equipment, as applicable.

(B) Identification of the equipment in batch process units, for which you do not elect to pressure test the batch product process equipment train.

(C) Identification of the equipment in heavy liquid service.

(D) Identification of the equipment in organic HAP service less than 300 hours per calendar year.

(ii) For leak detection monitoring and inspections required by paragraphs § 63.11495(a)(6) (*e.g.,* monitoring using Method 21 of appendix A-7 to part 60 of this chapter; visible, audible, or olfactory monitoring; closed vent system inspections; and batch process unit monitoring), record the date of the monitoring or inspection and include a statement of whether leaks were detected. If no leaks are detected, records of the monitoring and inspection results are not required.

(iii) When each leak is detected as specified in § 63.11495(a)(6), the following information must be recorded:

(A) The instrument and the equipment identification number and the operator name, initials, or identification number.

(B) The date the leak was detected and the date of first attempt to repair the leak.

(C) The date of successful repair of the leak.

(D) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A-7 of this chapter after it is successfully repaired or determined to be nonrepairable.

(E) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(*1*) You may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(*2*) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(F) Dates of CMPU shutdowns that occur while the equipment is unrepaired.

(iv) For each pressure relief device subject to the provisions in § 63.165(e), you must keep the records specified in paragraphs (c)(9)(iv)(A) through (C) of this section.

(A) Records of the prevention measures implemented as required in § 63.165(e)(3)(ii).

(B) Records of the number of releases during each calendar year.

(C) For each release to the atmosphere, you must keep the records specified in paragraphs (c)(9)(iv)(C)(*1*) through (*4*) of this section.

(*1*) The start and end time and date of each pressure release to the atmosphere.

(*2*) Records of any data, assumptions, and calculations used to estimate of the mass quantity of each organic HAP released during the event.

(*3*) Records of the root cause analysis and corrective action analysis conducted as required in § 63.165(e)(3)(iii), including an identification of the affected facility, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.165(e)(7)(i).

(*4*) For any corrective action analysis for which implementation of corrective actions are required in § 63.165(e)(7), a description of the corrective action(s) completed within the first 45 days following the

discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(v) If you own or operate a batch product process and elect to pressure test the batch product process equipment train to demonstrate compliance with § 63.11495(a)(6), you are exempt from the requirements of paragraphs (c)(9)(i) through (iv) of this section. Instead, you must maintain records of the following information:

(A) A list of identification numbers for equipment in a batch product process.

(B) The dates of each pressure test required in § 63.178(b), the test pressure, and the pressure drop observed during the test.

(C) When a batch product process equipment train does not pass two consecutive pressure tests, the following information must be recorded:

(*1*) The date of each pressure test and the date of each leak repair attempt.

(*2*) Repair methods applied in each attempt to repair the leak.

(*3*) The reason for the delay of repair.

(*4*) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.

(*5*) The date of successful repair.

(vi) You must maintain records of the information specified in paragraphs (c)(9)(vi)(A) through (C) of this section for closed vent systems and control devices subject to the provisions of § 63.172. The records specified in paragraph (c)(9)(vi)(A) of this section must be retained for the life of the equipment.

(A) The design specifications and performance demonstrations specified in paragraphs (c)(9)(vi)(A)(*1*) through (*4*) of this section.

(*1*) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.

(*2*) The dates and descriptions of any changes in the design specifications.

(*3*) The flare design (*i.e.,* steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by subpart SS of this part.

(*4*) A description of the parameter or parameters monitored, as required in § 63.172(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(B) Records of operation of closed vent systems and control devices, as specified in paragraphs (c)(9)(vi)(B)(*1*) through (*3*) of this section.

(*1*) Dates and durations when the closed vent systems and control devices required in § 63.11495(a)(6) are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.

(*2*) Dates and durations during which the monitoring system or monitoring device is inoperative.

(*3*) Dates and durations of startups and shutdowns of control devices required in § 63.11495(a)(6).

(C) Records of inspections of closed vent systems subject to the provisions of § 63.172, as specified in paragraphs (c)(9)(vi)(C)(*1*) and (*2*) of this section.

(*1*) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (2) during which leaks were detected, the information specified in paragraph (c)(9)(iii) of this section must be recorded.

(*2*) For each flow event from a bypass line subject to the requirements in § 63.172(j), you must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements in § 63.11495(a)(6), you must include an estimate of the volume of gas, the concentration of organic HAP in the gas, and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.

(vii) If you choose to comply with the requirements of § 63.179, you must maintain the following records:

(A) Identification of the CMPU(s) and the organic HAPs they handle.

(B) A schematic of the CMPU, enclosure, and closed vent system.

(C) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

(10) For each flow event from a bypass line subject to the requirements in § 63.11495(e), you must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements specified in §§ 63.11495 through 63.11499, you must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.

(11) If you are subject to the requirements specified in item 1.c of table 8 to this subpart (for heat exchange systems with a cooling water flow rate greater than or equal to 8,000 gal/min), then you must keep records as specified in § 63.104(f)(3) instead of the heat exchange system records specified in paragraphs (c)(1)(ii) and (6) of this section.

(d) ***Semiannual compliance reports.*** You must submit semiannual compliance reports that contain the information specified in paragraphs (d)(1) through (12) of this section, as applicable. All reports must contain the company name and address (including county), as well as the beginning and ending dates of the reporting period. For periods where no events described by paragraphs (d)(1) through (12) of this section occur, a statement must be included in the report pursuant to § 63.10(e)(3)(v). Beginning on April 1, 2029, or once the report template for this subpart has been available on the CEDRI website for one year, whichever date is later, submit all subsequent reports using the appropriate electronic report template on the CEDRI website (*https://www.epa.gov/electronic-reporting-air-emissions/cedri*) for this subpart and following the procedure specified in § 63.9(k). The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated State agency or other authority has approved a different schedule for submission of reports, the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.

(1) ***Deviations.*** Before April 1, 2029 you must clearly identify any deviation from the requirements of this subpart. Beginning on April 1, 2029, for each deviation, you must report the start date, start time, duration in hours, cause, a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, actions taken to minimize emissions, and any corrective action taken to return the affected unit to its normal or usual manner of operation.

(2) ***Delay of repair for a large heat exchange system.*** Except as specified in paragraph (d)(11) of this section, you must include the information specified in § 63.104(f)(2) each time you invoke the delay of repair provisions for a heat exchange system with a cooling water flow rate equal to or greater than 8,000 gal/min.

(3) ***Delay of leak repair.*** You must provide the following information for each delay of leak repair beyond 15 days for any process equipment, storage tank, surge control vessel, bottoms receiver, and each delay of leak

repair beyond 45 days for any heat exchange system with a cooling water flow rate less than 8,000 gal/min: information on the date the leak was identified, the reason for the delay in repair, and the date the leak was repaired.

(4) ***Process change.*** You must report each process change that affects a compliance determination and submit a new certification of compliance with the applicable requirements in accordance with the procedures specified in paragraph (b) of this section.

(5) ***Data for the alternative standard.*** If you comply with the alternative standard, as specified in table 2 or 3 to this subpart, report the information required in § 63.1258(b)(5).

(6) ***Overlapping rule requirements.*** Report any changes in the overlapping provisions with which you comply.

(7) ***Reactive and resinous materials.*** Report any transfer of liquids that are reactive or resinous materials, as defined in § 63.11502(b), and not included in the NOCS.

(8) ***Malfunctions.*** If a malfunction occurred during the reporting period, the report must include the number of instances of malfunctions that caused emissions in excess of a standard. For each malfunction that caused emissions in excess of a standard, the report must include a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over the standard, and a description of the method used to estimate the emissions. The report must also include a description of actions you took during a malfunction of an affected source to minimize emissions in accordance with § 63.11495(d), including actions taken to correct a malfunction. On and after April 1, 2029, malfunctions are reported as deviations under paragraph (d)(1) of this section and this paragraph (d)(8) no longer applies.

(9) ***Equipment leaks.*** For each CMPU complying with the provisions of § 63.11495(a)(6), report the information listed in paragraphs (d)(9)(i) through (vi) of this section.

(i) The number of components for which leaks were detected, the total number of components monitored, and the number of components for which leaks were not repaired, identifying the number of those that are determined nonrepairable, and totaled by component type.

(ii) The facts that explain any delay of repairs and, where appropriate, why a CMPU shutdown was technically infeasible.

(iii) For pressure relief devices subject to the requirements in § 63.11495(a)(6)(iv) include the information specified in paragraphs (d)(9)(iii)(A) through (C) of this section.

(A) For pressure relief devices in organic HAP gas or vapor service, pursuant to § 63.165(e)(1), report the instrument readings and dates for all readings of 500 ppm or greater.

(B) For pressure relief devices in organic HAP gas or vapor service, pursuant to § 63.165(e)(2), report the instrument readings and dates of instrument reading conducted.

(C) For pressure relief devices in organic HAP service subject to § 63.165(e)(3), report each pressure release to the atmosphere, including pressure relief device identification name or number, the start date, start time, and duration (in minutes) of the pressure release; an estimate of the mass quantity in pounds of each organic HAP released; the results of any root cause analysis and corrective action analysis completed during the reporting period, including the corrective actions implemented during the reporting period; and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.

(iv) For bypass lines subject to the requirements in § 63.172(j) as specified in § 63.11495(a)(6)(ix), include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.

(v) If applicable, the compliance option selected under § 63.172(n) as specified in § 63.11495(a)(6)(ix).

(vi) If you elect to meet the requirements in § 63.178(b) as specified in § 63.11495(a)(6)(xi), include the information listed in paragraphs (d)(9)(vi)(A) through (E) of this section.

(A) Batch product process equipment train identification;

(B) The number of pressure tests conducted;

(C) The number of pressure tests where the equipment train failed the pressure test;

(D) The facts that explain any delay of repairs; and

(E) The results of all monitoring to determine compliance with § 63.172(f).

(10) ***Bypass lines.*** For bypass lines subject to the requirements § 63.11495(e), report the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in ppmv and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.

(11) ***Heat exchange systems.*** If you are subject to the requirements specified in item 1.c of table 8 to this subpart (for heat exchange systems with a cooling water flow rate greater than or equal to 8,000 gal/min), then you must submit the information specified in § 63.104(f)(2)(vi) instead of the heat exchange system information specified in paragraphs (d)(2) and (3) of this section.

(12) ***Pressure vessels.*** If you are subject to the requirements specified in § 63.11497(e) and obtain an instrument reading greater than 500 ppmv when monitoring a pressure vessel in accordance with § 63.11497(e)(2), report an identification of the pressure vessel and a copy of the records specified in paragraph (c)(4)(vii)(B) of this section.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75758, Dec. 21, 2012; 91 FR 16528, Apr. 1, 2026]

Other Requirements and Information

§ 63.11502 What definitions apply to this subpart?

(a) The following terms used in this subpart have the meaning given them in the CAA, and in subparts A, F, SS, WW, and FFFF of this part, as specified after each term:

Table 1 to Paragraph (a)	
Term	**40 CFR**
Administrator	63.2
Area Source	63.2
Article	372.3
Batch operation	63.2550
Boiler	63.101
Bottoms receiver	63.2550
CAA	63.2
Closed vent system	63.981
Combustion device	63.101

Table 1 to Paragraph (a)	
Commenced	63.2
Compliance date	63.2
Continuous monitoring system	63.2
Continuous operation	63.2550
Control device	63.101
Distillation unit	63.101
Emission standard	63.2
EPA	63.2
Fill or filling	63.101
Floating roof	63.1061
Fuel gas system	63.981
Halogen atoms	63.2550
Halogenated vent stream	63.2550
Hydrogen halide and halogen HAP	63.2550
Hazardous air pollutant	63.2
Heat exchange system	63.101
Incinerator	63.101
In gas/vapor service	63.101
In heavy liquid service	63.101
In light liquid service	63.101
In liquid service	63.101
Isolated intermediate	63.2550
Maintenance wastewater	63.2550
Major source	63.2
Maximum true vapor pressure	63.101
Oil-water separator or organic-water separator	63.101
Operating permit	63.101
Owner or operator	63.2
Performance test	63.2
Pressure release	63.101
Pressure relief device or valve	63.101
Pressure vessel	63.101
Process condenser	63.2550
Process heater	63.101
Process tank	63.2550
Process wastewater	63.101
Reactor	63.101

Table 1 to Paragraph (a)	
Responsible official	63.2
State	63.2
Supplemental gases	63.2550
Surge control vessel	63.2550
Test method	63.2
Unit operation	63.101

(b) All other terms used in this subpart shall have the meaning given them in this section. If a term is defined in the CAA, or in subpart A, F, SS, WW, or FFFF of this part, and in this section, the term has the meaning given in this section for purposes of this subpart.

Ancillary activities means boilers, incinerators, and process heaters not used to comply with the emission standards in §§ 63.11495 through 63.11500, chillers and other refrigeration systems, and other equipment and activities that are not directly involved (i.e., they operate within a closed system and materials are not combined with process fluids) in the processing of raw materials or the manufacturing of a product or intermediates used in the production of the product.

Batch process vent means a vent from a CMPU or vents from multiple CMPUs within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Batch process vents include vents from batch operations and vents with intermittent flow from continuous operations that are not combined with any stream that originated as a continuous gas stream from the same continuousprocess. Examples of batch process vents include, but are not limited to, vents on condensers used for product recovery, reactors, filters, centrifuges, and process tanks. The following are not batch process vents for the purposes of this subpart:

(1) Continuous process vents;

(2) Bottoms receivers;

(3) Surge control vessels;

(4) Gaseous streams routed to a fuel gas system(s);

(5) A gas stream routed to other processes for reaction or other use in another process (i.e., for chemical value as a product, isolated intermediate, byproduct, or coproduct, or for heat value).

(6) Vents on storage tanks or wastewater systems;

(7) Drums, pails, and totes; and

(8) Emission streams from emission episodes that are undiluted and uncontrolled containing less than 50 ppmv HAP are not part of any batch process vent. The HAP concentration may be determined using any of the following: process knowledge, an engineering assessment, or test data.

Byproduct means a chemical (liquid, gas, or solid) that is produced coincidentally during the production of the product.

Chemical manufacturing process means all equipment which collectively functions to produce a product or isolated intermediate. A process includes, but is not limited to any, all, or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to produce a product or isolated intermediate. A process is also defined by the following:

(1) All cleaning operations;

(2) Each nondedicated solvent recovery operation is considered a single process;

(3) Each nondedicated formulation operation is considered a single process;

(4) Quality assurance/quality control laboratories are not considered part of any process;

(5) Ancillary activities are not considered a process or part of any process; and

(6) The end of a process that produces a solid material is either up to and including the dryer or extruder, or for a polymer production process without a dryer or extruder, it is up to and including the die plate or solid-state reactor, except in two cases. If the dryer, extruder, die plate, or solid-state reactor is followed by an operation that is designed and operated to remove HAP solvent or residual monomer from the solid, then the solvent removal operation is the last step in the process. If the dried solid is diluted or mixed with a HAP-based solvent, then the solvent removal operation is the last step in the process.

Continuous process vent means a “process vent” as defined in § 63.101 except:

(i) The reference in § 63.107(e) to a chemical manufacturing process unit that meets the criteria of § 63.100(b) means a CMPU that meets the criteria of § 63.11494(a) and (b);

(ii) The reference in § 63.107(h)(2) to subpart H means § 63.11495(a)(3) through (6) for the purposes of this subpart;

(iii) The reference in § 63.107(h)(4) to § 63.113 means tables 2 and 3 to this subpart;

(iv) The reference in § 63.107(h)(7) to § 63.119 means Table 5 to this subpart, and the reference to § 63.126 does not apply for the purposes of this subpart;

(v) The second sentence in the definition of “process vent” in § 63.101 does not apply for the purposes of this subpart;

(vi) The references to an “air oxidation reactor, distillation unit, or reactor” in § 63.107 means any continuous operation for the purposes of this subpart;

(vii) Section § 63.107(h)(8) does not apply for the purposes of this subpart; and

(viii) A separate determination is required for the emissions from each CMPU, even if emission streams from two or more CMPU are combined prior to discharge to the atmosphere or to a control device.

(ix) On and after April 1, 2029, § 63.107(h)(9) no longer applies.

(x) On and after April 1, 2028, § 63.107(i) no longer applies. Instead, a process vent is the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream would meet the characteristics specified in § 63.107(b) through (g), but, for purposes of avoiding applicability, has been deliberately interrupted, temporarily liquefied, routed through any item of equipment for no process purpose, or disposed of in a control device that does not meet the criteria in table 3 of this subpart.

Co-Product means a chemical that is produced during the production of another chemical, both for their intended production.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source fails to meet any requirement or obligation established by this subpart, including, but not limited to any emissions limitation or management practice; or fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

Engineering assessment means, but is not limited to, the following:

(1) Previous test results provided the tests are representative of current operating practices at the process unit.

(2) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(3) Maximum flow rate, TOC emission rate, organic HAP emission rate, metal HAP emission rate, or net heating value limit specified or implied within a permit limit applicable to the process vent.

(4) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(i) Use of material balances based on process stoichiometry to estimate maximum organic HAP or metal HAP concentrations;

(ii) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities;

(iii) Estimation of TOC, organic HAP, or metal HAP concentrations based on saturation conditions; or

(iv) Estimation of maximum expected net heating value based on the vent stream concentration of each organic compound or, alternatively, as if all TOC in the vent stream were the compound with the highest heating value.

(5) All data, assumptions, and procedures used in the engineering assessment shall be documented.

Equipment means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in or associated with a CMPU.

Family of materials means a grouping of materials that have the same basic composition or the same basic end use or functionality; are produced using the same basic feedstocks, the same manufacturing equipment configuration and in the same sequence of steps; and whose production results in emissions of the same Table 1 HAP at approximately the same rate per pound of product produced. Examples of families of materials include multiple grades of same product or different variations of a product (e.g., blue, black and red resins).

Feedstock means any raw material, reactant, solvent, additive, or other material introduced to a CMPU.

Hazardous waste treatment, as used in the wastewater requirements, means treatment in any of the following units:

(1) A hazardous waste incinerator for which you have been issued a final permit under 40 CFR part 270 and comply with the requirements of 40 CFR part 264, subpart O, for which you have certified compliance with the interim status requirements of 40 CFR part 265, subpart O, or for which you have submitted a Notification of Compliance under 40 CFR 63.1207(j) and comply with the requirements of 40 CFR part 63, subpart EEE at all times (including times when non-hazardous waste is being burned);

(2) A process heater or boiler for which you have been issued a final permit under 40 CFR part 270 and comply with the requirements of 40 CFR part 266, subpart H, for which you have certified compliance with the interim status requirements of 40 CFR part 266, subpart H, or for which you have submitted a Notification of

Compliance under 40 CFR 63.1207(j) and comply with the requirements of 40 CFR part 63, subpart EEE at all times (including times when non-hazardous waste is being burned); or

(3) An underground injection well for which you have been issued a final permit under 40 CFR part 270 or 40 CFR part 144 and comply with the requirements of 40 CFR part 122.

Inaccessible connector means a connector that is:

(i) Buried;

(ii) Insulated in a manner that prevents access to the connector by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground;

(v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold; or

(vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

In metal HAP service means that a process vessel or piece of equipment either contains or contacts a feedstock, byproduct, or product that contains metal HAP. A process vessel is no longer in metal HAP service after the vessel has been emptied to the extent practicable (*i.e.,* a vessel with liquid left on process vessel walls or as bottom clingage, but not in pools, due to floor irregularity, is considered completely empty) and any cleaning has been completed.

In organic HAP service means, before April 1, 2029, that a process vessel or piece of equipment either contains or contacts a feedstock, byproduct, or product that contains an organic HAP, excluding any organic HAP used in manual cleaning activities. A process vessel is no longer in organic HAP service after the vessel has been emptied to the extent practicable (*i.e.,* a vessel with liquid left on process vessel walls or as bottom clingage, but not in pools, due to floor irregularity, is considered completely empty) and any cleaning has been completed. On and after April 1, 2029, *In organic HAP service,* for a process vessel, means either contains or contacts a feedstock, byproduct, or product that contains an organic HAP, excluding any organic HAP used in manual cleaning activities. A process vessel is no longer in organic HAP service after the vessel has been emptied to the extent practicable (*i.e.,* a vessel with liquid left on process vessel walls or as bottom clingage, but not in pools, due to floor irregularity, is considered completely empty) and any cleaning has been completed. On and after April 1, 2029, *In organic HAP service,* for equipment and heat exchange systems, means that a piece of equipment or heat exchange system either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAPs as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service. For purposes of the definition of “heat exchange system” in § 63.101(b), the term “equipment” in § 63.180(d) includes heat exchange systems.

In VOC service means that a process vessel or piece of equipment either contains or contacts a fluid that contains VOC.

Metal HAP means the compounds containing metals listed as HAP in section 112(b) of the CAA.

Metal HAP process vent means, before April 1, 2029, the point of discharge to the atmosphere (or inlet to a control device, if any) of a metal HAP-containing gas stream from any CMPU at an affected source containing at least 50 ppmv metal HAP. The metal HAP concentration may be determined using any of the following: process knowledge, an engineering assessment, or test data. On and after April 1, 2029, *Metal HAP process vent* means the point of discharge to the atmosphere (or inlet to a control device, if any) of a metal HAP-containing gas

stream from any CMPU at an affected source containing metal HAP. The metal HAP concentration may be determined using any of the following: process knowledge, an engineering assessment, or test data.

Organic HAP means any organic HAP listed in section 112(b) of the CAA. For the purposes of requirements in this subpart VVVVVV, hydrazine is to be considered an organic HAP.

Point of determination means “point of determination” as defined in § 63.101, except:

(i) The reference to table 8 or 9 compounds means table 9 to subpart G of this part or table 7 to this subpart compounds;

(ii) The reference to “as determined in § 63.144” does not apply for the purposes of this subpart; and

(iii) The point of determination is made at the point where the stream exits the CMPU. If a recovery device is used, the point of determination is after the last recovery device.

Process vessel means each vessel, except hand-held containers, used in the processing of raw materials to chemical products. Examples include, but are not limited to centrifuges, mixing vessels, and process tanks.

Product means a compound or chemical which is manufactured as the intended product of the CMPU. Products include co-products. By-products, impurities, wastes, and trace contaminants are not considered products.

Reactive material means energetics, organic peroxides, and unstable chemicals such as chemicals that react violently with water and chemicals that vigorously polymerize, decompose, or become self-reactive under conditions of pressure or temperature.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering organic chemicals or metal-containing chemicals for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units.

Resinous material means a viscous, high-boiling point material resembling pitch or tar, such as plastic resin, that sticks to or hardens in the fill pipe under normal transfer conditions.

Shutdown, for a unit operation with a continuous process vent, means the cessation of the unit operation for any purpose. Shutdown begins with the initiation of steps as described in a written standard operating procedures (SOP) or shutdown plan to cease normal/stable operation (e.g., reducing or immediately stopping feed).

Startup, for a unit operation with a continuous process vent, means the setting in operation of the unit for any purpose. The period of startup ends upon completion of the transient, non-equilibrium step at the time operating conditions reach steady state for operating parameters such as temperature, pressure, composition, feed rate, and production rate. Periods of startup described by SOP manuals at the affected source may be used to determine the period of startup.

Storage tank means a tank or other vessel that is used to store liquids that contain organic HAP and that are part of a CMPU subject to this subpart VVVVVV. The following are not considered storage tanks for the purposes of this subpart:

(i) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(ii) [Reserved]

(iii) Process tanks;

(iv) Tanks storing organic liquids containing HAP only as impurities;

(v) Surge control vessels;

(vi) Bottoms receivers; and

(vii) Wastewater storage tanks.

Transfer operations means all product loading into tank trucks and rail cars of liquid containing organic HAP from a transfer rack. Transfer operations do not include the loading to other types of containers such as cans, drums, and totes.

Transfer rack means the system used to load organic liquids into tank trucks and railcars at a single geographic site. It includes all loading arms, pumps, meters, shutoff valves, relief valves, and other piping and equipment necessary for the transfer operation. Transfer equipment that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate transfer racks.

Uncontrolled emissions means organic HAP process vent emissions or metal HAP process vent emissions, as applicable, at the outlet of the last recovery device, if any, and prior to any control device. In the absence of both recovery devices and control devices, uncontrolled emissions are the emissions discharged to the atmosphere.

Wastewater means water that is discarded from a CMPU or control device and that contains at least 5 ppmw of any HAP listed in table 9 to subpart G of this part and has an annual average flow rate of 0.02 liters per minute. Wastewater means both process wastewater and maintenance wastewater that is discarded from a CMPU or control device. The following are not considered wastewater for the purposes of this subpart:

(i) Stormwater from segregated sewers;

(ii) Water from fire-fighting and deluge systems, including testing of such systems;

(iii) Spills;

(iv) Water from safety showers;

(v) Samples of a size not greater than reasonably necessary for the method of analysis that is used;

(vi) Equipment leaks;

(vii) Wastewater drips from procedures such as disconnecting hoses after cleaning lines; and

(viii) Noncontact cooling water.

Wastewater stream means a single point discharge of wastewater from a CMPU or control device.

Wastewater treatment means chemical, biological, and mechanical procedures applied to wastewater to remove or reduce HAP or other chemical constituents.

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75759, Dec. 21, 2012; 91 FR 16532, Apr. 1, 2026]

§ 63.11503 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. EPA or a delegated authority such as a State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or tribal agency pursuant to 40 CFR part 63, subpart E, then that Agency has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency within your State.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the approval authorities contained in paragraphs (b)(1) through (5) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the state, local, or Tribal agency.

(1) Approval of an alternative non-opacity emissions standard under § 63.6(g).

(2) Approval of a major change to a test method. A “major change to test method” is defined in § 63.90.

(3) Approval of a major change to monitoring under § 63.8(f). A “major change to monitoring” is defined in § 63.90.

(4) Approval of a major change to recordkeeping/reporting under § 63.10(f). A “major change to recordkeeping/reporting” is defined in § 63.90.

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[74 FR 56041, Oct. 29, 2009, as amended at 91 FR 16533, Apr. 1, 2026]

Table 1 to Subpart VVVVVV of Part 63—Hazardous Air Pollutants Used To Determine Applicability of Chemical Manufacturing Operations

As required in § 63.11494(a), chemical manufacturing operations that process, use, or produce the HAP shown in the following table are subject to subpart VVVVVV.

Type of HAP	Chemical name	CAS No.
1. Organic compounds	a. 1,3-butadiene	106990
	b. 1,3-dichloropropene	542756
	c. Acetaldehyde	75070
	d. Chloroform	67663
	e. Ethylene dichloride	107062
	f. Hexachlorobenzene	118741
	g. Methylene chloride	75092
	h. Quinoline	91225
2. Metal compounds	a. Arsenic compounds	
	b. Cadmium compounds	
	c. Chromium compounds	
	d. Lead compounds	
	e. Manganese compounds	
	f. Nickel compounds	
3. Others	a. Hydrazine	302012

Table 2 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Batch Process Vents

As required in § 63.11496, you must comply with the requirements for batch process vents as shown in the following table.

For * * *	You must * * *	Except * * *
1. Batch process vents in a CMPU at an existing source for which the total organic HAP emissions are equal to or greater than 10,000 lb/yr	a. Reduce collective uncontrolled total organic HAP emissions from the sum of all batch process vents by ≥85 percent by weight or to ≤20 ppmv by routing emissions from a sufficient number of the batch process vents through a closed vent system to any combination of control devices (except a flare) in accordance with the requirements of § 63.982(c) and the requirements referenced therein; or	i. Compliance may be based on either total organic HAP or total organic carbon (TOC); and ii. As specified in § 63.11496(g).
	b. Route emissions from batch process vents containing at least 85 percent of the uncontrolled total organic HAP through a closed-vent system to a flare (except that a flare may not be used to control halogenated vent streams) in accordance with the requirements of § 63.982(b) and the requirements referenced therein; or	i. Not applicable.
	c. Comply with the alternative standard specified in § 63.2505 and the requirements referenced therein; or	i. As specified in § 63.11496(e) of this subpart.
	d. Comply with combinations of the requirements in Items a., b., and c. of this Table for different groups of batch process vents	i. The information specified above for Items a., b., and c., as applicable.
2. Batch process vents in a CMPU at a new source for which the total organic HAP emissions are equal to or greater than 10,000 lb/yr	a. Comply with any of the emission limits in Items 1.a through 1.d of this Table, except 90 percent reduction applies instead of 85 percent reduction in Item 1.a, and 90 percent of the emissions must be routed to a flare instead of 85 percent in Item 1.b	i. The information specified above for Items 1.a., 1.b., 1.c., and 1.d, as applicable.
3. Halogenated batch process vent stream at a new or existing source that is controlled through combustion	a. Comply with the requirements for halogen scrubbers in § 63.11496(d).	

Table 3 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Continuous Process Vents

[As required in § 63.11496, you must comply with the requirements for continuous process vents as shown in the following table]

For . . .	You must . . .	Except . . .
1. Each continuous process vent with a TRE ≤1.0	a. Reduce emissions of total organic HAP by ≥95 percent by weight (≥85 percent by weight for periods of startup or shutdown) or to ≤20 ppmv by routing emissions through a closed vent system to any combination of control devices (except a flare) in accordance with the requirements of § 63.982(c) and the requirements referenced therein; or	i. Compliance may be based on either total organic HAP or TOC; and ii. As specified in § 63.11496(g).
	b. Reduce emissions of total organic HAP by routing all emissions through a closed-vent system to a flare (except that a flare may not be used to control halogenated vent streams) in accordance with the requirements of § 63.982(b) and the requirements referenced therein, or	i. Not applicable.
	c. Comply with the alternative standard specified in § 63.2505 and the requirements referenced therein	i. As specified in § 63.11496(e).
2. Halogenated vent stream that is controlled through combustion	a. Comply with the requirements for halogen scrubbers in § 63.11496(d).	
3. Each continuous process vent with a TRE >1.0 but ≤4.0	a. Comply with the requirements of § 63.982(e) and the requirements specified therein if a recovery device, as defined in § 63.11502, is used to maintain a TRE >1.0 but ≤4.0.	

[77 FR 75760, Dec. 21, 2012, as amended at 91 FR 16534, Apr. 1, 2026]

Table 4 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Metal HAP Process Vents

As required in § 63.11496(f), you must comply with the requirements for metal HAP process vents as shown in the following table.

Table 4 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Metal HAP Process Vents

[As required in § 63.11496(f), you must comply with the requirements for metal HAP process vents as shown in the following table.]

For * * *	You must * * *	Except * * *
Each CMPU with total metal HAP emissions ≥400 lb/yr	Reduce collective uncontrolled emissions of total metal HAP emissions by ≥95 percent by weight by routing emissions from a sufficient number of the metal HAP process vents through a closed vent system to any combination of control devices, according to the requirements of § 63.11496(f)(3), (4), or (5)	Not applicable.

[91 FR 16534, Apr. 1, 2026]

Table 5 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Storage Tanks

As required in § 63.11497, you must comply with the requirements for storage tanks as shown in the following table.

For each * * *	You must * * *	Except * * *
1. Storage tank with a design capacity ≥40,000 gallons, storing liquid that contains organic HAP listed in table 1 to this subpart, and for which the maximum true vapor pressure (MTVP) of total organic HAP at the storage temperature is ≥5.2 kPa and <76.6 kPa	a. Comply with the requirements of subpart WW of this part;	i. All required seals must be installed by the compliance date in § 63.11494.
	b. Reduce total organic HAP emissions by ≥95 percent by weight by operating and maintaining a closed-vent system and control device (other than a flare) in accordance with § 63.982(c); or	i. Compliance may be based on either total organic HAP or TOC; ii. When the term storage vessel is used in subpart SS of this part, the term storage tank, surge control vessel, or bottoms receiver, as defined in § 63.11502 of this subpart, applies; and iii. The requirements do not apply during periods of planned routine maintenance of the control device, as specified in § 63.11497(b).
	c. Reduce total HAP emissions by operating and maintaining a closed-vent system and a flare in accordance with § 63.982(b); or	i. The requirements do not apply during periods of planned routine maintenance of the flare, as specified in § 63.11497(b); and ii. When the term storage vessel is used in subpart SS of this part, it means storage tank, surge control vessel, or bottoms receiver, as defined in § 63.11502 of this subpart.
	d. Vapor balance in accordance with § 63.2470(e); or	i. To comply with § 63.1253(f)(6)(i), the owner or operator of an offsite cleaning or reloading facility must comply with § 63.11494 through § 63.11502 instead of complying with § 63.1253(f)(7)(ii), except as specified in item 1.d.ii and 1.d.iii of this table. ii. The reporting requirements in § 63.11501 do not apply to the owner or operator of the offsite cleaning or reloading facility. iii. As an alternative to complying with the monitoring, recordkeeping, and reporting provisions in §§ 63.11494 through 63.11502, the owner or operator of an offsite cleaning or reloading facility may comply as specified in § 63.11500 with any other subpart of this part which has monitoring, recordkeeping, and reporting provisions as specified in § 63.11500.

For each * * *	You must * * *	Except * * *
	e. Route emissions to a fuel gas system or process in accordance with the requirements in § 63.982(d) and the requirements referenced therein	i. When the term storage vessel is used in subpart SS of this part, it means storage tank, surge control vessel, or bottoms receiver, as defined in § 63.11502.
2. Storage tank with a design capacity ≥20,000 gallons and <40,000 gallons, storing liquid that contains organic HAP listed in Table 1 to this subpart, and for which the MTVP of total organic HAP at the storage temperature is ≥27.6 kPa and <76.6 kPa	a. Comply with one of the options in Item 1 of this table	i. The information specified above for Items 1.a., 1.b., 1.c., 1.d, and 1.e, as applicable.
3. Storage tank with a design capacity ≥20,000 gallons, storing liquid that contains organic HAP listed in Table 1 to this subpart, and for which the MTVP of total organic HAP at the storage temperature is ≥76.6 kPa	a. Comply with option b, c, d, or e in Item 1 of this table	i. The information specified above for Items 1.b., 1.c., 1.d, and 1.e, as applicable.
4. Storage tank described by Item 1, 2, or 3 in this table and emitting a halogenated vent stream that is controlled with a combustion device	a. Reduce emissions of hydrogen halide and halogen HAP by ≥95 percent by weight, or to ≤0.45 kg/hr, or to ≤20 ppmv by using a halogen reduction device after the combustion device according to the requirements in § 63.11496(d); or	
	b. Reduce the halogen atom mass emission rate to ≤0.45 kg/hr or to ≤20 ppmv by using a halogen reduction device before the combustion device according to the requirements in § 63.11496(d).	
5. Pressure vessel with a design capacity greater than or equal to 20,000 gallons	a. Beginning no later than the compliance dates specified in § 63.11494(i), comply with the requirements specified in § 63.11497(e)	

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75760, Dec. 21, 2012; 91 FR 16534, Apr. 1, 2026]

Table 6 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Wastewater Systems

[As required in § 63.11498, you must comply with the requirements for wastewater systems as shown in the following table]		
For each . . .	**You must . . .**	**And you must . . .**
1. Wastewater stream	a. Discharge to onsite or offsite wastewater treatment or hazardous waste treatment	i. Maintain records identifying each wastewater stream and documenting the type of treatment that it receives. Multiple wastewater streams with similar characteristics and from the same type of activity in a CMPU may be grouped together for recordkeeping purposes.
2. Wastewater stream containing partially soluble HAP at a concentration ≥10,000 ppmw and separate organic and water phases	a. Use a decanter, steam stripper, thin film evaporator, or distillation unit to separate the water phase from the organic phase(s); or	i. For the water phase, comply with the requirements in Item 1 of this table, and ii. For the organic phase(s), recycle to a process, use as fuel, or dispose as hazardous waste either onsite or offsite, and iii. Keep records of the wastewater streams subject to this requirement and the disposition of the organic phase(s).
	b. Hard pipe the entire wastewater stream to onsite treatment as a hazardous waste, or hard pipe the entire wastewater stream to a point of transfer to onsite or offsite hazardous waste treatment.	i. Keep records of the wastewater streams subject to this requirement and the disposition of the wastewater streams.

[77 FR 75761, Dec. 21, 2012]

Table 7 to Subpart VVVVVV of Part 63—Partially Soluble HAP

As required in § 63.11498(a), you must comply with emission limits for wastewater streams that contain the partially soluble HAP listed in the following table.

Partially soluble HAP name	**CAS No.**
1. 1,1,1-Trichloroethane (methyl chloroform)	71556
2. 1,1,2,2-Tetrachloroethane	79345
3. 1,1,2-Trichloroethane	79005
4. 1,1-Dichloroethylene (vinylidene chloride)	75354
5. 1,2-Dibromoethane	106934
6. 1,2-Dichloroethane (ethylene dichloride)	107062
7. 1,2-Dichloropropane	78875
8. 1,3-Dichloropropene	542756
9. 2,4,5-Trichlorophenol	95954
10. 1,4-Dichlorobenzene	106467
11. 2-Nitropropane	79469
12. 4-Methyl-2-pentanone (MIBK)	108101
13. Acetaldehyde	75070

Partially soluble HAP name	**CAS No.**
14. Acrolein	107028
15. Acrylonitrile	107131
16. Allyl chloride	107051
17. Benzene	71432
18. Benzyl chloride	100447
19. Biphenyl	92524
20. Bromoform (tribromomethane)	75252
21. Bromomethane	74839
22. Butadiene	106990
23. Carbon disulfide	75150
24. Chlorobenzene	108907
25. Chloroethane (ethyl chloride)	75003
26. Chloroform	67663
27. Chloromethane	74873
28. Chloroprene	126998
29. Cumene	98828
30. Dichloroethyl ether	111444
31. Dinitrophenol	51285
32. Epichlorohydrin	106898
33. Ethyl acrylate	140885
34. Ethylbenzene	100414
35. Ethylene oxide	75218
36. Ethylidene dichloride	75343
37. Hexachlorobenzene	118741
38. Hexachlorobutadiene	87683
39. Hexachloroethane	67721
40. Methyl methacrylate	80626
41. Methyl-t-butyl ether	1634044
42. Methylene chloride	75092
43. N-hexane	110543
44. N,N-dimethylaniline	121697
45. Naphthalene	91203
46. Phosgene	75445
47. Propionaldehyde	123386
48. Propylene oxide	75569
49. Styrene	100425
50. Tetrachloroethylene (per- chloroethylene)	127184

Partially soluble HAP name	CAS No.
51. Tetrachloromethane (carbon tetrachloride)	56235
52. Toluene	108883
53. Trichlorobenzene (1,2,4-)	120821
54. Trichloroethylene	79016
55. Trimethylpentane	540841
56. Vinyl acetate	108054
57. Vinyl chloride	75014
58. Xylene (m)	108383
59. Xylene (o)	95476
60. Xylene (p)	106423

Table 8 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Heat Exchange Systems

Table 8 to Subpart VVVVVV of Part 63—Emission Limits and Compliance Requirements for Heat Exchange Systems

[As required in § 63.11499, you must comply with the requirements for heat exchange systems as shown in the following table.]

For . . .	You must . . .	Except . . .
1. Each heat exchange system with a cooling water flow rate ≥8,000 gal/min and not meeting one or more of the conditions in § 63.104(a)(1) through (4)	a. Except as specified in item 1.c of this table, comply with the monitoring requirements in § 63.104(c), the leak repair requirements in § 63.104(d) and (e), and the recordkeeping and reporting requirements in § 63.104(f); or	i. The reference to monthly monitoring for the first 6 months in § 63.104(b)(1) and (c)(1)(iii) does not apply. Monitoring shall be no less frequent than quarterly; ii. The reference in § 63.104(f)(1) to record retention requirements in § 63.103(c)(1) does not apply. Records must be retained as specified in §§ 63.10(b)(1) and 63.11501(c); and iii. The reference in § 63.104(f)(2) to "the next semi-annual periodic report required by § 63.152(c)" means the next semiannual compliance report required by § 63.11501(d).
	b. Except as specified in item 1.c of this table, comply with the heat exchange system requirements in § 63.104(b) and the requirements referenced therein	i. Not applicable.
	c. Beginning no later than the compliance dates specified in § 63.11494(i), the exemption conditions specified in § 63.104(a)(3) and (4), and items 1.a and 1.b of this table no longer apply. Instead, comply with the requirements in § 63.104(f) through (j) and (l)	i. As specified in § 63.11499(d).

[91 FR 16535, Apr. 1, 2026]

Table 9 to Subpart VVVVVV of Part 63—Applicability of General Provisions to Subpart VVVVVV

As required in § 63.11501(a), you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.

Table 9 to Subpart VVVVVV of Part 63—Applicability of General Provisions to Subpart VVVVVV [As required in § 63.11501(a), you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.]			
Citation	**Subject**	**Applies to this subpart?**	**Explanation**
63.1(a)(1), (a)(2), (a)(3), (a)(4), (a)(6), (a)(10)-(a)(12) (b)(1), (b)(3), (c)(1), (c)(2), (c)(5), (e)	Applicability	Yes	
63.1(a)(5), (a)(7)-(a)(9), (b)(2), (c)(3), (c)(4), (d)	Reserved	No	
63.2	Definitions	Yes	
63.3	Units and Abbreviations	Yes	
63.4	Prohibited Activities and Circumvention	Yes	
63.5	Preconstruction Review and Notification Requirements	Yes	
63.6(a), (b)(1)-(b)(5), (b)(7), (c)(1), (c)(2), (c)(5), (e)(1)(iii), (g), (i), (j)	Compliance with Standards and Maintenance Requirements	Yes	
63.6(b)(6), (c)(3), (c)(4), (d), (e)(2)	Reserved	No	
63.6(e)(1)(i) and (ii), (e)(3), and (f)(1)	SSM Requirements	No	See § 63.11495(d) for general duty requirement. The standards in this subpart apply at all times.
63.6(f)	Compliance with Nonopacity Emission Standards	Yes	
63.6(h)	Compliance with Opacity and Visible Emission Standards	No	This subpart does not include opacity or visible emissions (VE) standards or require a continuous opacity monitoring system (COMS).
63.7(a)(1), (a)(3), (a)(4), (c), (e)(4), and (f)-(h)	Performance Testing Requirements	Yes	Except this subpart specifies how and when the performance test results are reported.
63.7(a)(2), (b), (d), (e)(2)-(e)(3)	Performance Testing Schedule, Notification of Performance Test, Performance Testing Facilities, and Conduct of Performance Tests	Yes/No	Requirements apply if conducting test for metal HAP control; requirements in §§ 63.997(c)(1), (d), (e), and 63.999(a)(1) apply, as referenced in § 63.11496(g), if conducting test for organic HAP or hydrogen halide and halogen HAP control device.

Table 9 to Subpart VVVVVV of Part 63—Applicability of General Provisions to Subpart VVVVVV [As required in § 63.11501(a), you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.]			
63.7(e)(1)	Performance Testing	No	See § 63.11496(f)(3)(ii) if conducting a test for metal HAP emissions. See §§ 63.11496(g) and 63.997(e)(1) if conducting a test for continuous process vents or for hydrogen halide and halogen emissions. See §§ 63.11496(g) and 63.2460(c) if conducting a test for batch process vents.
63.8(a)(1), (b), (c)(1)(ii), (c)(2)-(c)(3), (f)(1)-(5)	Monitoring Requirements	Yes	
63.8(a)(2)	Monitoring Requirements	No	
63.8(a)(3)	Reserved	No	
63.8(a)(4)	Monitoring Requirements	Yes	
63.8(c)(1)(i)	General Duty to Minimize Emissions and CMS Operation	No	
63.8(c)(1)(iii)	Requirement to Develop SSM Plan for CMS	No	
63.8(c)(4)		Yes	Only for CEMS. CPMS requirements in subpart SS of this part are referenced from § 63.11496. Requirements for COMS do not apply because this subpart does not require COMS.
63.8(c)(5)		No	This subpart does not require COMS.
63.8(c)(6)-(c)(8), (d)(1)-(d)(2), (e), (f)(6)		Yes	Requirements apply only if you use a continuous emission monitoring system (CEMS) to demonstrate compliance with the alternative standard in § 63.11496(e). Additionally, this subpart specifies how and when the performance evaluation results are reported.
63.8(d)(3)	Written Procedures for CMS	Yes	Requirement applies except for last sentence, which refers to an SSM plan. SSM plans are not required.
63.8(g)(1)-(g)(4)		Yes	Data reduction requirements apply only if you use CEMS to demonstrate compliance with alternative standard in § 63.11496(e). COMS requirements do not apply. Requirement in § 63.8(g)(2) does not apply because data reduction for CEMS are specified in subpart FFFF of this part.
63.8(g)(5)		No	Data reduction requirements for CEMS are specified in § 63.2450(j)(4), as referenced from § 63.11496. CPMS requirements are specified in subpart SS of this part, as referenced from § 63.11496.
63.9(a), (b)(1), (b)(2), (b)(4), (b)(5), (c), (d), (e), (i)	Notification Requirements	Yes	
63.9(b)(3), (h)(4)	Reserved	No	

Table 9 to Subpart VVVVVV of Part 63—Applicability of General Provisions to Subpart VVVVVV [As required in § 63.11501(a), you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.]			
63.9(f)		No	This subpart does not contain opacity or VE limits.
63.9(g)		Yes	Additional notification requirement applies only if you use CEMS to demonstrate compliance with alternative standard in § 63.11496(e).
63.9(h)(1)-(h)(3), (h)(5)-(h)(6)		Yes	Except as specified in § 63.11501(b) and this subpart does not contain opacity or VE limits.
63.9(j)	Change in Information Already Provided	No	Notification of process changes that affect a compliance determination are required in § 63.11501(d)(4).
63.9(k)	Electronic Submission of Notifications or Reports	Yes	As specified in §§ 63.11496(g)(1)(iv), 63.11497(f)(1)(iv), and 63.11501(b) and (d).
63.10(a)	Recordkeeping Requirements	Yes	
63.10(b)(1)		Yes	
63.10(b)(2)(i)	Recordkeeping of Occurrence and Duration of Startups and Shutdowns	No	See § 63.11501(c)(8) for recordkeeping of occurrence and duration of each startup and shutdown for continuous process vents that are subpart to table 3 to this subpart.
63.10(b)(2)(ii)	Recordkeeping of Malfunctions	No	See § 63.11501(c)(1)(vii) and (viii) for recordkeeping requirements.
63.10(b)(2)(iii)	Maintenance Records	Yes	
63.10(b)(2)(iv) and (v)	Actions Taken to Minimize Emissions During SSM	No	
63.10(b)(2)(vi), (x), (xi), (xiii)		Yes	Apply only if you use CEMS to demonstrate compliance with alternative standard in § 63.11496(e).
63.10(b)(2)(vii)-(b)(2)(ix), (b)(2)(xii), (b)(2)(xiv)		Yes	
63.10(b)(3)		Yes	
63.10(c)(1), (c)(5)-(c)(6), (c)(13)-(c)(14)		Yes	Apply only if you use CEMS to demonstrate compliance with alternative standard in § 63.11496(e).
63.10(c)(7)-(8)	Additional Recordkeeping Requirements for CMS—Identifying Exceedances and Excess Emissions	Yes	
63.10(c)(10)	Recordkeeping Nature and Cause of Malfunctions	No	See § 63.11501(c)(1)(vii) and (viii) for recordkeeping requirements.
63.10(c)(11)	Recording Corrective Actions	No	See § 63.11501(c)(1)(vii) and (viii) for recordkeeping requirements.
63.10(c)(12)		Yes	
63.10(c)(15)	Use of SSM Plan	No	

Table 9 to Subpart VVVVVV of Part 63—Applicability of General Provisions to Subpart VVVVVV [As required in § 63.11501(a), you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.]			
63.10(c)(2)-(c)(4), (c)(9)	Reserved	No	
63.10(d)(1), (d)(4), (f)	Reporting Requirements	Yes	
63.10(d)(2)		No	See §§ 63.11496(g)(1)(iv) and 63.11497(f)(1)(iv) for performance test reporting.
63.10(d)(3)		No	This subpart does not include opacity or VE limits.
63.10(d)(5)	SSM Reports	No	See § 63.11501(d)(1) and (8) for reporting requirements.
63.10(e)(1)-(e)(2)		Yes	Apply only if you use CEMS to demonstrate compliance with alternative standard in § 63.11496(e). Additionally, this subpart specifies how and when the performance evaluation results are reported.
63.10(e)(3)		No	Except as provided in § 63.11501(d).
63.10(e)(4)		No	This subpart does not include opacity or VE limits.
63.11	Control Device Requirements	Yes	
63.12	State Authorities and Delegations	Yes	
63.13	Addresses	Yes	
63.14	Incorporations by Reference	Yes	
63.15	Availability of Information and Confidentiality	Yes	
63.16	Performance Track Provisions	Yes	

[74 FR 56041, Oct. 29, 2009, as amended at 77 FR 75762, Dec. 21, 2012; 91 FR 16536, Apr. 1, 2026]

Attachment E

Federally Enforceable State Operating Permit (FESOP) No: 097-46563-00060

[Downloaded from the eCFR on September 5, 2024]

Electronic Code of Federal Regulations

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Source:69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) ***Affected source.*** An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) ***Existing stationary RICE.***

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) ***New stationary RICE.***

(i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) ***Reconstructed stationary RICE.***

(i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) ***Stationary RICE subject to limited requirements.***

(1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) ***Stationary RICE subject to Regulations under 40 CFR Part 60.*** An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022]

§ 63.6595 When do I have to comply with this subpart?

(a) ***Affected sources.***

(1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) ***Area sources that become major sources.*** If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250

and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013; 89 FR 70515, Aug. 30, 2024]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR

1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(c) [Reserved]

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013, as amended at 85 FR 78463, Dec. 4, 2020; 87 FR 48607, Aug. 10, 2022]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)

(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (Eq.\ 1)$$

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_O = \frac{0.209\ F_d}{F_C} \quad (Eq.\ 2)$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2, as follows:

$$X_{CO2} = \frac{5.9}{F_O} \quad (Eq.\ 3)$$

Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2—15 percent O_2, the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq.\ 4)$$

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO2} = CO_2 correction factor, percent.

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (*e.g.,* operator adjustment, automatic controller adjustment, etc.) or unintentionally (*e.g.,* wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters,

kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

(j) Beginning on February 26, 2025, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedure specified in § 63.9(k). Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (*https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert*) at the time of the test must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or alternate electronic file.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013; 89 FR 70516, Aug. 30, 2024]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO_2 concentration.

(5) Beginning on February 26, 2025, within 60 days after the date of completing each continuous emissions monitoring system (CEMS) performance evaluation (as defined in § 63.2) that includes a relative accuracy test audit (RATA), you must submit the results of the performance evaluation following the procedures specified in § 63.9(k). The results of performance evaluations of CEMS measuring RATA pollutants that are supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the XML schema listed on the EPA's ERT website. The results of performance evaluations of CEMS measuring RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be included as an attachment in the ERT or alternate electronic file.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (*e.g.,* thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

(e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

(1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;

(2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;

(3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;

(4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;

(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;

(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.

(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or

(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of table 2c to this subpart or in items 1 or 4 of table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil and filter in table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil and filter. If any of the limits are exceeded, the engine owner or operator must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil and filter within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of table 2c to this subpart or in items 5, 6, 7, 8, 10, 11, or 13 of table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil and filter in table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil and filter. If any of the limits are exceeded, the engine owner or operator must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil and filter within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013; 89 FR 70516, Aug. 30, 2024]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least three test runs.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii)-(iii) [Reserved]

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an initial notification not later than December 13, 2004, or no later than 120 days after the source becomes subject to this subpart, whichever is later. Beginning on February 26, 2025, submit the notification electronically in portable document format (PDF) consistent with § 63.9(k).

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an initial notification not later than 120 days after you become subject to this subpart. Beginning on February 26, 2025, submit the notification electronically in PDF consistent with § 63.9(k).

(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an initial notification not later than July 16, 2008, or no later than 120 days after the source becomes subject to this subpart, whichever is later. Beginning on February 26, 2025, submit the notification electronically in PDF consistent with § 63.9(k).

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008, and you are required to submit an initial notification, you must submit an initial notification not later than 120 days after you become subject to this subpart. Beginning on February 26, 2025, submit the notification electronically in PDF consistent with § 63.9(k).

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) Before February 26, 2025, for each initial compliance demonstration required in table 5 to this subpart that includes a performance test conducted according to the requirements in table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2). Beginning on February 26, 2025, for each initial compliance demonstration required in table 5 to this subpart that includes a performance test conducted according to the requirements in table 3 to this subpart, you must submit the Notification of Compliance Status, including a summary of the performance test results, in PDF to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), before the close of business on the 60th day following the completion of the performance test following the procedure specified in § 63.9(k), except any Confidential Business Information (CBI) is to be submitted according to paragraphs (h)(2)(i) and (ii) of this section. Do not use CEDRI to submit information you claim as CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information in the report, you must submit a complete file, including information claimed to be CBI, to the EPA following the procedures in paragraphs (h)(2)(i) and (ii) of this section. Clearly mark the part or all of the information that you claim to be CBI. Information not marked as

CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available. You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described earlier in this paragraph (h)(2).

(i) The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address *oaqpscbi@epa.gov,* and as described in paragraph (h)(2) of this section, should include clear CBI markings and be flagged to the attention of the Reciprocating Internal Combustion Engine Sector Lead. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email *oaqpscbi@epa.gov* to request a file transfer link.

(ii) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, North Carolina 27711, Attention Reciprocating Internal Combustion Engine Sector Lead. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in § 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013; 85 FR 73912, Nov. 19, 2020; 89 FR 70516, Aug. 30, 2024]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (8) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the starting and ending date and time, the duration (in hours), and a brief description for each malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(7) Engine site rating in brake HP, year construction of the engine commenced (as defined in § 63.2, where the exact year is not known, provide the best estimate), and type of engine (CI, SI 2SLB, SI 4SLB, or SI 4SRB).

(8) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(9) An engine can be claimed as exempt from reporting coordinates (latitude/longitude) via CEDRI if:

(i) During the reporting period, the engine will be owned by, or operated by or for, an agency of the Federal Government responsible for national defense; and

(ii) The agency determines that disclosing the coordinates to the general public would be a threat to national security.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (8) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time (in hours) of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration (in hours), and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(3) A description of any changes in processes, or controls since the last reporting period.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (8) and (e)(1) through (13) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The start and end date and time and the duration (in hours) that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The start and end date and time and the duration (in hours) that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration (in hours) of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration (in hours) of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration (in hours) of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) [Reserved]

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(13) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any

emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority. Beginning on February 26, 2025, the semiannual and annual compliance report required in table 7 of this subpart must be submitted according to paragraph (i) of this section. Only those elements required under this subpart are required to be submitted according to paragraph (i) of this section.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating in brake HP, year construction of the engine commenced (as defined in § 63.2, where the exact year is not known, provide the best estimate), and type of engine (CI, SI 2SLB, SI 4SLB, or SI 4SRB).

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v)-(vi) [Reserved]

(vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration (in hours), and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) Before February 26, 2025, the annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). However, if the reporting form specific to this subpart

is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13. Beginning on February 26, 2025, the annual report must be submitted according to paragraph (i) of this section.

(i) Beginning on February 26, 2025 for the annual report specified in § 63.6650(h) and February 26, 2025 or one year after the report becomes available in CEDRI, whichever is later for all other semiannual or annual reports, submit all semiannual and annual subsequent compliance reports using the appropriate electronic report template on the CEDRI website (*https://www.epa.gov/electronic-reporting-air-emissions/cedri*) for this subpart and following the procedure specified in § 63.9(k), except any CBI must be submitted according to the procedures in § 63.6645(h). The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports, the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022; 89 FR 70517, Aug. 30, 2024]

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).

(2) Records of the occurrence and duration (in hours) of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purpose specified in § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022; 89 FR 70518, Aug. 30, 2024]

§ 63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).

(6) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[69 FR 33506, June 15, 2004, as amended at 89 FR 70518, Aug. 30, 2024]

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.,* as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

(4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (*e.g.* biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_X) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_X, CO, and volatile organic compounds (VOC) into CO_2, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.,* remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013; 87 FR 48608, Aug. 10, 2022]

Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2 and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F.[1]
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2 and not using NSCR.	
[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.	

[78 FR 6706, Jan. 30, 2013]

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O_2. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O_2 until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O_2	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	

	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O_2	
[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.		

[75 FR 9680, Mar. 3, 2010]

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

For each . . .	**You must meet the following operating limitation, except during periods of startup . . .**
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	
existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	
[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.	

[78 FR 6707, Jan. 30, 2013]

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE[1]	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first[2]. b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary;	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[3]
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary[3]	
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first[2].	
	b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary[3]	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O_2	
4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
6. Emergency stationary SI RICE and black start stationary SI RICE.[1]	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[2]	
	b. Inspect spark plugs every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary[3]	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[2]	
	b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
	c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary[3]	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[2]	
	b. Inspect spark plugs every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary[3]	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O_2	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O_2	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O_2	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O_2	
[1] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.		
[2] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.		
[3] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.		

[89 FR 70518, Aug. 30, 2024]

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1] b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary;	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O_2; or	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	b. Reduce CO emissions by 70 percent or more	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more	
4. Emergency stationary CI RICE and black start stationary CI RICE.[2]	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1]	
	b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.[2]	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1] b. Inspect spark plugs every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1]	
	b. Inspect spark plugs every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1]	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;[1] b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	

[1] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
[2] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.		

[89 FR 70520, Aug. 30, 2024]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually.[1]
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually.[1]
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually.[1]
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.
[1] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.		

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. Reduce CO emissions	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and		(a) For CO, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at `3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)[13] (heated probe not necessary)	(b) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		iii. Measure the CO at the inlet and the outlet of the control device; and	(2) ASTM D6522-00 (Reapproved 2005)[123] (heated probe not necessary) or method 10 of 40 CFR part 60, appendix A-4	(c) The CO concentration must be at 15 percent O_2, dry basis.
		iv. Measure moisture content at the inlet and outlet of the control device as needed to determine CO and O_2 concentrations on a dry basis	(3) Method 4 of 40 CFR part 60, appendix A-3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03[13]	(d) Measurements to determine moisture content must be made at the same time and location as the measurements for CO concentration.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
2. 4SRB stationary RICE	a. Reduce formaldehyde or THC emissions	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and		(a) For formaldehyde, THC, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line (`3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at `3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A.
		ii. Measure O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)[13] (heated probe not necessary)	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device as needed to determine formaldehyde or THC and O_2 concentrations on a dry basis; and	(2) Method 4 of 40 CFR part 60, appendix A-3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03[13]	(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[13] provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(d) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(4) (1) Method 25A, reported as propane, of 40 CFR part 60, appendix A-7	(e) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary RICE; and		(a) For formaldehyde, CO, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line (`3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at `3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A. If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)[13] (heated probe not necessary)	(b) Measurements to determine O_2 concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location as needed to determine formaldehyde or CO and O_2 concentrations on a dry basis; and	(2) Method 4 of 40 CFR part 60, appendix A-3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03[13]	(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[13] provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(d) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. Measure CO at the exhaust of the stationary RICE	(4) Method 10 of 40 CFR part 60, appendix A-4, ASTM D6522-00 (2005),[13] method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03[13]	(e) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
[1] You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).				
[2] You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.				
[3] Incorporated by reference, see § 63.14.				

[88 FR 18413, Mar. 29, 2023]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved[a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved[a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.[a]
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit[a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit[a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
[a] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.		

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) and (i) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) and (i) for engines that are limited use stationary RICE subject to numerical emission limitations. i. Semiannually according to the requirements in § 63.6650(b) and (i).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4)	i. Semiannually according to the requirements in § 63.6650(b) and (i).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) and (i).
4. Emergency stationary RICE that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. Annually according to the requirements in § 63.6650(h)(2)-(3) and (i).

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Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes	
§ 63.4	Prohibited activities and circumvention	Yes	
§ 63.5	Construction and reconstruction	Yes	
§ 63.6(a)	Applicability	Yes	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes	
§ 63.6(b)(5)	Notification	Yes	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(f)(1)	Applicability of standards	No	
§ 63.6(f)(2)	Methods for determining compliance	Yes	
§ 63.6(f)(3)	Finding of compliance	Yes	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes	
§ 63.6(j)	Presidential compliance exemption	Yes	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.
§ 63.7(d)	Testing facilities	Yes	
§ 63.7(e)(1)	Conditions for conducting performance tests	No	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes	
§ 63.7(f)	Alternative test method provisions	Yes	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes	
§ 63.7(h)	Waiver of tests	Yes	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No	
§ 63.8(b)(1)	Monitoring	Yes	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.8(c)(1)	Monitoring system operation and maintenance	Yes	
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§ 63.8(c)(2)-(3)	Monitoring system installation	Yes	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which applies to COMS.
			Except that § 63.8(e) only applies as specified in § 63.6645.
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved.
			Except that § 63.9(b) only applies as specified in § 63.6645.
§ 63.9(c)	Request for compliance extension	Yes	Except that § 63.9(c) only applies as specified in § 63.6645.
§ 63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use. Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved.
			Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes	
§ 63.9(j)	Change in previous information	Yes	
§ 63.9(k)	Electronic reporting procedures	Yes	Only as specified in §§ 63.9(j), 63.6620, 63.6625, 63.6645, and 63.6650.
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No	
§ 63.10(b)(2)(vi)-(xi)	Records	Yes	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes	
§ 63.10(b)(3)	Records of applicability determination	Yes	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes	
§ 63.10(d)(2)	Report of performance test results	Yes	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No	
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	No	Excess emissions and exceedance reporting is specified in § 63.6650.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes	
§ 63.11	Flares	No	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.12	State authority and delegations	Yes	
§ 63.13	Addresses	Yes	
§ 63.14	Incorporation by reference	Yes	
§ 63.15	Availability of information	Yes	

[89 FR 70522, Aug. 30, 2024]

Appendix A to Subpart ZZZZ of Part 63—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 Scope and Application. What is this Protocol?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O_2) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O_2).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O_2)	*7782-44-7*	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O_2, or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 Summary of Protocol

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O_2 gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or

modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 Definitions

3.1 ***Measurement System.*** The total equipment required for the measurement of CO and O_2 concentrations. The measurement system consists of the following major subsystems:

3.1.1 ***Data Recorder.*** A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 ***Electrochemical (EC) Cell.*** A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 ***Interference Gas Scrubber.*** A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 ***Moisture Removal System.*** Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 ***Sample Interface.*** The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 ***Nominal Range.*** The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 ***Calibration Gas.*** A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 ***Zero Calibration Error.*** The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 ***Up-Scale Calibration Error.*** The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 ***Interference Check.*** A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 ***Repeatability Check.*** A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 ***Sample Flow Rate.*** The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 ***Sampling Run.*** A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O_2 and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre- sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 ***Sampling Day.*** A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 ***Pre-Sampling Calibration/Post-Sampling Calibration Check.*** The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 ***Performance-Established Configuration.*** The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 Interferences.

When present in sufficient concentrations, NO and NO_2 are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 Safety. [Reserved]

6.0 Equipment and Supplies.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 ***Sample Probe.*** A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 ***Sample Line.*** Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 ***Calibration Assembly (optional).*** A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 ***Particulate Filter (optional).*** Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 ***Sample Pump.*** A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 ***Sample Flow Rate Monitoring.*** An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 ***Sample Gas Manifold (optional).*** A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 ***EC cell.*** A device containing one or more EC cells to determine the CO and O_2 concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 ***Data Recorder.*** A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O_2; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 ***Interference Gas Filter or Scrubber.*** A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 Reagents and Standards. What calibration gases are needed?

7.1 ***Calibration Gases.*** CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O_2. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ±5 percent of the label value. Dry ambient air (20.9 percent O_2) is acceptable for calibration of the O_2 cell. If needed, any lower percentage O_2 calibration gas must be a mixture of O_2 in nitrogen.

7.1.1 ***Up-Scale CO Calibration Gas Concentration.*** Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 ***Up-Scale O_2 Calibration Gas Concentration.***

Select an O_2 gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O_2. When the average exhaust gas O_2 readings are above 6 percent, you may use dry ambient air (20.9 percent O_2) for the up-scale O_2 calibration gas.

7.1.3 ***Zero Gas.*** Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO_2).

8.0 Sample Collection and Analysis

8.1 ***Selection of Sampling Sites.***

8.1.1 ***Control Device Inlet.*** Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 ***Exhaust Gas Outlet.*** Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 ***Stack Gas Collection and Analysis.*** Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the “sample conditioning phase” once per minute until constant readings are obtained. Then begin the “measurement data phase” and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the “measurement data phase” readings to calculate the average stack gas CO and O_2 concentrations.

8.3 ***EC Cell Rate.*** Maintain the EC cell sample flow rate so that it does not vary by more than ±10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ±3 percent, as instructed by the EC cell manufacturer.

9.0 Quality Control (Reserved)

10.0 Calibration and Standardization

10.1 ***Pre-Sampling Calibration.*** Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 ***Zero Calibration.*** For both the O_2 and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 ***Zero Calibration Tolerance.*** For each zero gas introduction, the zero level output must be less than or equal to ±3 percent of the up-scale gas value or ±1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ±0.3 percent O_2 for the O_2 channel.

10.1.3 ***Up-Scale Calibration.*** Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this “sample conditioning phase” once per minute until readings are constant for at least two minutes. Then begin the “measurement data phase” and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 ***Up-Scale Calibration Error.*** The mean of the difference of the “measurement data phase” readings from the reported standard gas value must be less than or equal to ±5 percent or ±1 ppm for CO or ±0.5 percent O_2, whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single “measurement data phase” reading must be less than or equal to ±2 percent or ±1 ppm for CO or ±0.5 percent O_2, whichever is less restrictive, respectively.

10.2 ***Post-Sampling Calibration Check.*** Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 Analytical Procedure

The analytical procedure is fully discussed in Section 8.

12.0 Calculations and Data Analysis

Determine the CO and O_2 concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the “measurement data phase”.

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 ***Measurement Data Phase Performance Check.*** Calculate the mean of the readings from the "measurement data phase". The maximum allowable deviation from the mean for each of the individual readings is ±2 percent, or ±1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example:

A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ±2 percent *or* ±1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed).

13.2 ***Interference Check.*** Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO_2 gas standards that are generally recognized as representative of diesel-fueled engine NO and NO_2 emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 ***Interference Response.*** The combined NO and NO_2 interference response should be less than or equal to ±5 percent of the up-scale CO calibration gas concentration.

13.3 ***Repeatability Check.*** Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 ***Repeatability Check Procedure.*** Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 ***Repeatability Check Calculations.*** Determine the highest and lowest average "measurement data phase" CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ±3 percent or ±1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 Pollution Prevention (Reserved)

15.0 Waste Management (Reserved)

16.0 Alternative Procedures (Reserved)

17.0 References

(1) ***"Development of an Electrochemical Cell Emission Analyzer Test Protocol"*** , Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.

(2) ***"Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers"*** , EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.

(3) ***"ICAC Test Protocol for Periodic Monitoring"*** , EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.

(4) ***"Code of Federal Regulations"*** , Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

Table 1: Appendix A—Sampling Run Data.

Facility_____ Engine I.D._____ Date_____

Run Type: (X)	(_) Pre-Sample Calibration				(_) Stack Gas Sample				(_) Post-Sample Cal. Check		(_) Repeatability Check
Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
Sample Cond. Phase											
″											
″											
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Measurement Data Phase											
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[78 FR 6721, Jan. 30, 2013]

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP) Renewal

Source Description and Location

Source Name:	**Linde Advanced Material Technologies, Inc.**
Source Location:	**1245 and 1415 Main Street, Indianapolis, Indiana 46224 and 1500 and 1550 Polco Street, Indianapolis, Indiana 46222**
County:	**Marion**
SIC Code:	**3479 (Coating, Engraving, and Allied Services, Not Elsewhere Classified)** **3999 (Manufacturing Industries, Not Elsewhere Classified)**
Operation Permit No.:	**F097-46563-00060**
Operation Permit Issuance Date:	**April 1, 2024**
Significant Permit Revision No.:	**097-50712-00060**
Permit Reviewer:	**Mehul Sura**

Source Definition

There is no change being made in this revision regarding these determinations.

(a) This metallic and non-metallic powder manufacturing and surface coating operation consists of four (4) separate buildings:

Building 1 is located at 1245 Main Street, Indianapolis, Indiana 46224;
Building 2 is located at 1415 Main Street, Indianapolis, Indiana 46224;
Building 3 is located at 1550 Polco Street Indianapolis, Indiana 46222; and
Building 4 is located at 1500 Polco Street, Indianapolis, Indiana 46222

The four (4) buildings are contiguous or adjacent and have the same owner. Operations are classified under two (2) separate Standard Industrial Classification Codes (SIC). Although the SIC codes are different, all four (4) buildings provide various support relationships to one another. Since the operations are located on contiguous or adjacent properties, owned by the same company, and provide a support relationship, they will be considered one (1) source, as defined by 326 IAC 2-7-1(22).

This determination was initially made under FESOP No.: F097-7487-00060, issued on October 20, 2000.

(b) Linde Advanced Material Technologies, Inc. (source 097-00060) and Praxair Distribution, Inc. (source 097-00189) plants are not part of the same major source.

This determination was initially made under FESOP No.: F097-7487-00060, issued on October 20, 2000.

Existing Approvals

The source was issued FESOP Renewal No. 097-46563-00060 on April 1, 2024. The source has since received the following approvals:

(a) Significant Permit Revision No. 097-47553-00060, issued on July 2, 2024

(b) Significant Permit Revision No. 097-48030-00060, issued on December 12, 2024

(c) Significant Permit Revision No. 097-48686-00060, issued on February 19, 2025

(d) Administrative Amendment No. 097-49321-00060, issued on July 30, 2025

County Attainment Status

The source is located in Marion County.

Pursuant to amendments to Indiana Code IC 13-17-3-14, effective July 1, 2023, a federal regulation that classifies or amends a designation of attainment, nonattainment, or unclassifiable for any area in Indiana under the federal Clean Air Act is effective and enforceable in Indiana on the effective date of the federal regulation.

Pollutant	Designation
SO_2	Attainment effective May 21, 2020, for the 2010 SO_2 primary 1-hour standard for Center, Perry, and Wayne townships. Unclassifiable or attainment effective April 9, 2018, for the remainder of the county. Better than national secondary standards effective March 3, 1978.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11th Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O_3	Unclassifiable or attainment effective January 16, 2018, for the 2015 8-hour ozone standard.
$PM_{2.5}$	Unclassifiable or attainment effective April 15, 2015, for the 2012 annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 2006 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Unclassifiable or attainment effective January 29, 2012, for the 2010 NO_2 standard.
Pb	Unclassifiable or attainment effective December 31, 2011, for the 2008 lead standard.

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements of Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$

Marion County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements of Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants

Marion County has been classified as attainment or unclassifiable in Indiana for all the other

criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one (1) of the twenty-eight (28) listed source categories under 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B), and there is no applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The fugitive emissions of hazardous air pollutants (HAP) are counted toward the determination of Part 70 Permit applicability and source status under Section 112 of the Clean Air Act (CAA).

Greenhouse Gas (GHG) Emissions

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at https://www.supremecourt.gov/opinions/opinions.aspx) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

Source Status - Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed revision, after consideration of all enforceable limits established in the effective permits. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

	Source-Wide Emissions Prior to Revision (ton/year)								
	PM[1]	**PM_{10}[1]**	**$PM_{2.5}$[1, 2]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Single HAP[3]**	**Total HAPs**
Total PTE of Entire Source Excluding Fugitive Emissions*	164.75	83.38	83.34	0.40	99.84	37.34	26.12	5.17 (Chromium)	22.45
Total PTE of Entire Source	172.73	84.97	83.73	0.40	99.84	37.34	26.12	5.17 (Chromium)	22.45
Title V Major Source Thresholds	NA	100	100	100	100	100	100	10	25
PSD Major Source Thresholds	250	250	250	250	250	250	250	--	--

	Source-Wide Emissions Prior to Revision (ton/year)								
	PM[1]	**PM_{10}[1]**	**$PM_{2.5}$[1, 2]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Single HAP[3]**	**Total HAPs**

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."

[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.

[3]Single highest source-wide HAP

*Fugitive HAP emissions are always included in the source-wide emissions.

The baffles, baghouses, dust collectors, and HEPA filters are considered an integral part of the Specialty Powders Manufacturing Processes and the Surface Coating Processes.

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant is emitted at a rate of two hundred fifty (250) tons per year or more and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is not a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

(c) These emissions are based on the TSD of Significant Permit Revision No. 097-48686-00060, issued on February 19, 2025.

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Linde Advanced Material Technologies, Inc. on August 31, 2026, relating to the following:

(i) Change pressure drop range for the CSP process SCR1 and SCR2 from 6.0 – 14.0 inches of water to 0.2 – 6.0 inches of water

The source has provided the following justification to make this change:

The Permittee is required to take reasonable response steps if the pressure drop for each SCR is outside of the normal range of 6.0 to 14.0 inches of water. However, this range no longer reflects the current and intended operating conditions of the SCR systems. When the normal pressure drop range was originally established, SCR1 had not yet been equipped with high-temperature filters and draft fans. The subsequent addition of these components changed the normal operating pressure drop range for SCR1. The recent stack test for SCR2 indicated pressure drop range of 0.8 – 4.2 inches of water is the normal range for the SCR.

IDEM has made this change.

(ii) Add the following new emission units:

(a) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(b) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-26	5.25	DC075 (Baghouse)	Powder is weighed, mixed into a slurry, and spray-dried. The process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.

(c) Two (2) hydrochloric acid (HCl) storage tanks for pH control, identified as HCl tank 1 and HCl tank 2, approved in 2026 for construction, each with a maximum HCl usage capacity 300.0 gallons of HCl per year and storage capacity of 150 gallons and exhausting indoor.

(iii) Add new mills and screeners at the existing specialty powder R&D operation (EUS-25A) (the changes to the description is shown with deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text):

One (1) specialty powder R&D operation, identified as EUS-25A, approved in 2025 for construction, controlled by a baghouse, identified as DC079, in series with HEPA filters at the baghouse exhaust, and exhausting through stack G79.

The HEPA filters are not considered as integral to the one (1) specialty powders R&D operation, identified as EUS-25A.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: **two (2)** ~~three (3)~~ electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer**, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table**~~ and one (1) wet stirred bead mill~~.

(iv) Update the descriptions of the existing emission units as follows (the changes to the descriptions are shown with deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text):

(a) One (1) powder manufacturing process, identified as CSP Department EU020, constructed in 2014 unless otherwise specified below, located at 1550 Polco Street, exhausting outdoors, and consisting of the following:

. . .

(3) One (1) combustion spray pyrolysis (CSP) operation, approved in 2023 and again in 2024 to increase its maximum capacity, with a maximum capacity of twelve (12) batches of powder per twenty (20) hours, including the following systems:

(E) One (1) CSP pollution control system, used to collect material not captured by the cyclonic collection system, which includes the following control devices:

(i) One (1) **high temperature baghouse** dust collector, identified as **BAG 1** ~~DC-020A~~ (CSP),

(ii) One (1) selective catalytic reduction system, identified as SCR1 (CSP);

(iii) One (1) **high temperature baghouse** dust collector, identified as **BAG 2** ~~DC-033~~ (CSP), constructed in 2024, **and**

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024.~~; and~~

~~(v) One (1) dust collector, identified as DC-061 (CSP).~~

(4) One (1) powder handling operation to convey powder to a hopper **and sagger filling** after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing **three (3)** ~~two (2)~~ dust collector, identified as DC-033**, DC-034** and DC-020A, as control.

This Powder Handling After CSP is approved in 2024 to add a control.

. . .

(7) Nine (9) enclosed mills:

. . .

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as **DC-033** ~~DC-030~~, as control.

. . .

(9) Five (5) primary enclosed blenders:

(i) One (1) primary enclosed blender, identified as Blender 1, permitted in 2022 to use a control, used to homogenize the mixture, utilizing a dust collector, identifies as **DC-30**~~DC-033~~, as control, and with no exhaust;

(ii) One (1) primary enclosed blender, identified as Blender 2, constructed in 2023, used to homogenize the mixture, utilizing a dust collector, identifies as **DC-30**~~DC-033~~, as control, and with no exhaust;

(iii) Three (3) primary enclosed blender, identified as Blender 3, Blender 4, and Blender 5, constructed in 2024, used to homogenize the mixture, utilizing a dust collector, identified as **DC-30**~~DC-033~~, as control, with no exhaust.

(10) One (1) final powder handling process, identified as Final Powder Handling, with a maximum capacity of 70.77 pounds of powder screened and packaged (six screeners) per hour, and utilizing a dust collector, identified as **DC-061**~~DC-030~~, as control.

This Final Powder Handling is approved in 2024 to change control.

. . .

(b) Twenty-nine (29) specialty powders manufacturing operations, located at the 1550 Polco Street Specialty Powders area:

(1) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
. . .	. . .	. . .	. . .
EUS-10	300	DC043, DC044, **DC045,** ~~DC061,~~ Powder 5 Baghouse	. . . ~~DC061 controls one (1) blender, one (1) screener, three (3) mixing tanks, and one (1) hopper.~~ . . .
. . .	. . .	. . .	. . .
. . .			

(2) One (1) specialty powder manufacturing operation, identified as EUS-15D, constructed in 2018, controlled by an integral baghouse, identified as DC074, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15D.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15D	341.66	DC074 (Baghouse)	Support for Viga 250 #3, used for Powder 2. **DC074** ~~DC079~~ controls dust from support operations in the Viga 250 #3.

. . .

(5) One (1) specialty powder manufacturing operation, identified as EUS-15H, constructed in 2024, controlled by a baghouse, identified as **DC087** ~~DC075~~, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-15H.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15H	341.66	**DC087** ~~DC075~~ (Baghouse)	Used for Powder 2.

. . .

(r) One (1) Operation 2 Process 3, identified as O2P3 EUG3, constructed in 2019, consisting of one (1) abrasive dry ice blasting unit, with a maximum dry ice throughput of 1,000 pounds per week, with a residual powder total of **0.25**~~0.5~~ pounds per part, using a ~~shared~~ dust collector as control, identified as CG2, and exhausting indoors.

(v) Remove the following emission units:

(j) One (1) metal surface coating station:

(1) One (1) plasma surface coating station, identified as EU04B, constructed in 2018, with a maximum capacity of 1.00 lbs per hour, used to apply coating to metal surfaces, located at 1500 Polco Street, utilizing no control, and exhausting indoors.

(k) Natural gas-fired boiler, located at the 1500 Polco Street Powerhouse, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	Maximum Capacity (MMBtu/hr)	Stack / Vent ID
EU004	Cleaver Brooks Boiler	1992	14.645	004

(vi) Update the emission factors used to calculate potential particulate emissions for the existing nine enclosed mills

Linde Advanced Material Technologies, Inc. is requesting updates to the emission factors used to calculate potential particulate emissions for the nine enclosed mills Mill 1 through Mill 9. The old emission factors were from Web FIRE, SCC 3-05-00802 for Crushing, Grinding, & Milling during Ceramic Clay/Tile Manufacture. The proposed new emission factors are based on AP-42 Table 11.24, Metallic Minerals Processing, SCC 3-03-024-10, for dry grinding without air conveying and/ or air classification. The proposed new emission factors are more representative for the nine enclosed mills Mill 1 through Mill 9.

IDEM has made this change.

(vii) The source has requested to add PM, PM10 and PM2.5 limits and associated control operation and monitoring requirements for the existing wet grit blasting unit (EU14C). This wet grit blasting unit (EU14C) is similar to the existing wet grit blasting unit (EU15C). The permit specify limits for EU15C but the permit does not specify limits for EU14C.

IDEM has added PM, PM10 and PM2.5 limits and associated control operation and monitoring requirements for the existing wet grit blasting unit (EU14C).

Enforcement Issues

There are no pending enforcement actions related to this revision.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – FESOP Significant Permit Revision

Pursuant to 326 IAC 2-1.1-1(12), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."

The following table is used to determine the appropriate permit level under 326 IAC 2-8-11.1 (Permit Revisions). This table reflects the PTE before controls of the proposed revision. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

	PTE Before Controls of the New Emission Units (ton/year)									
Process / Emission Unit	**PM**	**PM_{10}**	**$PM_{2.5}$[1]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Total HAPs**	**Single HAP[2]**	
Spray Dryer (EUS-R&D)	0.075	0.075	0.075	-	0.905	-	-	0.023	0.015	Nickel
Specialty Powder Operation (EUS-26)	1.020	1.020	1.020	-	-	-	-	0.969	0.510	Nickel
Two (2) hydrochloric acid (HCl) storage tanks	-	-	-	-	-	-	-	1.13	1.13	HCl
Specialty Powder R&D operation (EUS-25A)	0.540	0.540	0.540	-	-	-	-	0.020	0.020	Nickel
Total PTE Before Controls of the New Emission Units:	**1.63**	**1.63**	**1.63**	**0.00**	**0.91**	-	-	**1.01**	1.13	HCl

[1]$PM_{2.5}$ listed is direct $PM_{2.5}$.
[2]Single highest HAP.

Appendix A of this TSD reflects the detailed potential emissions of the proposed revision.

Pursuant to 326 IAC 2-8-11.1(f), this FESOP is being revised through a FESOP Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit revision and the proposed revision involves deleting PM, PM10 and PM2.5 PSD Minor Limits for the nine (9) enclosed mills (Mill 1 through 9).

PTE of the Entire Source After Issuance of the FESOP Revision

The table below summarizes the after issuance source-wide potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of the revision, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

	Source-Wide Emissions After Issuance (ton/year)									
	PM[1]	**PM_{10}[1]**	**$PM_{2.5}$[1, 2]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Total HAPs**	**Single HAP[3]**	
Total PTE of Entire Source Excluding Fugitives*	177.85	96.56	96.52	0.40	99.93	37.34	26.12	22.6	4.2	Cobalt
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10	
PSD Major Source Thresholds	250	250	250	250	250	250	250	--	--	--

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."

[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.

[3]Single highest source-wide HAP.

*Fugitive HAP emissions are always included in the source-wide emissions.

The source opted to take PM, PM10, PM2.5, and NOx limit(s) in order to render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to this source. See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP) for more information regarding the limit(s).

Appendix A of this TSD reflects the detailed potential to emit of the entire source after issuance.

(a) This existing Title V minor stationary source will continue to be minor under 326 IAC 2-7 because the potential to emit regulated air pollutants and HAPs from the entire source will continue to be less than or limited to less than the Title V major source threshold levels. Therefore, the source is subject to the provisions of 326 IAC 2-8 (FESOP) and is an area source under Section 112 of the Clean Air Act (CAA).

(b) This existing minor PSD stationary source will continue to be minor under 326 IAC 2-2 because the potential to emit of all PSD regulated pollutants from the entire source will continue to be less than or limited to less than the PSD major source thresholds. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability Determination

Due to the proposed revision, federal rule applicability has been reviewed as follows:

New Source Performance Standards (NSPS):

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this proposed revision.

National Emission Standards for Hazardous Air Pollutants (NESHAP):

(a) Subpart CCCCCCC—National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing

The spray dryer (EUS-R&D), specialty powder operation (EUS-26) and specialty powder R&D operation (EUS-25A) are subject to the requirements of this NESHAP because these facilities perform paints and allied products manufacturing and it process, use, or generate materials containing HAP, as defined in 40 CFR 63.11607 at an area source of hazardous air pollutants.

The compliance date for the spray dryer (EUS-R&D), specialty powder operation (EUS-26) and specialty powder R&D operation (EUS-25A) is upon the startup of these facilities.

The spray dryer (EUS-R&D), specialty powder operation (EUS-26) and specialty powder R&D operation (EUS-25A) are subject to the following portions of Subpart CCCCCCC:

63.11599(a) & (b)	Am I subject to this subpart?
63.11600	What are my compliance dates?
63.11601	What are the standards for new and existing paints and allied products manufacturing facilities?
63.11602	What are the performance test and compliance requirements for new and existing sources?
63.11603(a), (b), (c)	What are the notification, reporting, and recordkeeping requirements?
63.11605	What General Provisions apply to this subpart?
63.11606	Who implements and enforces this subpart?
63.11607	What definitions apply to this subpart?
Tables to Subpart CCCCCCC of Part 63	
Table 1	Applicability of General Provisions to Paints and Allied Products Manufacturing Area Sources

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the spray dryer (EUS-R&D), specialty powder operation (EUS-26) and specialty powder R&D operation (EUS-25A) except as otherwise specified in 40 CFR 63, Subpart CCCCCCC.

(b) Subpart VVVVVV—National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources

The spray dryer (EUS-R&D), specialty powder operation (EUS-26) and specialty powder R&D operation (EUS-25A) are not subject to the requirements of this NESHAP because these facilities are subject to the requirements of NESHAP, Subpart CCCCCCC.

(c) Subpart CCC—National Emission Standards for Hazardous Air Pollutants for Steel Pickling—HCl Process Facilities and Hydrochloric Acid Regeneration Plants

The two (2) hydrochloric acid (HCl) storage tanks are not subject to the requirements of this NESHAP because these facilities are not located at a major source of HAPs as defined in 40 CFR 63.2

(d) There are no other National Emission Standards for Hazardous Air Pollutants under 40 CFR 63, 326 IAC 14 and 326 IAC 20 included for this proposed revision.

Compliance Assurance Monitoring (CAM):

Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability - Entire Source

Due to this revision, state rule applicability has been reviewed as follows:

326 IAC 2-2 (PSD) and 326 IAC 2-8-4 (FESOP)
PSD and FESOP applicability are discussed under the PTE of the Entire Source After Issuance of the FESOP Revision section of this document.

(a) In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-7 (Part 70 Permits) and pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the limits specified below.

Emission Unit	PM Limit (lbs/hr)	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
EU14C	0.50	0.09	0.09

Compliance with the PM limit, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Compliance with the PM10 and PM2.5 limits, combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5, each, to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

(b) PM, PM10 and PM2.5 PSD Minor and FESOP limits for the nine (9) enclosed mills (Mill 1 through 9) are removed due to the following reasons:

Based on the updated PM, PM10 and PM2.5 emission factors for the nine (9) enclosed mills (Mill 1 through 9), the PM, PM10 and PM2.5 emissions are below insignificant activity thresholds.

The uncontrolled PM emissions from the nine (9) enclosed mills (Mill 1 through 9), combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

The uncontrolled PM and PM10 emissions, each, from the nine (9) enclosed mills (Mill 1 through 9) combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The spray dryer (EUS-R&D), specialty powder operation (EUS-26), specialty powder R&D operation (EUS-25A) and two (2) hydrochloric acid (HCl) storage tanks, each emission unit(s) will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
This source (located in Marion County) is located in one of the counties listed in 326 IAC 6.5, but is not one of the sources specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10. The source-wide PTE of PM is 10 tons per year or more. Therefore, this source is subject to the requirements of 326 IAC 6.5-1-2

because the source-wide actual emissions of PM can be 10 tons per year or more.

326 IAC 6.8 (Particulate Matter Limitations for Lake County)
Pursuant to 326 IAC 6.8-1-1(a), this source (located in Marion County) is not subject to the requirements of 326 IAC 6.8 because it is not located in Lake County.

326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Compliance Determination and Monitoring Requirements

(a) The Compliance Determination Requirements applicable to this revision are as follows:

In order to assure compliance with PM, PM10 and PM2.5 limits, the mist collectors for particulate control equipped on the wet grit blasting unit (EU14C) shall be in operation and control emissions from the wet grit blasting unit (EU14C) at all times the wet grit blasting unit (EU14C) unit is in operation.

(b) The Compliance Monitoring Requirements applicable to this proposed revision are as follows:

Emission Unit	Control	Operating Parameter	Frequency	Excursions and Exceedances
Combustion spray pyrolysis (CSP) operation	Selective Catalytic Reduction Systems SCR1 and SCR2	Pressure Drop	Once per day	Response Steps
		Ammonia Injection Rate	Continuous	Response Steps
		Minimum Inlet Temperature	Continuous	Response Steps
Wet grit blasting unit (EU14C)	Mist collectors (C14C)	Mist collectors inspections	Quarterly	Response Steps
*Note: Compliance monitoring parameter value(s) or specification(s) from the most recent compliant stack test will be specified in the stack test report available via IDEM's Virtual File Cabinet (VFC) at https://www.in.gov/idem/legal/public-records/virtual-file-cabinet/. Once you have accessed VFC, you will then have the option to search for source related documents using a variety of criteria.				

These monitoring conditions are necessary because the above SCRs for their associated emission unit(s) must operate properly to assure compliance with 326 IAC 2-8-4 (FESOP) and in order to render 326 IAC 2-2 not applicable.

These monitoring conditions are necessary for the wet grit blasting unit (EU14C) because the mist collectors (C14C) control device must operate properly to assure compliance with the following:

(1) 326 IAC 2-2 (PSD),
(2) 326 IAC 2-8 (FESOP), and
(3) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)

Proposed Changes

The following changes listed below are due to the proposed revision. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

(a) The PM, PM10 and PM2.5 PSD Minor and FESOP limits in Conditions D.1.1 and D.1.2 for the nine (9) enclosed mills (Mill 1 through 9) are removed due to the following reasons:

Based on the updated PM, PM10 and PM2.5 emission factors for the nine (9) enclosed mills (Mill 1 through 9), the PM, PM10 and PM2.5 emissions are below insignificant activity thresholds.

The uncontrolled PM emissions, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

The uncontrolled PM and PM10 emissions, each, combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5 to less than one hundred (100) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(b) PM, PM10 and PM2.5 limits and associated control operation and monitoring requirements for the existing wet grit blasting unit (EU14C) have been added.

(c) Proposed new emission units are added in the permit and exiting emission units description is revised.

(d) The word “rated” has been added in the capacity description of several emission units for clarification purposes.

(e) IDEM OAQ has removed the NSPS, 40 CFR Part 60, Subpart Dc requirements (Section E.1) form the permit for Cleaver Brooks Boiler EU004 because this boiler has removed from the facility.

(f) IDEM OAQ has revised Section(s) E2 through E5 of the permit to use a new table format for the applicable federal rule citations which will also include the federal rule section titles.

(g) IDEM, OAQ has updated Attachments B and E of the permit to contain the most recent version(s) of National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR 63, Subparts VVVVVV and ZZZZ.

Note: The most recent versions of 40 CFR 63, Subparts VVVVVV and ZZZZ are now included in their entirety in the permit as Attachments B and E, but these changes are not shown in their entirety as bold and strikethrough text.

(h) The Malfunction Report condition is revised to provide clarification.

(i) Incorrect permit expiration date was specified on the permit cover page of the existing permit. This error has been now corrected. The correct expiration date of the permit is April 1, 2034, and this date is now specified.

Issued by: *Original signed by:* Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 1, 2024 Expiration Date: April 1, ~~2029~~**2034**

. . .

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

1550 Polco Street

(a) . . .

. . .

(D) Natural Gas Combustion Units:

(i) One (1) natural gas combustion unit, identified as Burner 1 Associated with EU020, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(ii) One (1) natural gas combustion unit, identified as Burner 2 Associated with EU020, constructed in 2024, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iii) One (1) natural gas combustion unit, identified as Burner 3 Associated with EU020, constructed in 2024, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iv) Three (3) natural gas combustion unit, identified as Burners 4, 5, and 6 Associated with EU020, constructed in 2024, each with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(E) One (1) CSP pollution control system, used to collect material not captured by the cyclonic collection system, which includes the following control devices:

(i) One (1) **high temperature baghouse** dust collector, identified as **BAG 1** ~~DC-020A~~ (CSP),

(ii) One (1) selective catalytic reduction system, identified as SCR1 (CSP);

(iii) One (1) **high temperature baghouse** dust collector, identified as **BAG 2** ~~DC-033~~ (CSP), constructed in 2024, **and**

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024.~~; and~~

~~(v) One (1) dust collector, identified as DC-061 (CSP).~~

(4) One (1) powder handling operation to convey powder to a hopper **and sagger filling** after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing **three (3)** ~~two (2)~~ dust collector, identified as DC-033**, DC-034** and DC-020A, as control.

. . .

. . .

(7) Nine (9) enclosed mills:

. . .

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as **DC-033** ~~DC-030~~, as control.

. . .

(9) Five (5) primary enclosed blenders:

(i) One (1) primary enclosed blender, identified as Blender 1, permitted in 2022 to use a control, used to homogenize the mixture, utilizing a dust collector, identifies as **DC-30**~~DC-033~~, as control, and with no exhaust;

(ii) One (1) primary enclosed blender, identified as Blender 2, constructed in 2023, used to homogenize the mixture, utilizing a dust collector, identifies as **DC-30**~~DC-033~~, as control, and with no exhaust;

(iii) Three (3) primary enclosed blender, identified as Blender 3, Blender 4, and Blender 5, constructed in 2024, used to homogenize the mixture, utilizing a dust collector, identified as **DC-30**~~DC-033~~, as control, with no exhaust.

(10) One (1) final powder handling process, identified as Final Powder Handling, with a maximum capacity of 70.77 pounds of powder screened and packaged (six screeners) per hour, and utilizing a dust collector, identified as **DC-061**~~DC-030~~, as control.

This Final Powder Handling is approved in 2024 to change control.

. . .

(b) **Thirty (30)** ~~Twenty-nine (29)~~ specialty powders manufacturing operations, located at the 1550 Polco Street Specialty Powders area:

(1) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
. . .	. . .	. . .	. . .
EUS-10	300	DC043, DC044, **DC045**	. . . ~~DC061 controls one (1) blender, one~~

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
		~~DC061~~, Powder 5 Baghouse	~~(1) screener, three (3) mixing tanks, and one (1) hopper.~~ . . .
. . .	. . .	. . .	. . .
. . .			

. . .

(7) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: **two (2)** ~~three (3)~~ electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer**, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table**~~ and one (1) wet stirred bead mill~~.

(8) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(9) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	**Maximum Throughput (lb/hr)**	**Control Device**	**Description**
EUS-26	**5.25**	**DC075 (Baghouse)**	**Powder is weighed, mixed into a slurry, and spray-dried. The process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.**

Under NESHAP for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC], the specialty powders manufacturing operation (except EUP-11B) are considered affected units.

. . .

(g) Eleven (11) direct heating natural gas-fired combustion units:

(1) . . .

Emission Unit ID	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)	Stack / Vent ID
. . .	. . .	. . .	. . .

(2) . . .

Emission Unit ID	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)	Control Device	Stack / Vent ID
. . .	. . .	. . .	. . .	. . .

(h) . . .

Emission Unit ID	Unit Description	Construction Year	**Rated** Maximum Capacity (MMBtu/hr)	Stack / Vent ID
. . .	. . .	. . .	. . .	. . .

~~Under NSPS for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 63, Subpart Dc], the one (1) natural gas-fired boiler, identified as Cleaver Brooks Boiler EU004, is considered an affected unit.~~

. . .

(j) **[Reserved]**~~One (1) metal surface coating station:~~

~~(1) One (1) plasma surface coating station, identified as EU04B, constructed in 2018, with a maximum capacity of 1.00 lbs per hour, used to apply coating to metal surfaces, located at 1500 Polco Street, utilizing no control, and exhausting indoors.~~

(k) ~~Three (3)~~ **Two (2)** natural gas-fired boilers, located at the 1500 Polco Street Powerhouse, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	**Rated** Maximum Capacity (MMBtu/hr)	Stack / Vent ID
EU002	Cleaver Brooks Boilers	1990	8.369	002
EU003			8.369	003
~~EU004~~		~~1992~~	~~14.645~~	~~004~~

~~Under NSPS for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 63, Subpart Dc], the one (1) natural gas-fired boiler, identified as Cleaver Brooks Boiler EU004, is considered an affected unit.~~

. . .

(p) . . .

Number of Units	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)
. . .	. . .	. . .

. . .

(r) One (1) Operation 2 Process 3, identified as O2P3 EUG3, constructed in 2019, consisting of one (1) abrasive dry ice blasting unit, with a maximum dry ice throughput of 1,000 pounds per week, with a residual powder total of **0.25**~~0.5~~ pounds per part, using a ~~shared~~ dust collector as control, identified as CG2, and exhausting indoors.

. . .

(aa) . . .

Emission Unit ID	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)
. . .	**. . .**	**. . .**

. . .

A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(19)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(19):

. . .

1415 Main Street

. . .

(l) Two (2) stripping **and two (2) hydrochloric acid storage tanks** operations consisting of the following:

. . .

(3) Two (2) hydrochloric acid (HCl) storage tanks for pH control, identified as HCl tank 1 and HCl tank 2, approved in 2026 for construction, each with a maximum HCl usage capacity 300.0 gallons of HCl per year and storage capacity of 150 gallons and exhausting indoor.

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C.15 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, startups**,** or shutdowns of any emission unit or emission control equipment, that result~~s~~ in violations of applicable air pollution control regulations or applicable emission limitations must be kept and retained for a period of three (3) years and **shall** be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any emission unit or emission control equipment ~~occurs that~~**: 1) results in violations of applicable air pollution control regulations or applicable emissions limitations and 2)** lasts more than one (1) hour, the condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages~~).~~**) or its equivalent.** Notification must be made by telephone or other electronic means, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of the occurrence.

(c) Failure to report a malfunction **under subsection (b) of this condition** of any emission unit or emission control equipment shall constitute a violation of 326 IAC 1~~-~~6, and any other applicable rules. Information ~~on~~**of** the scope and expected duration of the malfunction must be provided, including the items specified in 326 IAC 1~~-6-~~2(c)(3)(A) through (E).

. . .

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

. . .

(a) . . .

(3) . . .

. . .

(D) Natural Gas Combustion Units:

(i) One (1) natural gas combustion unit, identified as Burner 1 Associated with EU020, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(ii) One (1) natural gas combustion unit, identified as Burner 2 Associated with EU020, constructed in 2024, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iii) One (1) natural gas combustion unit, identified as Burner 3 Associated with EU020, constructed in 2024, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iv) Three (3) natural gas combustion unit, identified as Burners 4, 5, and 6 Associated with EU020, constructed in 2024, each with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(E) . . .

(i) One (1) dust collector, identified as **DC-020A** ~~BAG1~~ (CSP),

(ii) . . .

(iii) One (1) dust collector, identified as **DC-033** ~~BAG2~~ (CSP),

constructed in 2024, ~~and~~

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024; **and**

(v) One (1) dust collector, identified as DC-061 (CSP).

(4) One (1) powder handling operation to convey powder to a hopper **and sagger filling** after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing **three (3)** ~~two (2)~~ dust collector, identified as DC-033**, DC-034** and DC-020A, as control.

. . .

. . .

(7) . . .

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 2024, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as **DC-033** ~~DC-030~~, as control.

. . .

(9) Five (5) primary enclosed blenders:

(i) One (1) primary enclosed blender, identified as Blender 1, permitted in 2022 to use a control, used to homogenize the mixture, utilizing a dust collector, identifies as **DC-30**~~DC-033~~, as control, and with no exhaust;

(ii) One (1) primary enclosed blender, identified as Blender 2, constructed in 2023, used to homogenize the mixture, utilizing a dust collector, identifies as **DC-30**~~DC-033~~, as control, and with no exhaust;

(iii) Three (3) primary enclosed blender, identified as Blender 3, Blender 4, and Blender 5, constructed in 2024, used to homogenize the mixture, utilizing a dust collector, identified as **DC-30**~~DC-033~~, as control, with no exhaust.

(10) One (1) final powder handling process, identified as Final Powder Handling, with a maximum capacity of 70.77 pounds of powder screened and packaged (six screeners) per hour, and utilizing a dust collector, identified as **DC-061**~~DC-030~~, as control.

This Final Powder Handling is approved in 2024 to change control.

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D.1.1 PM PSD Minor Limits [326 IAC 2-2]

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Emission Unit	PM Limit (lbs/hr)
. . .	. . .
~~Enclosed Mills 1 to 9~~	~~1.14~~

. . .

D.1.2 PM10, PM2.5 PSD Minor and FESOP Limits [326 IAC 2-2] [326 IAC 2-8]

. . .

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
. . .	. . .	. . .
~~Enclosed Mills 1 to 9~~	~~0.46~~	~~0.46~~

. . .

D.1.6 Emissions Control (PM, PM10, PM2.5, NOx)

. . .

Emission Unit	Control Device
Combustion spray pyrolysis (CSP) operation of the CSP Department EU020	**BAG 1** ~~DC-020A~~ (CSP)
	BAG 2 ~~DC-033~~ (CSP)

(b) . . .

Emission Unit	Control Device
. . .	
Powder Handling After CSP	DC-033**, DC-034 and DC-020A**
. . .	. . .
Enclosed Mills 1 to **3 and 6 to** 9	DC-03~~03~~
Enclosed Mills 4 and 5	**DC-033**
. . .	. . .
Final Powder Handling	**DC-061**~~DC-030~~
. . .	. . .

. . .

D.1.8 Dust Collector Inspections

. . .

Emission Unit ID	Control Device ID
. . .	
	BAG 1 ~~DC-020A~~ (CSP)

Emission Unit ID	Control Device ID
Combustion spray pyrolysis (CSP) operation	**BAG 2** ~~DC-033~~ (CSP)
Powder Handling After CSP	DC-033**, DC-034 and DC-020A**
. . .	. . .
Enclosed Mills 1 to **3 and 6 to** 9	DC-03~~03~~
Enclosed Mills 4 and 5	**DC-033**
. . .	. . .
Final Powder Handling	**DC-061**~~DC-030~~
. . .	. . .

. . .

D.1.9 Selective Catalytic Reduction System Monitoring Requirements

(a) Pressure drop:

. . .

(i) SCR1 (CSP):

When for any one reading, the pressure drop across the one (1) selective catalytic reduction system, identified as SCR1 (CSP), is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between ~~6.0~~**0.2** and ~~14.0~~**6.0** inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit.

(ii) SCR2 (CSP):

When for any one reading, the pressure drop across the one (1) selective catalytic reduction system, identified as SCR2 (CSP), is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between ~~6.0~~**0.2** and ~~14.0~~**6.0** inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit.

. . .

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

. . .

(b) . . .

(1) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
. . .	. . .	. . .	. . .
EUS-10	300	DC043, DC044, DC045, ~~DC061~~, Powder 5 Baghouse	. . . ~~DC061 controls one (1) blender, one (1) screener, three (3) mixing tanks, and one (1) hopper.~~ . . .
. . .	. . .	. . .	. . .
. . .			

. . .

(5) One (1) specialty powder manufacturing operation, identified as EUS-15H, constructed in 2024, controlled by a baghouse, identified as **DC087** ~~DC075~~, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

. . .

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-15H	341.66	**DC087** ~~DC075~~ (Baghouse)	Used for Powder 2.

. . .

(7) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: **two (2)** ~~three (3)~~ electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer**, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table** ~~and one (1) wet stirred bead mill~~.

(8) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(9) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-26	**5.25**	**DC075 (Baghouse)**	**Powder is weighed, mixed into a slurry, and spray-dried. The process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.**

. . .

. . .

(r) One (1) Operation 2 Process 3, identified as O2P3 EUG3, constructed in 2019, consisting of one (1) abrasive dry ice blasting unit, with a maximum dry ice throughput of 1,000 pounds per week, with a residual powder total of **0.25**~~0.5~~ pounds per part, using a ~~shared~~ dust collector as control, identified as CG2, and exhausting indoors.

. . .

. . .

D.2.1 PSD Minor Limits (PM) [326 IAC 2-2]

. . .

Emission Unit	PM Limit (lbs/hr)
. . .	. . .
Two (2) ~~One (1)~~ wet grit blasting unit**s**	
EU14C	**0.50**
EU15C	0.50
. . .	

. . .

D.2.2 FESOP Limits (PM10 and PM2.5) [326 IAC 2-2] [326 IAC 2-8]

. . .

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
. . .	. . .	. . .
Two (2) ~~One (1)~~ wet grit blasting unit**s**		
EU14C	**0.09**	**0.09**
EU15C	0.09	0.09
. . .		

. . .

D.2.3 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

. . .

Emission Unit
. . .
EUS-25A
EUS-R&D
EUS-26
. . .
Emission Unit
. . .
Two (2) ~~One (1)~~ wet grit blasting unit**s**
EU14C
EU15C
. . .

. . .

D.2.5 ~~Particuale~~ **Particulate** Emissions Control

(a) . . .

Emission Unit	Control Device ID
. . .	
Two (2) ~~One (1)~~ wet grit blasting unit**s**	
EU14C	**C14C**
EU15C	C15C
. . .	

(b) . . .

Emission Unit	Control Device ID
. . .	
EUS-15D	DC074 (Baghouse)
EUS-15H	**DC087**~~DC075~~ (Baghouse)
. . .	. . .
EUS-25A	**DC079** ~~DC080~~ (Baghouse)
EUS-R&D	**DC-020A**
EUS-26	**DC075 (Baghouse)**

Emission Unit	Control Device ID
. . .	. . .

. . .

D.2.6 Baghouse, Dust Collector, and Scrubber Inspections

. . .

Emission Unit	Control Device ID
. . .	
EUS-15D	DC074 (Baghouse)
EUS-15H	**DC087**~~DC075~~ (Baghouse)
. . .	. . .
EUS-25A	**DC079** ~~DC080~~ (Baghouse)
EUS-R&D	**DC-020A**
EUS-26	**DC075 (Baghouse)**
. . .	. . .
Two (2) ~~One (1)~~ wet grit blasting unit**s**	
EU14C	**C14C**
EU15C	C15C
. . .	. . .

. . .

. . .

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

~~**1500 Polco Street**~~

~~(j) One (1) metal surface coating station:~~

~~(1) One (1) plasma surface coating station, identified as EU04B, constructed in 2018, with a maximum capacity of 1.00 lbs per hour, used to apply coating to metal surfaces, located at 1500 Polco Street, utilizing no control, and exhausting indoors.~~

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SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

. . .

(g) . . .

(1) . . .

Emission Unit ID	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)	Stack / Vent ID
. . .	. . .	. . .	. . .

(2) . . .

Emission Unit ID	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)	Control Device	Stack / Vent ID
. . .	. . .	. . .	. . .	. . .

(h) . . .

Emission Unit ID	Unit Description	Construction Year	**Rated** Maximum Capacity (MMBtu/hr)	Stack / Vent ID
. . .	. . .	. . .	. . .	. . .

~~Under NSPS for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 63, Subpart Dc], the one (1) natural gas-fired boiler, identified as Cleaver Brooks Boiler EU004, is considered an affected unit.~~

1500 Polco Street

(k) ~~Three (3)~~ **Two (2)** natural gas-fired boilers, located at the 1500 Polco Street Powerhouse, utilizing no control, and consisting of the following:

Emission Unit ID	Unit Description	Construction Year	**Rated** Maximum Capacity (MMBtu/hr)	Stack / Vent ID
. . .	. . .	. . .	. . .	. . .

~~Under NSPS for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 63, Subpart Dc], the one (1) natural gas-fired boiler, identified as Cleaver Brooks Boiler EU004, is considered an affected unit.~~

1245 Main Street

(p) . . .

Number of Units	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)
. . .	. . .	. . .

1415 Main Street

(aa) . . .

Emission Unit ID	Unit Description	**Rated** Maximum Capacity (MMBtu/hr)
. . .	. . .	. . .

. . .

. . .

. . .

D.4.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2]

. . .

Emission Unit ID
. . .
EU003
~~EU004~~
. . .

(b) . . .

. . .
~~EU004~~

. . .

SECTION E.1 ~~NSPS~~[Reserved]

~~Emissions Unit Description:~~

~~1500 Polco Street~~

~~(h) One (1) natural gas-fired boiler, located at 1550 Polco Street, utilizing no control, and consisting of the following:~~

~~Emission Unit ID~~	~~Unit Description~~	~~Construction Year~~	~~Maximum Capacity (MMBtu/hr)~~	~~Stack / Vent ID~~
~~B 004~~	~~Ajax Boilers~~	~~1999~~	~~0.45~~	~~004~~

~~Under NSPS for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 63, Subpart Dc], the one (1) natural gas-fired boiler, identified as Cleaver Brooks Boiler EU004, is considered an affected unit.~~

~~(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)~~

~~New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(1)]~~

~~E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]~~

~~(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit listed above, except as otherwise specified in 40 CFR Part 60, Subpart Dc.~~

~~(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to:~~

~~Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
Indiana Government Center North
100 North Senate Avenue, Room 13W
Indianapolis, Indiana 46204-2251~~

~~E.1.2 New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units [326 IAC 12] [40 CFR Part 60, Subpart Dc]~~

~~The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart Dc (included as Attachment A to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission unit listed above:~~

~~(1) 40 CFR 60.40c~~
~~(2) 40 CFR 60.41c~~
~~(3) 40 CFR 60.48c(a)(1), (a)(3), (g), and (i)~~

SECTION E.2 NESHAP

. . .

(a) . . .

. . .

(3) . . .

(D) Natural Gas Combustion Units:

(i) One (1) natural gas combustion unit, identified as Burner 1 Associated with EU020, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(ii) One (1) natural gas combustion unit, identified as Burner 2 Associated with EU020, constructed in 2024, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iii) One (1) natural gas combustion unit, identified as Burner 3 Associated with EU020, constructed in 2024, with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(iv) Three (3) natural gas combustion unit, identified as Burners 4, 5, and 6 Associated with EU020, constructed in 2024, each with a **rated** maximum capacity of 0.40 MMBtu per hour, and utilizing the one (1) CSP pollution control system.

(E) . . .

(i) One (1) dust collector, identified as **DC-020A** ~~BAG1~~ (CSP),

(ii) . . .

(iii) One (1) dust collector, identified as **DC-033** ~~BAG2~~ (CSP), constructed in 2024, ~~and~~

(iv) One (1) selective catalytic reduction system, identified as SCR2 (CSP), constructed in 2024; **and**

(v) One (1) dust collector, identified as DC-061 (CSP).

(4) One (1) powder handling operation to convey powder to a hopper **and sagger filling** after CSP, identified as Powder Handling After CSP, with a maximum capacity of 84.90 pounds of powder fed into a kiln per hour, and utilizing **three (3)** ~~two (2)~~ dust collector, identified as DC-033**, DC-034** and DC-020A, as control.

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. . .

(7) Nine (9) enclosed mills:

. . .

(iii) Two (2) enclosed DM1 pre-kiln mills, identified as Mill 4 and Mill 5, constructed in 202~~3~~**4**, each with a maximum capacity of 84.90 pounds of powder milled per hour, emitting only during loading and unloading powder handling operations, and utilizing a dust collector, identified as **DC-033** ~~DC-030~~, as control.

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E.2.2 National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources [40 CFR Part 63, Subpart VVVVVV] [326 IAC 20]

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~~(1) 40 CFR 63.111494 (a)~~
~~(2) 40 CFR 63.111494 (a)(1)~~
~~(3) 40 CFR 63.111494 (a)(2)(i)~~
~~(4) 40 CFR 63.111494 (b)~~
~~(5) 40 CFR 63.111494 (h)~~
~~(6) 40 CFR 63.11495(a)(1)~~
~~(7) 40 CFR 63.11495(a)(3)~~
~~(8) 40 CFR 63.11496(f)(1)~~
~~(9) 40 CFR 63.11496(f)(4)~~
~~(10) 40 CFR 63.11501(a), (b), (c)(1)(i)(vii)(viii), (c)(3)(ii), (d)(1)(3)(4)(8)~~
~~(11) Table 9~~

63.11494(a), (b) and (h)	**What are the applicability requirements and compliance dates?**
63.11495(a)(1) and (a)(3)	**What are the management practices and other requirements?**
63.11496(f)(1) and (f)(4)	**What are the standards and compliance requirements for process vents?**
63.11501(a), (b), (c)(1)(i)(vii)(viii), (c)(3)(ii), (d)(1)(3)(4)(8)	**What are the notification, recordkeeping, and reporting requirements?**
Tables to Subpart VVVVVV of Part 63	
Table 9	**Applicability of General Provisions to Subpart VVVVVV**

SECTION E.3 NESHAP

. . .

(b) . . .

(1) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Dust Collectors	Description
. . .	. . .	. . .	. . .
EUS-10	300	DC043, DC044, **DC045** ~~DC061~~, Powder 5 Baghouse	. . . ~~DC061 controls one (1) blender, one (1) screener, three (3) mixing tanks, and one (1) hopper.~~ . . .
. . .	. . .	. . .	. . .
. . .			

. . .

(7) . . .

Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
EUS-25A	5.25	DC079 (Baghouse)	Powder is weighed, mixed into a slurry, and spray dried. The process involves: **two (2)** ~~three (3)~~ electric spray dryers, two (2) mixer V-blenders, two (2) electric kilns, one (1) plate pulverizer**, seven (7) mills, five (5) screeners, one (1) air classifier, and one (1) downdraft table**~~ and one (1) wet stirred bead mill~~.

(8) One (1) CSP specialty powder R&D or manufacturing spray dryer, identified as EUS-R&D, constructed in 2026, with a maximum throughput rate of 7,332 pounds per year, controlled by dust collector DC-020A and scrubber SCR1, and exhausting inside.

(9) One (1) specialty powder operation, identified as EUS-26, constructed in 2026, controlled by baghouse, identified as DC075, in series with HEPA filters at the baghouse exhaust, and exhausting indoors.

The HEPA filters are not considered as integral to the one (1) specialty powders manufacturing operation, identified as EUS-26.

	Emission Unit ID	Maximum Throughput (lb/hr)	Control Device	Description
	EUS-26	**5.25**	**DC075 (Baghouse)**	**Powder is weighed, mixed into a slurry, and spray-dried. The process involves: one (1) jet mill, one (1) blender, three (3) screeners, one (1) attrition mill, one (1) sagger filling station.**

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E.3.2 National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing [40 CFR Part 63, Subpart CCCCCCC] [326 IAC 20]

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~~(1) 40 CFR 63.11599(a) & (b)~~
~~(2) 40 CFR 63.11600~~
~~(3) 40 CFR 63.11601~~
~~(4) 40 CFR 63.11602~~
~~(5) 40 CFR 63.11603(a), (b), (c)~~
~~(6) 40 CFR 63.11605~~
~~(7) 40 CFR 63.11606~~
~~(8) 40 CFR 63.11607~~
~~(9) Table 1~~

63.11599(a) & (b)	**Am I subject to this subpart?**
63.11600	**What are my compliance dates?**
63.11601	**What are the standards for new and existing paints and allied products manufacturing facilities?**
63.11602	**What are the performance test and compliance requirements for new and existing sources?**
63.11603(a), (b), (c)	**What are the notification, reporting, and recordkeeping requirements?**
63.11605	**What General Provisions apply to this subpart?**
63.11606	**Who implements and enforces this subpart?**
63.11607	**What definitions apply to this subpart?**
Tables to Subpart CCCCCCC of Part 63	
Table 1	**Applicability of General Provisions to Paints and Allied Products Manufacturing Area Sources**

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E.4.2 National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations [40 CFR Part 63, Subpart WWWWWW] [326 IAC 20]

. . .

~~(1) 40 CFR 63.11504(a)~~
~~(2) 40 CFR 63.11505(a), (b) & (e)~~
~~(3) 40 CFR 63.11506(a)~~
~~(4) 40 CFR 63.11507(a)(2), (f)(1) & (g)~~
~~(5) 40 CFR 63.11508(a), (b), (c)(2),(8),(9), (d)(1)(2)(4)(8)~~
~~(6) 40 CFR 63.11509~~
~~(7) 40 CFR 63.11510~~
~~(8) 40 CFR 63.11511~~
~~(9) 40 CFR 63.11512~~
~~(10) Table 1~~

63.11504(a)	**Am I subject to this subpart?**
63.11505(a), (b) & (e)	**What parts of my plant does this subpart cover?**
63.11506(a)	**What are my compliance dates?**
63.11507(a)(2), (f)(1) & (g)	**What are my standards and management practices?**
63.11508(a), (b), (c)(2),(8),(9), (d)(1)(2)(4)(8)	**What are my compliance requirements?**
63.11509	**What are my notification, reporting, and recordkeeping requirements?**
63.11510	**What General Provisions apply to this subpart?**
63.11511	**What definitions apply to this subpart?**
63.11512	**Who implements and enforces this subpart?**
Tables to Subpart WWWWWW of Part 63	
Table 1	**Applicability of General Provisions to Plating and Polishing Area Sources**

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E.5.2 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines NESHAP [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

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~~(1) 40 CFR 63.6580~~
~~(2) 40 CFR 63.6585(a), (c) & (d)~~
~~(3) 40 CFR 63.6590(a)(1)(iii)~~
~~(4) 40 CFR 63.6595(a)(1), (c)~~
~~(5) 40 CFR 63.6603(a)~~
~~(6) 40 CFR 63.6605~~
~~(7) 40 CFR 63.6625(e),(f),(h),(i)~~
~~(8) 40 CFR 63.6640~~
~~(9) 40 CFR 63.6645(a)(2)~~
~~(10) 40 CFR 63.6655 (a)(2),(5),(d),(e)(2)(3),(f)(2)~~
~~(11) 40 CFR 63.6660~~
~~(12) 40 CFR 63.6665~~
~~(13) 40 CFR 63.6670~~
~~(14) 40 CFR 63.6675~~

~~(15) Tables 2d, 6, 7 & 8~~

63.6580	**What is the purpose of subpart ZZZZ?**
63.6585(a), (c) & (d)	**Am I subject to this subpart?**
63.6590(a)(1)(iii)	**What parts of my plant does this subpart cover?**
63.6595(a)(1), (c)	**When do I have to comply with this subpart?**
63.6605	**What are my general requirements for complying with this subpart?**
63.6625(e),(f),(h),(i)	**What are my monitoring, installation, collection, operation, and maintenance requirements?**
63.6640	**How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?**
63.6645(a)(2)	**What notifications must I submit and when?**
63.6655(a)(2),(5),(d),(e)(2)(3),(f)(2)	**What records must I keep?**
63.6660	**In what form and how long must I keep my records?**
63.6665	**What parts of the General Provisions apply to me?**
63.6670	**Who implements and enforces this subpart?**
63.6675	**What definitions apply to this subpart?**
Tables to Subpart ZZZZ of Part 63	
Table 2d	**Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions**
Table 6	**Continuous Compliance With Emission Limitations, and Other Requirements**
Table 7	**Requirements for Reports**
Table 8	**Applicability of General Provisions to Subpart ZZZZ**

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E.6.2 National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning [40 CFR Part 63, Subpart T] [326 IAC 20-6]

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~~(1) 40 CFR 63.460~~
~~(2) 40 CFR 63.461~~
~~(3) 40 CFR 63.463(a), (b), (d), (e)~~
~~(4) 40 CFR 63.466(a)(1) and (b)(1)~~
~~(5) 40 CFR 63.467(a) and (b)~~
~~(6) 40 CFR 63.468(b), (d), (f) and (h)~~
~~(7) 40 CFR 63.470~~
~~(8) 40 CFR 63.471~~
~~(9) 40 CFR 63 Subpart T Appendix A - Test of Solvent Cleaning Procedures~~
~~(10) 40 CFR 63 Subpart T Appendix B - General Provisions Applicability to Subpart T~~

63.460	**Applicability and designation of source.**
63.461	**Definitions.**
63.463(a), (b), (d), (e)	**Batch vapor and in-line cleaning machine standards.**
63.466(a)(1) and (b)(1)	**Monitoring procedures.**

63.467(a) and (b)	**Recordkeeping requirements.**
63.468(b), (d), (f) and (h)	**Reporting requirements.**
63.470	**Implementation and enforcement.**
63.471	**Facility-wide standards.**
Appendices to Subpart T of Part 63	
Appendix A	**Test of Solvent Cleaning Procedures**
Appendix B	**General Provisions Applicability to Subpart T**

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on August 31, 2026.

IDEM Contact

(a) If you have any questions regarding this permit, please contact Mehul Sura, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, Indiana Government Center North, 100 North Senate Avenue, Room 13W, Indianapolis, Indiana 46204-2251, or by telephone at (317) 233-6868 or (800) 451-6027, and ask for Mehul Sura or (317) 233-6868.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/public-participation/; and the Citizens' Guide to IDEM on the Internet at: https://www.in.gov/idem/resources/citizens-guide-to-idem/.

Appendix A: Emissions Summary
Summary of Unlimited Emissions Before Integral Controls

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Emissions Units	Unlimited Potential to Emit (tons/year)									
	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Total HAPs	Single Worst Case HAP	
Powder Manufacturing Process: CSP Department EU020										
Raw Material Handling CSP	5.6E-04	2.7E-04	2.7E-04	---	---	---	---	---	---	
Raw Material Mixing CSP	negl.	negl.	negl.	---	---	---	---	---	---	
Combustion Spray Pyrolysis (CSP) operation	35.20	35.20	35.20	---	220.44	---	---	3.63	3.63	Nickel
Burners 1 to 6 Associated with EU020	2.0E-02	0.08	0.04	6.18E-03	1.03	0.06	0.87	1.9E-02	1.9E-02	Hexane
CSP Jet Mill Classifier	1.8E-03	8.7E-04	8.66E-04	---	---	---	---	0.0E+00	0.0E+00	--
Powder Handling After CSP	1.9E-03	9.2E-04	9.2E-04	---	---	---	---	4.8E-04	4.8E-04	Nickel
Ten (10) Electrically-Heated Kilns 1 to 10	---	---	---	---	11.13	---	---	---	---	
Powder Handling After Kilns	1.9E-03	9.2E-04	9.2E-04	---	---	---	---	4.8E-04	4.8E-04	Nickel
Enclosed Mills 1 to 9	2.19	0.28	0.28	---	---	---	---	0.04	0.04	Nickel
Powder Handling After Mills	3.7E-03	1.8E-03	1.8E-03	---	---	---	---	9.4E-04	9.4E-04	Nickel
5 Primary Enclosed Blenders 1 to 5	---	---	---	---	---	---	---	---	---	
Final Powder Handling	3.7E-03	1.8E-03	1.8E-03	---	---	---	---	9.4E-04	9.4E-04	Nickel
CSP R&D	7.5E-02	7.5E-02	7.5E-02	---	0.91	---	---	2.3E-02	1.5E-02	Nickel
Twenty-seven (27) Specialty Powders Manufacturing Operations*	7.96	7.96	7.96	---	---	---	---	1.63	1.83	Chromium
Two (2) Specialty Powders Manufacturing Operations (EUS-25 & EUS25A) (Not integral)	14.40	14.40	14.40	---	---	---	---	0.02	0.02	Nickel
One (1) Specialty Powders Manufacturing Operation (EUS-26) (Not integral)	1.02	1.02	1.02	---	---	---	---	0.97	0.51	Nickel
Titanium Powder Processes	35.04	35.04	35.04	---	---	---	---	0.95	0.95	Chromium
Sermatech Process	1.29	1.29	1.29	---	---	1.33	---	0.06	0.06	Chromium
Forty-four (44) Grit Blasting Units	881.62	637.27	637.27	---	---	---	---	---	---	
Dry Ice Blasting Unit (O2P3 EUG3)	1.95	1.95	1.95							
Two (2) Wet Grit Blasting Units	26.28	18.40	18.40	---	---	---	---	---	---	
Polishing Operation										
Powder Handling Operation	0.14	0.07	0.07	---	---	---	---	---	---	
Powder Mixing Operation	---	---	---	---	---	17.56	---	---	---	
Specialty ingot manufacturing process										
Material Transfer Point	4.2E-03	2.0E-03	2.0E-03	---	---	---	---	---	---	
Ingot Machining Lathe	0.22	2.2E-03	2.2E-03	---	---	---	---	0.02	0.02	Lead
Pack Diffusion Process	1.95	1.95	1.95	---	---	---	---	0.24	0.24	Hydrofluoric Acid (HF)
Operation 1, Process 1 (O1P1)	0.07	0.07	0.07	---	---	---	---	---	---	
Operation 2, Process 1 (O2P1)	0.02	0.02	0.02	---	---	---	---	---	---	
Operation 2, Process 2 (O2P2)	3.5E-05	1.7E-05	1.7E-05	---	---	0.04	---	0.79	0.79	Methanol
Operation 2, Process 4 (O2P4)	---	---	---	---	---	---	---	1.57	1.57	Hydrofluoric Acid (HF)
Bader Grinders	450.51	450.51	450.51	---	---	---	---	---	---	
Twenty-four (24) surface coating stations	105.60	105.60	105.60	---	---	---	---	77.78	49.30	Chromium
Kerosene Combustion for Surface Coating Stations	6.2E-04	4.1E-04	4.1E-04	0.02	0.01	1.1E-04	1.6E-03	2.1E-06	6.3E-07	Selenium
Physical Vapor Deposition Station (EU01T)	3.3E-04	3.3E-04	3.3E-04	---	---	---	---	---	---	
LSR1 Titanium Tetrachloride Coating Station (EU01R)	---	---	---	---	---	---	---	0.91	0.91	Hydrochloric Acid (HCl)
Thirty-three (33) natural gas-fired combustion units	0.28	1.13	1.13	0.09	14.85	0.82	12.48	0.28	0.27	Hexane
Seven (7) natural gas-fired boilers	0.27	1.10	1.10	0.09	14.47	0.80	12.15	0.27	0.26	Hexane
Degreasing	---	---	---	---	---	9.02	---	4.83	4.01	Perchloroethylene (PCE)
Vacuum Sealer	---	---	---	---	---	0.26	---	---	---	
Epoxy Kit Operation (EUS-12)	7.6E-04	3.6E-04	3.6E-04	---	---	4.03	---	---	---	
Grit Reclassifier (EU020G)	0.01	2.9E-03	2.9E-03	---	---	---	---	---	---	
Three (3) 3D Printers	negl.	negl.	negl.	---	---	---	---	negl.	negl.	Nickel
Twenty-eight (28) grinding and cutting operations	1.50	0.03	0.03	---	---	---	---	0.12	0.12	Lead
Thirteen (13) welding and thermal cutting operations	1.70	1.70	1.70	---	---	---	---	0.08	0.08	Manganese
One (1) carpenter shop	0.12	4.9E-04	2.8E-04	---	---	---	---	---	---	
Five (5) finishing units	negl.	negl.	negl.	---	---	---	---	---	---	
Diesel Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	2.5E-03	7.7E-04	Formaldehyde
Tribomet Lines (Lines #1 and #2)	---	---	---	---	---	---	---	1.38	0.62	Cobalt
Tribomet Line #3								0.04	0.02	
Scale Coating	---	---	---	---	---	0.03	---	3.2E-04	1.3E-04	Chromium
Operation 1, Process 3 (O1P3)	---	---	---	---	---	---	---	0.50	0.50	Hydrofluoric Acid (HF)
IPA Room Supporting EUS-22	---	---	---	---	---	2.92	---	---	---	
Stripping and Cleaning Operations	---	---	---	---	---	0.03	---	0.25	0.25	Hydrofluoric Acid (HF)
Two (2) hydrochloric acid (HCl) storage tanks	---	---	---	---	---	---	---	1.13	1.13	
Lubricant Application Processes	---	---	---	---	---	0.21	---	0.07	0.03	Ethylene Glycol
Total without Fugitives	**1,569.67**	**1,315.37**	**1,315.33**	**0.40**	**265.75**	**37.34**	**26.12**	**97.59**	**52.13**	**Chromium**
Paved Roads	7.98	1.60	0.39	---	---	---	---	---	---	
Total with Fugitives	**1,577.65**	**1,316.97**	**1,315.72**	**0.40**	**265.75**	**37.34**	**26.12**	**97.59**	**52.13**	**Chromium**

*The baffles, baghouses, dust collectors, and HEPA filters are considered an integral part of the Specialty Powders Manufacturing Processes and the Surface Coating Processes (unless otherwise noted). Therefore, the potential PM, PM10, and PM2.5 emissions from the surface coaters and the specialty powders manufacturing processes will continue to be calculated after consideration of the baffles, baghouses, dust collectors, and HEPA filters for purposes of determining permitting level and 326 IAC 6.5 applicability. However, for purposes of determining the applicability of Prevention of Significant Deterioration (PSD), potential emissions from the surface coaters and specialty powders manufacturing processes will continue to be calculated before consideration of the baffles, baghouses, dust collectors, and HEPA filters.

**Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

negl. = negligible

Appendix A: Emissions Summary
Summary of Limited Emissions

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Emissions Units		Limited Potential to Emit (tons/year)									
		PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Total HAPs	Single Worst Case HAP	
Powder Manufacturing Process: CSP Department EU020											
	Raw Material Handling CSP	5.6E-04	2.7E-04	2.7E-04	---	---	---	---	---	---	
	Raw Material Mixing CSP	negl.	negl.	negl.	---	---	---	---	---	---	
	Combustion Spray Pyrolysis (CSP) operation	**10.00**	**10.00**	**10.00**	---	55.44	---	---	3.63	3.63	Nickel
	Burners 1 to 6 Associated with EU020	2.0E-02	0.08	0.04	6.2E-03	1.03	0.06	0.87	1.9E-02	1.9E-02	Hexane
	CSP Jet Mill Classifier	1.8E-03	8.66E-04	8.66E-04	---	---	---	---	0.00	0.00	--
	Powder Handling After CSP	1.9E-03	9.2E-04	9.2E-04	---	---	---	---	4.8E-04	4.8E-04	Nickel
	Ten (10) Electrically-Heated Kilns 1 to 10	---	---	---	---	11.13	---	---	---	---	
	Powder Handling After Kilns	1.9E-03	9.2E-04	9.2E-04	---	---	---	---	4.8E-04	4.8E-04	Nickel
	Enclosed Mills 1 to 9	2.19	0.28	0.28	---	---	---	---	0.04	0.04	Nickel
	Powder Handling After Mills	3.7E-03	1.8E-03	1.8E-03	---	---	---	---	9.4E-04	9.4E-04	Nickel
	5 Primary Enclosed Blenders 1 to 5	---	---	---	---	---	---	---	---	---	
	Final Powder Handling	3.7E-03	1.8E-03	1.8E-03	---	---	---	---	9.4E-04	9.4E-04	Nickel
CSP R&D		3.7E-04	3.7E-04	3.7E-04	---	0.09	---	---	1.1E-04	7.7E-05	Nickel
Twenty-nine (29) Specialty Powders Manufacturing Operations**		7.96	7.96	7.96	---	---	---	---	1.63	1.83	Chromium
Two (2) Specialty Powders Manufacturing Operations (EUS-25 & EUS25A) (Not integral)		14.40	14.40	14.40	---	---	---	---	0.02	0.02	Nickel
One (1) Specialty Powders Manufacturing Operation (EUS-26) (Not integral)		1.02	1.02	1.02	---	---	---	---	0.97	0.51	Nickel
Titanium Powder Processes[1] [2]		**3.50**	**3.50**	**3.50**	---	---	---	---	0.95	0.95	Chromium
Sermatech Process		1.29	1.29	1.29	---	---	1.33	---	0.06	0.06	Chromium
Forty-four (44) Grit Blasting Units[1] [2]		**95.65**	**16.77**	**16.77**	---	---	---	---	---	---	
Dry Ice Blasting Unit (O2P3 EUG3)		1.95	1.95	1.95							
Two (2) Wet Grit Blasting Units[1] [2]		**0.96**	**0.96**	**0.96**	---	---	---	---	---	---	
Polishing Operation											
	Powder Handling Operation	0.14	0.07	0.07	---	---	---	---	---	---	
	Powder Mixing Operation	---	---	---	---	---	17.56	---	---	---	
Specialty ingot manufacturing process											
	Material Transfer Point	4.2E-03	2.0E-03	2.0E-03	---	---	---	---	---	---	
	Lathe	0.22	2.2E-03	2.2E-03	---	---	---	---	0.02	0.02	Lead
Pack Diffusion Process		1.95	1.95	1.95	---	---	---	---	0.24	0.24	Hydrofluoric Acid (HF)
Operation 1, Process 1 (O1P1)		0.07	0.07	0.07	---	---	---	---	---	---	
Operation 2, Process 1 (O2P1)		0.02	0.02	0.02	---	---	---	---	---	---	
Operation 2, Process 2 (O2P2)		3.5E-05	1.7E-05	1.7E-05	---	---	0.04	---	0.79	0.79	Methanol
Operation 2, Process 4 (O2P4)		---	---	---	---	---	---	---	1.57	1.57	Hydrofluoric Acid (HF)
Bader Grinders[1] [2]		**1.35**	**1.35**	**1.35**	---	---	---	---	---	---	
Twenty-four (24) surface coating stations** [4]		31.04	30.71	30.71	---	---	---	---	**2.86**	**2.85**	Cobalt
Kerosene Combustion for Surface Coating Stations		6.2E-04	4.1E-04	4.1E-04	0.02	0.01	1.1E-04	1.6E-03	2.1E-06	6.3E-07	Selenium
Physical Vapor Deposition Station (EU01T)		3.3E-04	3.3E-04	3.3E-04	---	---	---	---	---	---	
LSR1 Titanium Tetrachloride Coating Station (EU01R)		---	---	---	---	---	---	---	0.91	0.91	Hydrochloric Acid (HCl)
Thirty-three (33) natural gas-fired combustion units		0.28	1.13	1.13	0.09	14.85	0.82	12.48	0.28	0.27	Hexane
Seven (7) natural gas-fired boilers		0.27	1.10	1.10	0.09	14.47	0.80	12.15	0.27	0.26	Hexane
Degreasing		---	---	---	---	---	9.02	---	4.83	4.01	Perchloroethylene (PCE)
Vacuum Sealer		---	---	---	---	---	0.26	---	---	---	
Epoxy Kit Operation (EUS-12)		7.6E-04	3.6E-04	3.6E-04	---	---	4.03	---	---	---	
Grit Reclassifier (EU020G)		0.01	2.9E-03	2.9E-03	---	---	---	---	---	---	
Three (3) 3D Printers		negl.	negl.	negl.	---	---	---	---	negl.	negl.	Nickel
Twenty-eight (28) grinding and cutting operations		1.50	0.03	0.03	---	---	---	---	0.12	0.12	Lead
Thirteen (13) welding and thermal cutting operations		1.70	1.70	1.70	---	---	---	---	0.08	0.08	Manganese
One (1) carpenter shop		0.12	4.9E-04	2.8E-04	---	---	---	---	---	---	
Five (5) finishing units		negl.	negl.	negl.	---	---	---	---	---	---	
Diesel Emergency Generators		0.21	0.21	0.21	0.19	2.91	0.24	0.63	2.5E-03	7.7E-04	Formaldehyde
Tribomet Lines (Lines #1 and #2)		---	---	---	---	---	---	---	1.38	0.62	Cobalt
Tribomet Line #3									0.04	0.02	
Scale Coating		---	---	---	---	---	0.03	---	3.2E-04	1.3E-04	Chromium
Operation 1, Process 3 (O1P3)		---	---	---	---	---	---	---	0.50	0.50	Hydrofluoric Acid (HF)
IPA Room Supporting EUS-22		---	---	---	---	---	2.92	---	---	---	
Stripping and Cleaning Operations		---	---	---	---	---	0.03	---	0.25	0.25	Hydrofluoric Acid (HF)
Two (2) hydrochloric acid (HCl) storage tanks		---	---	---	---	---	---	---	1.13	1.13	Hydrochloric Acid (HCl)
Lubricant Application Processes		---	---	---	---	---	0.21	---	0.07	0.03	Ethylene Glycol
Total		**177.85**	**96.56**	**96.52**	**0.40**	**99.93**	**37.34**	**26.12**	**22.6**	**4.2**	**Cobalt**
Paved Roads		7.98	1.60	0.39	---	---	---	---	---	---	
Total with Fugitives*		**185.82**	**98.16**	**96.92**	**0.40**	**99.93**	**37.34**	**26.12**	**22.6**	**4.2**	**Cobalt**

*Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

**The controls for these emission units have been determined to be integral to the process (unless otherwise noted). Therefore, the unlimited and limited PTE for the purposes of Part 70 applicability were calculated after control.

***Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

(1) These units have 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) limitations for PM.

(2) These units have 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP) limitations for PM10 and PM2.5

(3) This unit has a 326 IAC 2-8 (FESOP) limitation for NOx.

(4) EU20A and EU07B do not have integral control devices. These units have 326 IAC 2-2 (PSD) limitations for PM and 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP) limitations for PM10 and PM2.5.

Shaded cells indicate limits.

Appendix A: Emissions Summary
Source-wide HAPs

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00069
Permit Reviewer: Mehul Sura

	Total	Antimony	Titanium Tetrachloride	Cobalt	Chromium	Mn	Ni	Lead	Cadmium	Chromium	HF	Arsenic	Beryllium	Cadmium	Mercury	Selenium	HCl		Methanol	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Xylene	1,3-Butadiene	Acetaldehyde	Acrolein	Total PAH	Ethylene Glycol	1,2-Epoxybutane Emissions	p-dichloro benzene Emissions	PCE Emissions
Raw Material Handling CSP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raw Material Mixing CSP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Combustion Spray Pyrolysis (CSP) operation	0.027	-	-	-	-	0.01	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burners 1 to 6 Associated with EU020	0.006	-	-	-	-	1.31E-06	7.21E-06	1.72E-06	3.78E-06	4.81E-06	-	-	-	-	-	-	-	-	-	7.21E-06	4.12E-06	2.56E-04	6.18E-03	1.17E-05	-	-	-	-	-	-	-	-	-
CSP Jet Mill Classifier	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Powder Handling After CSP	0.001	-	-	-	-	2.32E-04	4.85E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ten (10) Electrically-Heated Kilns 1 to 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Powder Handling After Kilns	0.001	-	-	-	-	2.32E-04	4.85E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enclosed Mills 1 to 9	0.102	-	-	-	-	0.09	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Powder Handling After Mills	0.001	-	-	-	-	2.31E-04	4.84E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Primary Enclosed Blenders 1 to 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Final Powder Handling	0.001	-	-	-	-	4.84E-04	4.84E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CSP R&D	0.023	-	-	-	-	0.01	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Twenty-seven (27) Specialty Powders Manufacturing Operations[2]	3.357	-	-	0.25	1.32	0.18	1.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Two (2) Specialty Powders Manufacturing Operations (EU5-25 & EU525A1)	0.206	-	-	0.00	-	0.18	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
One (1) Specialty Powders Manufacturing Operation (EUS-26) (Not Integral)	2.499	-	-	0.51	0.51	0.51	0.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium Powder Processes	0.946	-	-	-	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sermatech Process	0.055	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forty-four (44) Grit Blasting Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dry Ice Blasting Unit (O2P3 EU03)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Two (2) Wet Grit Blasting Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polishing Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Powder Handling Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Powder Mixing Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specialty ingot manufacturing process	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Transfer Point	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ingot Machining Lathe	0.017	-	-	-	-	-	-	1.69E-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pack Diffusion Process	0.237	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation 1, Process 1 (O1P1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation 2, Process 1 (O2P1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation 2, Process 2 (O2P2)	0.788	-	-	-	0.00	-	0.00	-	-	-	-	-	-	-	-	-	-	-	0.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation 2, Process 4 (O2P4)	1.566	-	-	-	-	-	-	-	-	-	1.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bader Grinders	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Twenty-four (24) surface coating stations	2.87	-	-	2.85	-	-	0.01	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kerosene Combustion for Surface Coating Stations	0.000	-	-	-	1.26E-07	2.53E-07	1.26E-07	3.79E-07	1.26E-07	-	-	1.68E-07	1.26E-07	1.26E-07	1.26E-07	6.32E-07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Vapor Deposition Station (EU01T)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LSR1 Titanium Tetrachloride Coating Station (EU01R)	0.909	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thirty-three (33) natural gas-fired combustion units	0.260	-	-	-	-	5.64E-05	3.12E-04	7.43E-05	1.63E-04	2.08E-04	-	-	-	-	-	-	-	-	-	3.12E-04	1.78E-04	1.11E-02	2.67E-01	5.05E-04	-	-	-	-	-	-	-	-	-
Seven (7) natural gas-fired boilers	0.273	-	-	-	-	5.50E-05	3.04E-04	7.23E-05	1.59E-04	2.03E-04	-	-	-	-	-	-	-	-	-	3.04E-04	1.74E-04	1.09E-02	2.60E-01	4.92E-04	-	-	-	-	-	-	-	-	-
Degreasing	4.829	-	-	-	-	-	-	-	-	-	7.87E-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.15E-02	-	4.01
Vacuum Sealer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Epoxy Kit Operation (EUS-12)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grit Reclassifier (EU020G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Three (3) 3D Printers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Twenty-eight (28) grinding and cutting operations	0.115	-	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thirteen (13) welding and thermal cutting operations	0.076	-	-	-	-	0.076475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
One (1) carpenter shop	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Five (5) finishing units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diesel Emergency Generators	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.12E-04	-	7.74E-04	-	2.68E-04	1.87E-04	2.57E-05	5.03E-04	6.07E-05	1.10E-04	-	-	-	-
Tribomet Lines (Lines #1 and #2)	1.375	-	-	0.62	-	-	0.17	-	-	0.49	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tribomet Line #3	0.066	-	-	-	-	-	0.04	-	-	0.02	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scale Coating	0.000	-	-	9.64E-05	1.29E-04	-	9.64E-05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation 1, Process 3 (O1P3)	0.502	-	-	-	-	-	-	-	-	-	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IPA Room Supporting EUS-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stripping and Cleaning Operations	0.251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Two (2) hydrochloric acid (HCl) storage tanks	1.132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lubricant Application Processes	0.067	0.02	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	0.03	-	-	-	-
	22.6	**0.02**	**-**	**4.2**	**2.83**	**1.04**	**2.88**	**0.14**	**0.00**	**0.62**	**3.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.38**	**-**	**0.79**	**0.00**	**0.00**	**0.02**	**0.53**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.03**	**-**	**4.01**

Appendix A: Emissions Summary
Modification Summary

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Unlimited Potential to Emit (tons/year)

Process	PM	PM10	PM2.5	SO2	NOX	VOC	CO	Total	Single HAP	
Spray Dryer (EUS-R&D)	0.075	0.075	0.075	-	0.905	-	-	0.023	0.015	Nickel
Specialty Powder Operation (EUS-26)	1.020	1.020	1.020	-	-	-	-	0.969	0.510	Nickel
Two (2) hydrochloric acid (HCl) storage tanks	-	-	-	-	-	-	-	1.13	1.13	HCl
Specialty Powder R&D operation (EUS-25A)	0.540	0.540	0.540	-	-	-	-	0.001	0.001	Nickel
Total	**1.63**	**1.63**	**1.63**	**0.00**	**0.91**	-	-	**1.13**	**1.13**	HCl

#REF!

Combustion Spray Pyrolysis (CSP) R&D Operation

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Calculation of Process Rates and Masses

CSP R&D	Solids Weight Rate (kg/yr)	Fraction of Solids to Dust Collector (%)	Weight % Mn	Weight % Ni	Weight % Total HAPs	Weight % Nitrogen in Solids	Solids to Abatement (kg/yr)	Mn (kg/yr)	Ni (kg/yr)	Total HAPs (kg/yr)	Nitrogen Oxides Formed (kg/yr)
	3333.00	2%	0.20%	0.42%	0.62%	0.75%	68.0	6.8	13.9	20.7	821.0

CSP R&D	Uncontrolled PM/PM10/ PM2.5 Emissions (tons/yr)	Uncontrolled Mn HAP Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Uncontrolled Total HAP Emissions (tons/yr)	Uncontrolled NOx Emissions (tons/yr)	Dust Collector Control Efficiency	Controlled PM/PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)	SCR NOx Control Efficiency	Controlled NOx Emissions (tons/yr)
	0.07	**0.01**	**0.02**	**0.02**	**0.91**	99.5%	0.00	0.00	0.000	0.00	90%	0.09

METHODOLOGY FOR CALCS:

Fraction of solids to dust collector and weight % nitrogen are based mass balances on a similar process at another Linde facility. 7332.6

Percent HAPs based on worst-case HAP contents of batches in production.

PM/PM10/PM2.5 Emissions to Abatement (kg/yr) = Solids Weight Rate (kg/yr) x Fraction of solids to dust collector (%)

NOx Emissions to Abatement (kg/yr) = Solids Weight Rate (kg/yr) x Weight % Nitrogen x Molecular Weight of NO2 x 1/ Molecular Weight of N x 1 - SCR NOx control efficiency

Emissions to Abatement (lbs/hr) = Emissions to Abatement (kg/hr) x (2.20462 lbs/kg)

Uncontrolled Emissions (tons/yr) = Emissions to Abatement (kg/yr) x (2.20462 lbs/kg) / (2,000 lbs/ton)

Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) x (1-Control Efficiency)

Appendix A: Emissions Summary
Hydrochloric Acid Storage Tanks

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Building	Wastewater Treatment	Tank	Material	Tank Capacity (gal)	Turnovers/Year	Amount Used per Year (gal)	Density (lbs/gal)	HF Content (%)	HCl Content (%)	HCl Emissions (tons/yr)	Combined HAP Emissions (tons/yr)
1415	Hydrochloric Acid Storage Tanks	1	Hydrochloric Acid	150	2	300	9.93	0%	38%	0.57	0.57
		2	Hydrochloric Acid	150	2	300	9.93	0%	38%	0.57	0.57
							Total PTE (tons/yr):			**1.13**	**1.13**

METHODOLOGY:

Tank capacities and turnovers per year were provided by Linde.
The densities are the densities for pure hydrochloric acid, as a worst-case scenario.

Emissions (tons/yr)= Tank Capacity (gal) x Turnovers per Year x Density (lbs/gal) x Content (%)

Appendix A: Emissions Summary
Burner Associated with EU020

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Heat Input Capacity MMBtu/hr	
Burner #4	0.4
Burner #5	0.4
Burner #6	0.4
Total:	**1.20**

Potential Throughput

MMCF/yr
10.31

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.01	0.04	0.04	0.00	0.52	0.03	0.43
Control Efficiency (%)	99.5%	99.5%	99.5%	0%	90%	0%	0%
Controlled Emissions in tons/yr	0.00	0.00	0.00	0.00	0.05	0.03	0.43

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.08E-05	6.18E-06	3.86E-04	9.28E-03	1.75E-05

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.58E-06	5.67E-06	7.21E-06	1.96E-06	1.08E-05

The five highest organic and metal HAPs emission factors are provided above. **Total HAPs:** **9.72E-03**

METHODOLOGY

Note: The CSP Burner is routed to an abatement system with a dust collector (particulate control eff = 99.5%) and an SCR (NOx control eff = 90%).
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Controlled Emissions (tons/yr) = Emissions (tons/yr) x (1- Control Efficiency)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (29
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
EU020 - Three (3) Kilns 8, 9, and 10

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch Time (hours) = 20

[1]NO Formed (kg)	[4]NO_2 Formed (kg)	[2]% NO/ NO2 Generated in Kiln vs. CSP	[4]NO Emissions (kg)	[4]NO_2 Emissions (kg)	NO Emissions (kg/hr)	NO_2 Emissions (kg/hr)	NOx Emissions (kg/hr)	NOx Emissions (lbs/hr)	NOx Emissions (tons/yr)
32.325	198.27	1%	0.32325	1.9827	0.02	0.10	0.12	0.25	1.11
								Total for 4 Kilns:	**3.34**

[1]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.

[2]Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:

NO/NO2 Emissions (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in Kiln vs. CSP
NO/NO2 Emissions (kg/hr) = NO/NO2 Emissions (kg) / Batch Time (hours)
NOx Emissions (kg/hr) = NO Emissions (kg/hr) + NO2 Emissions (kg/hr)
Uncontrolled NOx Emissions (tons/yr) = NOx Emissions (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Summary
Combustion Spray Pyrolysis (CSP) Operation

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Calculation of Process Rates and Masses

Batch Time (hours) = 20

Batch	Number of Batches	Solution Weight		Solids Weight		Weight Water Evaporated in Dryer		Oxides Weight	
		Weight for All Batches (kg)	Process Rate for all Batches (kg/hr)	For all Batches (kg)	For all Batches per Hour (kg/hr)	For all Batches (kg)	Process Rate for all Batches (kg/hr)	For all Batches (kg)	Process Rate for all Batches (kg/hr)
Batches 1-6	6	1732.57	86.63	907.84	45.39	824.73	41.24	308.32	15.42

METHODOLOGY FOR DETERMINING PROCESS RATES AND MASSES:

Weight per batch for Solutions, Solids, and Oxides fare based on stoichiometry. Assume 100% evaporation of water and 100% conversion to oxides.
Weight Water Evaporated for all batches (kg) = Solution Weight for all Batches (kg) - Solid Weight for all Batches (kg/batch)
Weight per hour (kg/hr) = Weight (kg/batches) / Batch Time (hours)

Abatement System Calculations:

Percent Product Captured in Collection System[1]	95%
Percent of Solids to Abatement System[2]	80.3%
Percent of Oxides to Abatement System[2]	19.6%
Batch Time (hours) =	20

Batch	Solids Weight (kg)	Oxides Weight (kg)	Fraction Oxides to Solids	Solids to Abatement (kg)	Oxides to Abatement (kg)	[3]Water to Abatement (kg)	[4]NO Formed (kg)	[4]NO_2 Formed (kg)	% NO/ NO2 Generated in CSP vs Kiln	[4]NO to Abatement (kg)	[4]NO_2 to Abatement (kg)
Batches 1-6	907.84	308.32	0.34	36.45	3.02	824.73	32.325	198.27	99%	32.00175	196.2873

Batch	Solids to Abatement (kg/hr)	Oxides to Abatement (kg/hr)	[5]Weight % Mn in Solids	[5]Weight % Ni in Solids	[5]Weight % Total HAPs in Solids	[5]Weight % Mn in Oxides	[5]Weight % Ni in Oxides	[5]Weight % Total HAPs in Oxides
Batches 1-6	1.8	0.15	8.13%	16.37%	16.37%	23.53%	51.18%	51.18%

Batch	Mn to Abatement (kg/hr)	Ni to Abatement (kg/hr)	Total HAPs to Abatement (kg/hr)	Water to Abatement (kg/hr)	NO to Abatement (kg/hr)	NO_2 to Abatement (kg/hr)	NOx to Abatement (kg/hr)	PM/PM10/ PM2.5 to Abatement (lbs/hr)	Mn to Abatement (lbs/hr)	Ni to Abatement (lbs/hr)	Total HAPs to Abatement (lbs/hr)	NOx to Abatement (lbs/hr)
Batches 1-6	0.18	0.38	0.38	41.24	1.60	9.81	11.41	4.02	0.41	0.83	0.83	25.16

Batch	Uncontrolled PM/PM10/ PM2.5 Emissions (tons/yr)	Uncontrolled Mn HAP Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Uncontrolled Total HAP Emissions (tons/yr)	Uncontrolled NOx Emissions (tons/yr)	Dust Collector Control Efficiency	Controlled PM/PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)	SCR Control Efficiency	Controlled NOx Emissions (tons/yr)
Batches 1-6	**17.60**	**1.77**	**3.63**	**3.63**	**110.22**	99.5%	0.09	0.01	0.018	0.02	90%	11.02
PM, PM10, and PM2.5 Limitations								326 2-8 FESOP Required control efficiency			18.4%	89.94
	lb/hr	ton/yr									lb/hr	ton/yr
PSD and FESOP Required limitations	**2.28**	**10.00**						326 2-8 NOx FESOP Required limitations			**12.66**	**55.44**

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC-020A	4,000	0.0006	YES

[1]The product in the dryer is captured by a collection system. Any product not captured goes to the abatement system.

[2]Based on a similar process, it is known that in the 5% air escaping, a smaller percentage of the solids and oxides are present in the escaped air than what is present in the captured product. 80.3% of the total solids and 19.6% of oxides will be in the 5% air to abatement.

[3]Assume 100% evaporation of water in dryers.

[4]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.

[5]Based on worst-case HAP contents of batches.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:

Solids and oxides weights from "Process Rates and Masses" above.
Fraction Oxides to Solids = Theoretical Oxides Weight (kg) / Theoretical Solids Weight (kg)
Solids to Abatement (kg) = Solids Weight (kg) x (1- Percent Captured in Collection System) x Percent of Solids to Capture System

NO/NO2 to Abatement (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in CSP vs. Kiln
*Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.
Solids/Oxides/Water/NO/NO2 to Abatement (kg/hr) = Solids/Oxides/Water/NO/NO2 to Abatement (kg) / Batch Time (hours)
HAP to Abatement (kg/hr) = [Solids to Abatement (kg/hr) x Weight % HAP in Solids] + [Oxides to Abatement (kg/hr) x Weight % HAP in Oxides]
NOx to Abatement (kg/hr) = NO to Abatement (kg/hr) + NO2 to Abatement (kg/hr)
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Emissions to Abatement (lbs/hr) = Emissions to Abatement (kg/hr) x (2.20462 lbs/kg)
Uncontrolled Emissions (tons/yr) = Emissions to Abatement (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) x (1-Control Efficiency)

Appendix A: Emissions Summary
Combustion Spray Pyrolysis (CSP) Operation

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Calculation of Process Rates and Masses

Batch Time (hours) = 20

Batch	Number of Batches	Solution Weight		Solids Weight		Weight Water Evaporated in Dryer		Oxides Weight	
		Weight for All Batches (kg)	Process Rate for all Batches (kg/hr)	For all Batches (kg)	For all Batches per Hour (kg/hr)	For all Batches (kg)	Process Rate for all Batches (kg/hr)	For all Batches (kg)	Process Rate for all Batches (kg/hr)
Batches 7-12	6	1732.57	86.63	907.84	45.39	824.73	41.24	308.32	15.42

METHODOLOGY FOR DETERMING PROCESS RATES AND MASSES:
Weight per batch for Solutions, Solids, and Oxides fare based on stoichiometry. Assume 100% evaporation of water and 100% conversion to oxides.
Weight Water Evaporated for all batches (kg) = Solution Weight for all Batches (kg) - Solid Weight for all Batches (kg/batch)
Weight per hour (kg/hr) = Weight (kg/batches) / Batch Time (hours)

Abatement System Calculations:

Percent Product Captured in Collection System[1] 95%
Percent of Solids to Abatement System[2] 80.3%
Percent of Oxides to Abatement System[2] 19.6%
Batch Time (hours) = 20

Batch	Solids Weight (kg)	Oxides Weight (kg)	Fraction Oxides to Solids	Solids to Abatement (kg)	Oxides to Abatement (kg)	[3]Water to Abatement (kg)	[4]NO Formed (kg)	[4]NO_2 Formed (kg)	% NO/ NO2 Generated in CSP vs Kiln	[4]NO to Abatement (kg)	[4]NO_2 to Abatement (kg)
Batches 7-12	907.84	308.32	0.34	36.45	3.02	824.73	32.325	198.27	99%	32.00175	196.2873

Batch	Solids to Abatement (kg/hr)	Oxides to Abatement (kg/hr)	[5]Weight % Mn in Solids	[5]Weight % Ni in Solids	[5]Weight % Total HAPs in Solids	[5]Weight % Mn in Oxides	[5]Weight % Ni in Oxides	[5]Weight % Total HAPs in Oxides
Batches 7-12	1.8	0.15	8.13%	16.37%	16.37%	23.53%	51.18%	51.18%

Batch	Mn to Abatement (kg/hr)	Ni to Abatement (kg/hr)	Total HAPs to Abatement (kg/hr)	Water to Abatement (kg/hr)	NO to Abatement (kg/hr)	NO_2 to Abatement (kg/hr)	NOx to Abatement (kg/hr)	PM/PM10/ PM2.5 to Abatement (lbs/hr)	Mn to Abatement (lbs/hr)	Ni to Abatement (lbs/hr)	Total HAPs to Abatement (lbs/hr)	NOx to Abatement (lbs/hr)
Batches 7-12	0.18	0.38	0.38	41.24	1.60	9.81	11.41	4.02	0.41	0.83	0.83	25.16

Batch	Uncontrolled PM/PM10/ PM2.5 Emissions (tons/yr)	Uncontrolled Mn HAP Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Uncontrolled Total HAP Emissions (tons/yr)	Uncontrolled NOx Emissions (tons/yr)	Dust Collector Control Efficiency	Controlled PM/PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)	SCR Control Efficiency	Controlled NOx Emissions (tons/yr)
Batches 7-12	**17.60**	**1.77**	**3.63**	**3.63**	**110.22**	99.5%	0.09	0.01	0.018	0.02	90%	11.02
PM, PM10, and PM2.5 Limitations								326 2-8 FESOP Required control efficiency			18.4%	89.94
	lb/hr	ton/yr									lb/hr	ton/yr
PSD and FESOP Required limitations	**2.28**	**10.00**						326 2-8 NOx FESOP Required limitations			**12.66**	**55.44**

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC-020A	4,000	0.0006	YES

[1]The product in the dryer is captured by a collection system. Any product not captured goes to the abatement system.
[2]Based on a similar process, it is known that in the 5% air escaping, a smaller percentage of the solids and oxides are present in the escaped air than what is present in the captured product. 80.3% of the total solids and 19.6% of oxides will be in the 5% air to abatement.
[3]Assume 100% evaporation of water in dryers.
[4]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.
[5]Based on worst-case HAP contents of batches.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:
Solids and oxides weights from "Process Rates and Masses" above.
Fraction Oxides to Solids = Theoretical Oxides Weight (kg) / Theoretical Solids Weight (kg)
Solids to Abatement (kg) = Solids Weight (kg) x (1- Percent Captured in Collection System) x Percent of Solids to Capture System

NO/NO2 to Abatement (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in CSP vs. Kiln
*Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.
Solids/Oxides/Water/NO/NO2 to Abatement (kg/hr) = Solids/Oxides/Water/NO/NO2 to Abatement (kg) / Batch Time (hours)
HAP to Abatement (kg/hr) = [Solids to Abatement (kg/hr) x Weight % HAP in Solids] + [Oxides to Abatement (kg/hr) x Weight % HAP in Oxides]
NOx to Abatement (kg/hr) = NO to Abatement (kg/hr) + NO2 to Abatement (kg/hr)
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Emissions to Abatement (lbs/hr) = Emissions to Abatement (kg/hr) x (2.20462 lbs/kg)
Uncontrolled Emissions (tons/yr) = Emissions to Abatement (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) x (1-Control Efficiency)

Appendix A: Emissions Summary
EU020 - Raw Material Handling CSP

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Processes	Throughput (lbs/hr)*	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)
4 Batchs	12.37	0.0069	0.0033	0.0002	0.0001
2 Batchs	6.19	0.0069	0.0033	0.0001	0.0000
6 Batchs	18.56	0.0069	0.0033	0.0003	0.0001
	18.56		**Total:**	**0.0006**	**0.0003**

METHODOLOGY:

*The throughput is based on the batch weights for dry materials. There are a total of 6 batches with a combined total weight of 18.56 pounds. None of the dry materials contain HAPs.

**Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
EU020 - Three (3) Kilns 1, 2, and 3

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch Time (hours) = 20

[1]NO Formed (kg)	[4]NO_2 Formed (kg)	[2]% NO/ NO2 Generated in Kiln vs. CSP	[4]NO Emissions (kg)	[4]NO_2 Emissions (kg)	NO Emissions (kg/hr)	NO_2 Emissions (kg/hr)	NOx Emissions (kg/hr)	NOx Emissions (lbs/hr)	NOx Emissions (tons/yr)
32.325	198.27	1%	0.32325	1.9827	0.02	0.10	0.12	0.25	1.11
								Total for 3 Kilns:	**3.34**

[1]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.

[2]Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:

NO/NO2 Emissions (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in Kiln vs. CSP
NO/NO2 Emissions (kg/hr) = NO/NO2 Emissions (kg) / Batch Time (hours)
NOx Emissions (kg/hr) = NO Emissions (kg/hr) + NO2 Emissions (kg/hr)
Uncontrolled NOx Emissions (tons/yr) = NOx Emissions (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Summary
EU020 - Four (4) Kilns 4, 5, 6, and 7

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch Time (hours) = 20

[1]NO Formed (kg)	[4]NO_2 Formed (kg)	[2]% NO/ NO2 Generated in Kiln vs. CSP	[4]NO Emissions (kg)	[4]NO_2 Emissions (kg)	NO Emissions (kg/hr)	NO_2 Emissions (kg/hr)	NOx Emissions (kg/hr)	NOx Emissions (lbs/hr)	NOx Emissions (tons/yr)
32.325	198.27	1%	0.32325	1.9827	0.02	0.10	0.12	0.25	1.11
								Total for 4 Kilns:	**4.45**

[1]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.

[2]Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:

NO/NO2 Emissions (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in Kiln vs. CSP
NO/NO2 Emissions (kg/hr) = NO/NO2 Emissions (kg) / Batch Time (hours)
NOx Emissions (kg/hr) = NO Emissions (kg/hr) + NO2 Emissions (kg/hr)
Uncontrolled NOx Emissions (tons/yr) = NOx Emissions (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Summary
Enclosed Mills 1 to 3

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch	Powder Handling after Kiln Throughput (lbs/hr)	PM Emissions Handling after Kiln (lbs/hr)	Milling Throughput (lbs/hr)
Batches 1, 2, 3, 4, 5, and 6	127.35	0.00044	127.35

Batch	Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3, 4, 5, and 6	127.35	2.40	0.31	0.67	0.09	12.03%	25.19%	**0.08**	**0.02**	**0.02**

Batch	[2]Controlled PM Emissions (tons/yr)	[2]Controlled PM10/PM2.5 Emissions (tons/yr)	[2]Controlled Mn Emissions (tons/yr)	[2]Controlled Ni Emissions (tons/yr)	[2]Total Controlled HAP Emissions (tons/yr)
Batches 1, 2, 3, 4, 5, and 6	0.03	0.00	0.00	0.00	0.01

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

[2]The milling operation is completely enclosed. Any emissions from milling would be during loading and unloading. Unloading and loading is already accounted for in "Powder Handling after Kiln" and Powder Handling After Milling" calculations.

METHODOLOGY:

Throughput (lbs/hr) = Powder Handling after Kiln Throughput (lbs/hr) - [Handling after Kiln PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]

Emission factors for particulates are from Table 11.24, Metallic Minerals Processing, SCC 3-03-024-10, for dry grinding without air conveying and/ or air classification.

Total HAPs are based on worst-case HAP.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)

Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Pre-kiln Enclosed Mills

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Process	Milling Throughput (lbs/hr)
Two (2) enclosed pre-kiln mills 4 and 5	169.80
Total	169.80

Process	Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Ten (10) Enclosed Kiln Mills	169.80	2.40	0.31	0.89	0.12	12.03%	25.19%	**0.11**	**0.03**	**0.03**

Process	[2]Controlled PM Emissions (tons/yr)	[2]Controlled PM10/PM2.5 Emissions (tons/yr)	[2]Controlled Mn Emissions (tons/yr)	[2]Controlled Ni Emissions (tons/yr)	[2]Total Controlled HAP Emissions (tons/yr)
10 Enclosed Post Kiln Mills	0.04	0.01	0.01	0.00	0.01

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

[2]The milling operation is completely enclosed. Any emissions from milling would be during loading and unloading. Unloading and loading is already accounted for in "Powder Handling after Kiln" and Powder Handling After Milling" calculations.

METHODOLOGY:

Throughput (lbs/hr) = Powder Handling after Kiln Throughput (lbs/hr) - [Handling after Kiln PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]

Emission factors for PM and PM10/2.5 from AP42 Table 11.7-1 and WebFIRE, SCC 3-05-008-02 for Crushing, Grinding, & Milling during Ceramic Clay/Tile Manufacture

Total HAPs are based on worst-case HAP.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)

Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Post-Kiln Enclosed Mills

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Process	Milling Throughput (lbs/hr)
Four (4) Enclosed Post Kiln Mills 6 to 9	120.00
Total	120.00

Process	Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Ten (10) Enclosed Kiln Mills	120.00	2.40	0.31	**0.63**	**0.08**	12.03%	25.19%	**0.08**	**0.02**	**0.02**

Process	[2]Controlled PM Emissions (tons/yr)	[2]Controlled PM10/PM2.5 Emissions (tons/yr)	[2]Controlled Mn Emissions (tons/yr)	[2]Controlled Ni Emissions (tons/yr)	[2]Total Controlled HAP Emissions (tons/yr)
10 Enclosed Post Kiln Mills	0.03	0.00	0.00	0.00	0.00

Limtis for all Enclosed Mills 1-9

PM Limitations		
	lb/hr	ton/yr
PSD and FESOP Required limitations	**1.14**	**5.00**

	Haps	
	lb/hr	ton/yr
PSD and FESOP Required limitations	**0.46**	**2.00**

PM10 and PM2.5 Limitations		
	lb/hr	ton/yr
PSD and FESOP Required limitations	**0.68**	**3.00**

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

[2]The milling operation is completely enclosed. Any emissions from milling would be during loading and unloading. Unloading and loading is already accounted for in "Powder Handling after Kiln" and Powder Handling After Milling" calculations.

METHODOLOGY:

Throughput (lbs/hr) = Powder Handling after Kiln Throughput (lbs/hr) - [Handling after Kiln PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
Emission factors for PM and PM10/2.5 from AP42 Table 11.7-1 and WebFIRE, SCC 3-05-008-02 for Crushing, Grinding, & Milling during Ceramic Clay/Tile Manufacture
Total HAPs are based on worst-case HAP.
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Burner Associated with EU020

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Heat Input Capacity MMBtu/hr	
Burner #1	0.4
Burner #2	0.4
Total:	**0.80**

Potential Throughput

MMCF/yr
6.87

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	**0.01**	**0.03**	**0.03**	**0.00**	**0.34**	**0.02**	**0.29**
Control Efficiency (%)	99.5%	99.5%	99.5%	0%	90%	0%	0%
Controlled Emissions in tons/yr	0.00	0.00	0.00	0.00	0.03	0.02	0.29

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	7.21E-06	4.12E-06	2.58E-04	6.18E-03	1.17E-05

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.72E-06	3.78E-06	4.81E-06	1.31E-06	7.21E-06

The five highest organic and metal HAPs emission factors are provided above. **Total HAPs:** **6.48E-03**

METHODOLOGY

Note: The CSP Burner is routed to an abatement system with a dust collector (particulate control eff = 99.5%) and an SCR (NOx control eff = 90%).
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Controlled Emissions (tons/yr) = Emissions (tons/yr) x (1- Control Efficiency)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (29
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Burner Associated with EU020

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Heat Input Capacity MMBtu/hr	
Burner #3	0.4
Total:	**0.40**

Potential Throughput

MMCF/yr
3.44

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	**0.00**	**0.01**	**0.01**	**0.00**	**0.17**	**0.01**	**0.14**
Control Efficiency (%)	99.5%	99.5%	99.5%	0%	90%	0%	0%
Controlled Emissions in tons/yr	0.00	0.00	0.00	0.00	0.02	0.01	0.14

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.61E-06	2.06E-06	1.29E-04	3.09E-03	5.84E-06

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	8.59E-07	1.89E-06	2.40E-06	6.53E-07	3.61E-06

The five highest organic and metal HAPs emission factors are provided above. **Total HAPs:** **3.24E-03**

METHODOLOGY

Note: The CSP Burner is routed to an abatement system with a dust collector (particulate control eff = 99.5%) and an SCR (NOx control eff = 90%).
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Controlled Emissions (tons/yr) = Emissions (tons/yr) x (1- Control Efficiency)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (29
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
EU020 Powder Handling After CSP

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Percent Product Captured in Collection System[1] 95%
Batch Time (hours) = 20

Batch	Solids Weight (kg)	Oxides Weight (kg)	Total Powder (kg)	Total Powder Captured (kg)	Powder Throughput (lbs/hr)	Weight % Mn in Solids	Weight % Ni in Solids	Weight % Mn in Oxides	Weight % Ni in Oxides	Weight % Mn in Powder	Weight % Ni in Powder
Batches 1, 2, 3, 4, 5, and 6	907.84	308.32	1216.16	1155.35	127.36	8.13%	16.37%	23.53%	51.18%	12.03%	25.19%

[1]The powder product is captured by a collection system. Any product not captured goes to the abatement system.
[2]See "Emission Calculations for CSP" for reference in determining manganese and nickel compositions.
See "Emission Calculations for CSP" for reference in determining powder from CSP.

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Mn Composition (Weight %)	Ni Composition (Weight %)	Uncontrolled Mn HAP Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3, 4, 5, and 6	127.36	0.0069	0.0033	**0.0019**	**0.0009**	12.03%	25.19%	**2.32E-04**	**4.85E-04**	**4.85E-04**

Batch	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn HAP Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Total Controlled HAP Emissions (tons/yr)
Batches 1, 2, 3, 4, 5 and 6	99.9%	0.000002	0.000001	2.32E-07	4.85E-07	4.85E-07

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC-033	4,000	0.0000	YES

METHODOLOGY:
Powder Throughput (lbs/hr) = Total Powder Captured (kg) x (2.20462 lbs/kg) / Batch Time
Weight % HAP in powder = [(Solids Weight (kg) x Weight % HAP in Solids) + (Oxides Weight (kg) x Weight % HAP in Oxides)] / (Solids Weight (kg) + Oxides Weight (kg))
Total HAPs are based on worst-case HAP.
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
EU020- Powder Handling After Kiln

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch	Powder Handling after CSP Throughput (lbs/hr)	PM Emissions Handling after CSP (lbs/hr)	Powder Handling after Kiln Throughput (lbs/hr)
Batches 1, 2, 3,4 ,5 and 6	127.36	0.00044	127.35

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3, 4, 5, and 6	127.35	0.0069	0.0033	**0.0019**	**0.0009**	12.03%	25.19%	**2.32E-04**	**4.85E-04**	**4.85E-04**

Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled HAP Emissions (tons/yr)
99.9%	0.0000	0.00000	0.00	0.00	0.00

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC033	4,000	0.00	YES

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

METHODOLOGY:
Throughput (lbs/hr) = Powder Handling after CSP Throughput (lbs/hr) - [CSP PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
EU020- Powder Handling After Mill

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch	Milling Throughput (lbs/hr)	Milling PM Emissions (lbs/hr)	Powder Handling after Milling Throughput (lbs/hr)
Batches 1, 2, 3, 4, 5 ,and 6	127.35	0.15	127.20

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3, 4, 5, and 6	127.20	0.0069	0.0033	**1.92E-03**	**9.19E-04**	12.03%	25.19%	**2.31E-04**	**4.84E-04**	**4.84E-04**

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

Batch	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn HAP Emissions (tons/yr)	Controlled Ni HAP Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	99.9%	1.92E-06	9.19E-07	2.31E-07	4.84E-07	4.84E-07

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC033	4,000	0.00	YES

METHODOLOGY:

Throughput (lbs/hr) = Milling Throughput (lbs/hr) - [Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
EU020- Powder Handling After Mill

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Process	Milling Throughput (lbs/hr)	Milling PM Emissions (lbs/hr)	Powder Handling after Milling Throughput (lbs/hr)
Handling After Mill	120.00	0.14	119.86

Process	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Handling After Mill	119.86	0.0069	0.0033	**1.81E-03**	**8.66E-04**	12.03%	25.19%	**2.18E-04**	**4.56E-04**	**4.56E-04**

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

Process	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn HAP Emissions (tons/yr)	Controlled Ni HAP Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
Handling After Mill	99.9%	1.81E-06	8.66E-07	2.18E-07	4.56E-07	4.56E-07

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC033	4,000	0.00	YES

METHODOLOGY:

Throughput (lbs/hr) = Milling Throughput (lbs/hr) - [Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
EU020- Jet Mill Classifier

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Process	Milling Throughput (lbs/hr)	Milling PM Emissions (lbs/hr)	Powder Handling after Milling Throughput (lbs/hr)
CSP Jet Mill Classifier	120.00	0.14	119.86

Process	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
CSP Jet Mill Classifier	119.86	0.0069	0.0033	**1.81E-03**	**8.66E-04**	0.00%	0.00%	**0.00E+00**	**0.00E+00**	**0.00E+00**

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

Process	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn HAP Emissions (tons/yr)	Controlled Ni HAP Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
CSP Jet Mill Classifier	99.9%	1.81E-06	8.66E-07	0.00E+00	0.00E+00	0.00E+00

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC080	4,000	0.00	YES

METHODOLOGY:

Throughput (lbs/hr) = Milling Throughput (lbs/hr) - [Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
EU020- Final Powder Handling

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch	Powder Handling after Milling Throughput (lbs/hr)	Powder Handling After Milling PM Emissions (lbs/hr)	Final Powder Handling Throughput (lbs/hr)
Batches 1, 2, 3 and 4	127.20	0.00044	127.20

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	127.20	0.0069	0.0033	**0.0019**	**0.0009**	12.03%	25.19%	**4.84E-04**	**4.84E-04**	**4.84E-04**
	127.20									

Batch	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	99.9%	1.92E-06	9.19E-07	4.84E-07	4.84E-04	4.84E-07

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC033	4,000	0.00	YES

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

METHODOLOGY:

Throughput (lbs/hr) = Powder Handling after Milling Throughput (lbs/hr) - [Powder Handling after Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
EU020- Final Powder Handling

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Batch	Powder Handling after Milling Throughput (lbs/hr)	Powder Handling After Milling PM Emissions (lbs/hr)	Final Powder Handling Throughput (lbs/hr)
Final Handling	119.86	0.00041	119.86

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Final Handling	119.86	0.0069	0.0033	**0.0018**	**0.0009**	12.03%	25.19%	**4.56E-04**	**4.56E-04**	**4.56E-04**
	119.86									

Batch	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
Final Handling	99.9%	1.81E-06	8.66E-07	4.56E-07	4.56E-04	4.56E-07

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC030	4,000	0.00	YES

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

METHODOLOGY:

Throughput (lbs/hr) = Powder Handling after Milling Throughput (lbs/hr) - [Powder Handling after Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emissions Summary
Grit Blasting

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-40712-00060
Permit Reviewer: Mehul Sura

Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	0.70

Location	Grit Blaster ID	Dust Collector ID	Grit Type	Max Throughput (lbs/hr)	PM Emission Factor (lbs/lb grit)	PM10/ PM2.5 Emission Factor (lbs/lb grit)	Dust Collector Control Efficiency	Uncontrolled Potential PM Emissions (tons/yr)	Uncontrolled Potential PM10 & PM2.5 Emissions (tons/yr)	Controlled Potential PM Emissions (tons/yr)	Controlled Potential PM10 & PM2.5 Emissions (tons/yr)
1245 Main Street	EU09C	C09C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU001G	C001G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU002G	C002G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU004G	C004G	Aluminum Oxide	600	0.010	0.007	99.97%	26.28	18.40	0.01	0.01
	EU005G	C005G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU008G	C008G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU010G	C010G	Aluminum Oxide	600	0.010	0.007	99.97%	26.28	18.40	0.01	0.01
	EU011G	C011G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU013G	C013G	Aluminum Oxide	200	0.010	0.007	99%	8.76	6.13	0.09	0.06
	EU014G	C014G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU016G	C016G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU018G	C018G	Aluminum Oxide	600	0.041	0.0287	99%	107.75	75.42	1.08	0.75
	EU019G	C019G	Aluminum Oxide	600	0.041	0.0287	99%	107.75	75.42	1.08	0.75
	EU007G	C007G	Silicon Carbide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU012G	C012G	Aluminum Oxide	50	0.010	0.007	99%	2.19	1.53	0.02	0.02
	EU01M	C01M	Fine Grit	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU02M	C02M	Fine Grit	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU01L	C01L	Shot Peen	5.36	0.004	0.86	99%	0.09	20.19	0.00	0.20
	EU01GB	C01GB	Glass Bead	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU02GB	C02GB	Glass Bead	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU021G	DC021G	Aluminum Oxide	120	0.010	0.007	99%	5.26	3.68	0.05	0.04
	EU02L	DC02L	Shot Peen	5.36	0.004	0.00344	99%	0.09	0.08	0.00	0.00
1415 Main Street	EU01C	C01C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU04C	C04C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU05C	C05C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU06C	C06C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU07C	C07C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU08C	C08C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU10C	C10C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU12C	C12C	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU16C	C16C	Aluminum Oxide	600	0.010	0.007	99.7%	26.28	18.40	0.08	0.06
	EU03C	C03C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU01M	C01M	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	O1P1 EUG6	CG6	Aluminum Oxide	173	0.010	0.007	99.7%	7.58	5.30	0.02	0.02
	O1P1 EUG7	CG7	Aluminum Oxide	81	0.010	0.007	99.7%	3.55	2.48	0.01	0.01
	O2P1 EUG1	CG1/2	Aluminum Oxide	224	0.010	0.007	99.7%	9.81	6.87	0.03	0.02
	O2P1 EUG2		Aluminum Oxide	224	0.010	0.007	99.7%	9.81	6.87	0.03	0.02
	O2P1 EUG3	CG3/4	Aluminum Oxide	81	0.010	0.007	99.7%	3.55	2.48	0.01	0.01
	O2P1 EUG5	CG5	Aluminum Oxide	50	0.010	0.007	99.7%	2.19	1.53	0.01	0.00
	O2P3 EUG1	CG1	Calcined Alumina	221	0.010	0.007	99.7%	9.68	6.78	0.03	0.02
	O2P3 EUG2	CG2	Calcined Alumina	221	0.010	0.007	99.7%	9.68	6.78	0.03	0.02
	EU11C	C11C	Silicon Carbide	180	0.010	0.007	99.0%	7.88	5.52	0.08	0.06
	EU21	C21	Aluminum Oxide	50	0.010	0.007	99.7%	2.19	1.53	0.01	0.00
1500 Polco Street	EU13C	C13C	Aluminum Oxide	129	0.010	0.007	99.7%	5.65	3.96	0.02	0.01
							Total PTE (tons/yr):	**881.62**	**637.27**		
										Total Controlled PTE (tons/yr):	**7.68**	**5.58**

								PSD Minor Limits		**FESOP Limits**	
Location	Number of Blasters	Grit Blaster ID	Control ID	Airflow (acfm)	Controlled PM Emissions (gr/dscf)	Able to Comply with 326 IAC 6.5		PSD PM Limit (lb/hr)	PSD PM Limit (ton/yr)	FESOP PM10 & PM2.5 Limit (lbs/hr)	FESOP PM10 & PM2.5 Limit (ton/yr)
1245 Main Street	1	EU09C	C09C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU001G	C001G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU002G	C002G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU004G	C004G	4,000	0.0001	YES		0.50	2.17	0.09	0.38
	1	EU005G	C005G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU008G	C008G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU010G	C010G	4,000	0.0001	YES		0.50	2.17	0.09	0.38
	1	EU011G	C011G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU013G	C013G	4,000	0.0006	YES		0.50	2.17	0.09	0.38
	1	EU014G	C014G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU016G	C016G	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU018G	C018G	4,000	0.0072	YES		0.50	2.17	0.09	0.38
	1	EU019G	C019G	4,000	0.0072	YES		0.50	2.17	0.09	0.38
	1	EU012G	C012G	4,000	0.0001	YES		0.50	2.17	0.09	0.38
	1	EU007G	C007G	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU01M	C01M	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU02M	C02M	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU01L	C01L	4,000	0.0000	YES		0.50	2.17	0.09	0.38
	1	EU01GB	C01GB	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU02GB	C02GB	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU021G	DC021G	4,000	0.0004	YES		0.50	2.17	0.09	0.38
	1	EU02L	DC02L	4,000	0.0000	YES		0.50	2.17	0.09	0.38
1415 Main Street	1	EU01C	C01C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU04C	C04C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU05C	C05C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU06C	C06C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU07C	C07C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU08C	C08C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU10C	C10C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU12C	C12C	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	EU16C	C16C	4,000	0.0005	YES		0.50	2.17	0.09	0.38
	1	EU03C	C03C	4,000	0.0011	YES		0.50	2.17	0.09	0.38
	1	EU01M	C01M	4,000	0.0018	YES		0.50	2.17	0.09	0.38
	1	O1P1 EUG6	CG6	4,000	0.0002	YES		0.50	2.17	0.09	0.38
	1	O1P1 EUG7	CG7	4,000	0.0001	YES		0.50	2.17	0.09	0.38
	1	O2P1 EUG1	CG1/2	4,000	0.0002	YES		0.50	2.17	0.09	0.38
	1	O2P1 EUG2		4,000	0.0002	YES		0.50	2.17	0.09	0.38
	1	O2P1 EUG3	CG3/4	4,000	0.0001	YES		0.50	2.17	0.09	0.38
	1	O2P1 EUG5	CG5	4,000	0.0000	YES		0.50	2.17	0.09	0.38
	1	O2P3 EUG1	CG1	4,000	0.0002	YES		0.50	2.17	0.09	0.38
	1	O2P3 EUG2	CG2	4,000	0.0002	YES		0.50	2.17	0.09	0.38
	1	EU11C	C11C	4,000	0.0005	YES		0.50	2.17	0.09	0.38
	1	EU21	C21	4000	0.0005	YES		0.50	2.17	0.09	0.38
1500 Polco Street	1	EU13C	C13C	4,000	0.0001	YES		0.50	2.17	0.09	0.38
	44						**Total PTE (tons/yr):**	**---**	**95.65**	**---**	**16.77**

Methodology
Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Potential PTE (ton/yr) = Max Throughput (lb/hr) x Emission Factor (lbs/lb grit) x (1- Control Efficiency) x (8,760 hr/yr) / (2,000 lbs/ton)

Notes
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Tribomet Line #3 (Building 1415)

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Tank ID	Materials	Amount in Tank	Units	Amount Added per Month	Units	Total Added per Year (lbs/yr)	Density (lbs/gal)	Estimated Evaporation Rate	Total Emissions (lbs/yr)	VOC Content	HCl Content (%)	Nickel Compound Content (%)	Chromium Compound Content (%)	Uncontrolled PTE VOC (tons/yr)	Uncontrolled PTE HCl (tons/yr)	Uncontrolled PTE Nickel Compounds (tons/yr)	Uncontrolled PTE Chromium Compounds (tons/yr)
2	HCl	33.1	lbs	1	lbs	12.00	8.96	20%	2.40	0%	35%	0%	0%	0.00	0.00	0.00	0.00
	Nickel Chloride	385.8	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
3	Sulfuric Acid	33.1	lbs	1	lbs	12.00	15.31	7%	0.84	0%	0%	0%	0%	0.00	0.00	0.00	0.00
5	Nickel Sulfate	275.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	100%	0%	0.00	0.00	0.01	0.00
	Nickel Cloride	38.6	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
	Boric Acid	38.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
	SCBN 60/80 Grit	2.5	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
6	Nickel Sulfate	275.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	100%	0%	0.00	0.00	0.01	0.00
	Nickel Cloride	38.6	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
	Boric Acid	33.1	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
	TM329 Powder	22.0	lbs	5	lbs	60.00		20%	12.00	0%	0%	0%	70%	0.00	0.00	0.00	0.00
7	Nickel Sulfate	275.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	100%	0%	0.00	0.00	0.01	0.00
	Nickel Cloride	38.6	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
	Boric Acid	33.1	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
	TM329 Powder	22.0	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	70%	0.00	0.00	0.00	0.00
8	Nickel Sulfate	275.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	100%	0%	0.00	0.00	0.01	0.00
	Nickel Cloride	38.6	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
	Boric Acid	33.1	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
	TM329 Powder	22.0	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	70%	0.00	0.00	0.00	0.00
9	Nickel Sulfate	275.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	100%	0%	0.00	0.00	0.01	0.00
	Nickel Cloride	38.6	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
	Boric Acid	33.1	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
	TM329 Powder	22.0	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	70%	0.00	0.00	0.00	0.00
10	Nickel Sulfate	275.6	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	100%	0%	0.00	0.00	0.01	0.00
	Nickel Cloride	38.6	lbs	1	lbs	12.00	*	20%	2.40	0%	0%	100%	0%	0.00	0.00	0.00	0.00
	Boric Acid	33.1	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	0%	0.00	0.00	0.00	0.00
	TM329 Powder	22.0	lbs	5	lbs	60.00	*	20%	12.00	0%	0%	0%	70%	0.00	0.00	0.00	0.00
													Total Uncontrolled PTE (tons/yr)	**0.00**	**0.00**	**0.04**	**0.02**
													Control Efficiency	99.50%	99.50%	99.50%	99.50%
													Total Controlled PTE (tons/yr)	0.00	0.0000	0.0002	0.0001

Methodology:

*Density not provided in SDS and/or solid material

**Tanks are changed out once every 2 years.

The Tribomet line #3 is controlled by a scrubber system with a control efficiency of 99.5%

Total Amount Added Per Year (lbs/yr)

For amounts given in lbs:

Total Amount (lbs/yr) = Amount Added per Month (lbs/month) x (12 months/yr)

Total Emissions = Amount Added per Year (lbs/yr) x Evaporation Rate (%)

Evaporation rate of 20% is a conservative engineering estimate, based on the amount that is added per month compared to the tank contents. The evaporation percentage is not an exact ratio of the amount added divided by the tank contents, because the percentage accounts for the portion of the liquid that remains on the product or is wasted.

Appendix A: Emissions Summary
Vacuum Sealer VS1

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Solvent	**Solvent Usage** *(gal/yr)*	**Density** *(lb/gal)*	**% VOC**	**VOC Usage** *(gal/yr)*	**VOC** *(lb/hr)*	**VOC** *(ton/yr)*
Damisol-3500	55	9.40	100%	55	0.06	0.26
Total					0.06	**0.26**

Methodology
Solvent Usage (gal/yr) = Solvent Usage (gal/wk) *52
% VOC and Density (lb/gal) from SDS sheet
VOC (gal/yr) = Solvent Usage (gal/yr) * % VOC
VOC (ton/yr) = VOC (gal/yr) * Density (lb/gal) * (1 ton/ 2000 lbs)
Solvent contains no HAPs per the SDS.

Appendix A: Emissions Summary
Degreasing/Solvent Cleaning

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Location	Emission Unit ID	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Max Gal of Mat. Added (gal/yr)	Waste Material (gal/yr)	Pounds VOC per gallon of solvent less water	Pounds VOC per gallon of solvent	Potential VOC tons per year
Cold Cleaner Degreasers												
1245 Main Street	Maintenance Parts Washer	Safety Kleen Solvent	6.80	100.00%	0.0%	100.0%	0.0%	10.00	0.00	6.80	6.80	0.03
1415 Main Street	Maintenance Parts Washer	Safety Kleen Solvent	6.80	100.00%	0.0%	100.0%	0.0%	10.00	0.00	6.80	6.80	0.03
	Operation 1 and 2 Machine Shop Parts Washer	Safety Kleen Solvent	6.80	100.00%	0.0%	100.0%	0.0%	180.00	0.00	6.80	6.80	0.61
Conveyorized Vapor Degreasers												
1415 Main Street	Two (2) Operation 2 Degreasers	Novec 72DE	10.68	100.00%	0.0%	100.0%	0.0%	410.11	0.00	10.68	10.68	2.19
	One (1) Operation 2 Degreaser	Novec 72DE	10.68	100.00%	0.0%	100.0%	0.0%	500.0	0.0	10.68	10.68	2.67
Open Top Vapor Degreasers												
1415 Main Street	LPPS Vapor Degreaser	N-Propyl Bromide	10.89	100.00%	0.0%	91.0%	0.0%	660.00	82.00	9.91	9.91	2.86
	Tribomet Line Vapor Degreaser	PCE**	13.59	100.00%	0.0%	100.0%	0.0%	660.00	165.00	0.00	0.00	0.00
		PCE**	13.59	100.00%	0.0%	100.0%	100.0%	260.00	165.00	0.00	0.00	0.00
		Inhibitor Concentrate	10.00	100.00%	0.0%	100.0%	0.0%	20.00	0.00	10.00	10.00	0.10
Manual Degreasing												
1245 Main Street	Manual Degreasing	*MEK	6.76	100.00%	0.0%	100.0%	0.0%	140.00	0.00	6.76	6.76	0.47
	Parts Washer	HDL-125	9.40	100.00%	0.0%	100.0%	0.0%	10.00	0.00	9.40	9.40	0.05
											Total Potential Emissions (tons/yr)	**9.02**

Methodology
Pounds of VOC per Gallon Solvent less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Solvent = (Density (lb/gal) * Weight % Organics)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * (Max Gal of Material (gal/yr) - Waste Material (gal/yr)) * (1 ton/2000 lbs)

Notes
*Note: Praxair uses either MEK, IPA, and ZeroTri Heavy-Duty Degreaser in the Building 1245 Manual Degreasing. Therefore, MEK was used because it was worst-case for VOCs.
** Pursuant to 40 CFR 51.100(s)(1), PCE is not a VOC; however, it is considered a HAP.

HAP Emission Calculations

Location	Emission Unit ID	Material	Density	Max Gal of Material	Waste Material	Weight %	Weight %	Weight %	Weight %	Weight %	Weight %	Benzene Emissions	1,2-Epoxybutane Emissions	p-dichloro benzene Emissions	Toluene Emissions	HF Emissions	PCE Emissions
			(Lb/Gal)	(gal/yr)	(gal/yr)	Benzene	1,2-Epoxybutane	p-dichloro benzene	Toluene	HF	PCE	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
Cold Cleaner Degreasers																	
1245 Main Street	Maintenance Parts Washer	Safety Kleen Solvent	6.80	10.00	0.00	0.00005%	0.00%	0.001%	0.004%	0.00%	0.00%	1.65E-08	0.00E+00	2.09E-07	1.25E-06	0.00E+00	0
1415 Main Street	Maintenance Parts Washer	Safety Kleen Solvent	6.80	10.00	0.00	0.00005%	0.00%	0.001%	0.004%	0.00%	0.00%	1.65E-08	0.00E+00	2.09E-07	1.25E-06	0.00E+00	0
	Operation 1 and 2 Machine Shop Parts Washer	Safety Kleen Solvent	6.80	180.00	0.00	0.00005%	0.00%	0.001%	0.004%	0.00%	0.00%	2.97E-07	0.00E+00	3.75E-06	2.25E-05	0.00E+00	0
Conveyorized Vapor Degreasers																	
1415 Main Street	Two (2) Operation 2 Degreasers	Novec 72DE	10.68	410.11	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
	One (1) Operation 2 Degreaser	Novec 72DE	10.68	500.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
Open Top Vapor Degreasers																	
1415 Main Street	LPPS Vapor Degreaser	TMC-377	10.89	660.00	82.00	0.00%	1.00%	0.00%	0.00%	25.00%	0.00%	0.00E+00	3.15E-02	0.00E+00	0.00E+00	7.87E-01	0
	Tribomet Line Vapor Degreaser	PCE**	13.59	660.00	165.00	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.36
		PCE**	13.59	260.00	165.00	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.65
		Inhibitor Concentrate	10	20.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
Manual Degreasing																	
1245 Main Street	Manual Degreasing	*MEK	6.76	140.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
	Parts Washer	HDL-125	9.40	10.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
									Potential HAP Emissions (tons/yr)			**0.00E+00**	**3.15E-02**	**0.00E+00**	**0.00E+00**	**7.87E-01**	**4.01**
										Combined HAPs (tons/yr)			**4.83**				

METHODOLOGY
HAPS emission rate (tons/yr) = Density (lb/gal) * Max Gal of Material (gal/yr) * Weight % HAP * 1 ton/2000 lbs

LPPS Vapor Degreaser Prior to Modification

Location	Emission Unit ID	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Max Gal of Mat. Added (gal/yr)	Waste Material (gal/yr)	Pounds VOC per gallon of solvent less water	Pounds VOC per gallon of solvent	Potential VOC tons per year
1415 Main Street	LPPS Vapor Degreaser	Novec 72DE	10.68	100.00%	0.0%	100.0%	0.0%	660.00	82.00	10.68	10.68	3.09

LPPS Vapor Degreaser Prior to Modification

Location	Emission Unit ID	Material	Density	Max Gal of Material	Waste Material	Weight %	Weight %	Weight %	Weight %	Weight %	Weight %	Benzene Emissions	1,2-Epoxybutane Emissions	p-dichloro benzene Emissions	Toluene Emissions	Xylene Emissions	PCE Emissions
			(Lb/Gal)	(gal/yr)	(gal/yr)	Benzene	1,2-Epoxybutane	p-dichloro benzene	Toluene	Xylene	PCE	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
1415 Main Street	LPPS Vapor Degreaser	Novec 72DE	10.68	660.00	82.00	0.00%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	6.17E-02	0.00E+00	0.00E+00	0.00E+00	0

Appendix A: Emissions Summary
Building 1550 - Specialty Powders Manufacturing Operations

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Particulate Matter											
Process ID	Dust Collector	Powder Type	Throughput (lbs/hr)	Dust Collected per Year (lbs/yr)	Hours Operated per Year	Dust Collected per Hour (lbs/hr)	Dust Collector Control Efficiency	HEPA Filter Control Efficiency	Uncontrolled PM Emissions (lb/hr)	Uncontrolled PTE PM (tons/yr)	Controlled PTE PM (tons/yr)
EUS-1	DC048	Powder 1	166.67	18,000	480	37.50	99.5%	99.9%	37.69	165.08	0.83
EUS-2	DC015	Powder 2	166.67	4,077	2,446	1.67	99.5%	99.9%	1.68	7.34	0.04
EUS-7	DC028, DC013	Powder 1	83.335	857	514	1.67	99.5%	99.9%	1.68	7.34	0.04
EUP-3	DC063	Powder 2	429.3	2,500	2,952	0.85	99.5%	99.9%	0.85	3.73	0.02
EUS-3	DC064	Powder 2	429.3	3,220	750	4.29	99.5%	99.9%	4.31	18.90	0.09
EUS-5	DC012, DC013	Powder 3	312.5	20,000	800	25.00	99.5%	99.9%	25.13	110.05	0.55
EUS-8B	DC040	Powder 4	58.4	4,000	1,800	2.22	99.5%	99.9%	2.23	9.78	0.05
EUS-8A	DC041	Powder 4	58.4	24,000	3,500	6.86	99.5%	99.9%	6.89	30.19	0.15
EUS-10	DC043, DC044, DC061	Powder 5	300	15,000	4,000	3.75	99.5%	99.9%	3.77	16.51	0.08
EUP-11	DC001	Powder 5	100	75000	6,000	12.50	95.0%	0.0%	13.16	57.63	2.88
EUP-11A	DC002	Powder 5	100	5000	2,400	2.08	95.0%	0.0%	2.19	9.61	0.48
EUP-11B	DC046	Powder 5	100	30000	3,000	10.00	95.0%	99.9%	10.53	46.11	2.31
EUS-15A	DC026	Powder 2	341.66	2,500	7,320	0.34	99.5%	99.9%	0.34	1.50	0.01
EUS-15B	DC059	Powder 2	341.66	3,600	7,320	0.49	99.5%	99.9%	0.49	2.16	0.01
EUS-15C	DC060	Powder 2	341.66	3,600	7,320	0.49	99.5%	99.9%	0.49	2.16	0.01
Scale	DC026	Powder 2	341.66	1600	3,237	0.49	99.0%	99.9%	0.50	2.19	0.02
EUS-15F	DC058, DC024	Powder 2	341.66	5400	8,560	0.63	99.5%	99.9%	0.63	2.78	0.01
EUS-15G	DC021, DC057	Powder 2	341.66	1500	1,500	1.00	99.5%	99.9%	1.01	4.40	0.02
EUP-17	DC035, DC045	Powder 2	8.33	1600	4,262	0.38	99.5%	99.9%	0.38	1.65	0.01
EUS-22	DC005	Powder 7	21.606	1000	1,500	0.67	99.5%	99.9%	0.67	2.93	0.01
EUS-4A	DC006	Powder 6	429.3	2000	1,500	1.33	99.5%	99.9%	1.34	5.87	0.03
	DC007			3,220	750	4.29	99.5%	99.9%	4.31	18.90	0.09
	DC054			30,000	5,500	5.45	99.5%	99.9%	5.48	24.01	0.12
EUS-12 (High Purity Room Powder Handling)	DC014	Powder 8	100	-	-	1.00	99.0%	99.9%	1.01	4.42	0.04
EUS-15D	DC074 [3]	Powder 2	341.66	5400	8,560	0.63	99.5%	99.9%	0.63	2.78	0.01
EUS-15E	-- [1]	Powder 2	---	--	--	---	---	---	---	---	---
EUS-15H	DC075 [3]	Powder 2	341.66	5400	8,560	0.63	99.5%	99.9%	0.63	2.78	0.01
EUS-15I	DC032 [3]	Powder 2	56.94	1500	1,500	1.00	99.5%	99.9%	1.01	4.40	0.02
									Subtotal (tons/yr)	565.19	**7.96**
EUS-25	DC076, DC077, DC078 [2]	Powder	52.48	9195	2,920	3.15	99.5%	99.9%	3.16	13.86	0.07
EUS-25A	DC079 [2]	Powder	5.25	91.95	750	0.12	99.5%	99.9%	0.12	0.54	0.00
									Subtotal (tons/yr)	**14.40**	0.07
EUS-26	DC075	Powder	13.23	231.714	1,000	0.23	99.5%	99.9%	0.23	1.02	0.005
									Subtotal (tons/yr)	**1.02**	0.005

olled HAP Emissions										PTE Nickel (tons/yr)		IAC 326 6.5	
Process ID	Dust Collector	Airflow (acfm)	Number of Units	% Cobalt	% Chromium	% Nickel	% Total HAPs**	PTE Cobalt (tons/yr)	PTE Chromium (tons/yr)	0.00	Total PTE HAPs (tons/yr)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
EUS-1	DC048	4,000	1	0%	95%	0%	95%	0.00	0.78	0.02	0.78	0.0055	YES
EUS-2	DC015	4,000	1	50%	50%	50%	95%	0.02	0.02	0.00	0.03	0.0002	YES
EUS-7	DC028, DC013	4,000	1	0%	95%	0%	95%	0.00	0.03	0.01	0.03	0.0002	YES
EUP-3	DC063	4,000	1	50%	50%	50%	95%	0.01	0.01	0.05	0.02	0.0001	YES
EUS-3	DC064	4,000	1	50%	50%	50%	95%	0.05	0.05	0.00	0.09	0.0006	YES
EUS-5	DC012, DC013	4,000	1	20%	0%	0%	20%	0.11	0.00	0.00	0.11	0.0037	YES
EUS-8B	DC040	4,000	1	0%	100%	0%	100%	0.00	0.05	0.00	0.05	0.0003	YES
EUS-8A	DC041	4,000	1	0%	100%	0%	100%	0.00	0.15	0.00	0.15	0.0010	YES
EUS-10	DC043, DC044, DC061	4,000	1	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.0005	YES
EUP-11	DC001	4,000	1	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.0192	YES
EUP-11A	DC002	4,000	1	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.0032	YES
EUP-11B	DC046	4,000	1	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.0154	YES
EUS-15A	DC026	4,000	1	50%	50%	50%	95%	0.00	0.00	0.01	0.01	0.0001	YES
EUS-15B	DC059	4,000	1	50%	50%	50%	95%	0.01	0.01	0.01	0.01	0.0001	YES
EUS-15C	DC060	4,000	1	50%	50%	50%	95%	0.01	0.01	0.01	0.01	0.0001	YES
Scale	DC026	4,000	1	50%	50%	50%	95%	0.01	0.01	0.01	0.02	0.0001	YES
EUS-15F	DC058, DC024	4,000	1	50%	50%	50%	95%	0.01	0.01	0.01	0.01	0.0001	YES
EUS-15G	DC021, DC057	4,000	1	50%	50%	50%	95%	0.01	0.01	0.00	0.02	0.0001	YES
EUP-17	DC035, DC045	4,000	1	50%	50%	50%	95%	0.00	0.00	0.00	0.01	0.0001	YES
EUS-22	DC005	4,000	1	0%	44%	5%	45%	0.00	0.01	0.00	0.01	0.0001	YES
EUS-23	DC006	4,000	1	25%	5%	0%	45%	0.01	0.00		0.01	0.0002	YES
EUS-4A	DC007	4,000	1	0%	75%	20%	95%	0.00	0.07	0.02	0.09	0.0006	YES
	DC054	4,000		0%	75%	20%	95%	0.00	0.09	0.00	0.11	0.0008	YES
EUS-12 (High Purity Room Powder Handling)	DC014	4,000	1	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.0003	YES
EUS-15D	DC074 [3]	4,000	1	0%	0%	0%	0%	0.00	0.00	---	0.00	0.0001	YES
EUS-15E	-- [1]	4,000	1	50%	50%	50%	95%	---	---	0.00	---	---	---
EUS-15H	DC075 [3]	4,000	1	0%	0%	0%	0%	0.00	0.00	0.01	0.00	0.0001	YES
EUS-15I	DC032 [3]	4,000	1	50%	50%	50%	95%	0.01	0.01	0.02	0.02	0.0001	YES
EUS-25	DC076, DC077, DC078 [2]	8,500	1	4%	0%	29%	33%	0.00	0.00	0.00	0.02	0.0002	YES
EUS-25A	DC079 [2]	8,500	1	4%	0%	29%	33%	0.00	0.00	0.18	0.00	0.0000	YES
EUS-26	DC-075	4,000	1	50%	50%	50%	95%	0.51	0.51	0.51	0.97	0.000034	YES
			30				**Total (tons/yr):**	**0.76**	**1.83**	**0.87**	**2.60**	**0.05**	

Notes:
*Total HAPs were determined by subtracting the lower range % of the non-HAP materials in the MSDS from 100%.
[1] There are

[2] These units have control devices that have not been determined as integral, and will not be taking a limit to comply with 326 IAC 2-2 or 326 IAC 2-8. Their uncontrolled/unlimited PTE will be used in the calculations regarding limitations.
[3] These units have control devices that have not been determined as integral, but will be taking limits to comply with 326 IAC 2-2 and 326 IAC 2-8.
This source is only subject to the pound/hour limitations. The ton/year "limits" are for calculation purposes only and are not federally enforceable limitations.
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
All dust collectors have been determined to be integral (unless otherwise indicated)

Methodology:
Unlimited PTE for PM is calculated for 326 IAC 2-2 (PSD) purposes only. The dust collectors are integral to the processes for 326 IAC 2-7 (Part 70).
HAP PTE is based on controlled emissions because the dust collectors are integral to the processes and these HAPs are not specifically regulated by 326 IAC 2-2 (PSD).
Uncontrolled Particulate Emissions (tons/yr) = Dust Collected per Hour (lbs/hr) /(Dust Collector Control Efficiency) x (8,760 hrs/yr) / (2,000 lbs/ton)
PTE Particulate (tons/yr) = Uncontrolled Particulate Emissions (tons/yr) x (1- (Dust Collector Control Eff))
PTE HAP (tons/yr) = PTE Particulate (tons/yr) x HAP Content (%)
HAP Content is based on worst-case coatings for each powder type.

Appendix A: Emissions Summary
Titanium Powder Processes 1 and 2

Company Name:	**Linde Advanced Material Technologies, Inc.**
Source Address:	**1245 and 1415 Main Street, Indianapolis, IN 46224**
	1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.:	**097-50712-00060**
Permit Reviewer:	**Mehul Sura**

Titanium Process Emissions

Number of Processes =	2	
Amount to wet collector =	8.00	lbs/hr
Chromium Content =	2.70%	of particulates
Control Efficiency =	98.00%	

Potential Emissions Before Control

Uncontrolled Particulate Emissions (lb/hr) =	8.00	lbs/hr
Uncontrolled Particulate Emissions (ton/yr) =	**35.04**	tons/yr
Uncontrolled Chromium Emissions (ton/yr) =	**0.95**	tons/yr

Potential Emissions After Control

Controlled Particulate Emissions (lb/hr) =	0.16	lbs/hr
Controlled Particulate Emissions (ton/yr) =	0.70	tons/yr
Controlled Chromium Emissions (ton/yr) =	0.02	tons/yr

PSD Limits (PM, PM10, and PM2.5)

Limited Particulate after control (lb/hr) =	0.80	lbs/hr
Limited Particulate after control (ton/yr) =	3.50	tons/yr

FESOP Limits (PM10 and PM2.5)

Limited Particulate after control (lb/hr) =	0.80	lbs/hr
Limited Particulate after control (ton/yr) =	3.50	tons/yr

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
Rotoclone Wet Collector	4,000	0.00	YES

Methodology

Amount to wet collector provided by source.
Uncontrolled Particulate Emissions (lb/hr) = Amount to wet collector (lbs/hr)
Uncontrolled Particulate Emissions (tons/yr) = Uncontrolled Emissions (lb/hr) * 8,760 (hr/yr) * 1/2,000 (ton/lbs)
Uncontrolled Chromium Emissions (ton/yr) = Uncontrolled Partiuclate Emissions (tons/yr) * % Chromium
Controlled Particulate Emissions (lb/hr) = Uncontrolled Particulate Emissions (lb/hr) * (1 - %CE)
Controlled Particulate Emissions (ton/yr) = Controlled Particulate Emissions (lb/hr) * 8,760 * 1/2,000 (ton/lbs)
Controlled Chromium Emissions (ton/yr) = Controlled Partiuclate Emissions (tons/yr) * % Chromium
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/h

Appendix A: Emissions Summary
Dry Ice Blasting - Operation 2 Process 3 (1415 Main Street)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Dry Ice / Air Blasting (O2P3-EUG3)			
Residual Powder (lb/part)	**Maximum Production Rate (parts/week)**	**Uncontrolled PM Emissions (tons/yr)**	**Uncontrolled PM10/PM2.5 Emissions (tons/yr)**
0.5	150	**1.95**	**1.95**

METHODOLOGY:
Residual powder is dislodged from parts using a dry ice blasting cabinet.

Uncontrolled PM Emissions (ton/year) = Residual Powder (lb/part) * Maximum Production Rate (parts/week) * 52 weeks/year * (1 ton / 2,000 lbs)

Appendix A: Emissions Summary
Wet Grit Blasting

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	0.70

Location	Grit Blaster ID	Dust Collector ID	Grit Type	Max Throughput (lbs/hr)	PM Emission Factor (lbs/lb grit)	PM10/ PM2.5 Emission Factor (lbs/lb grit)	PM Mitigated by Wet Blasting[1]	Control Efficiency	Potential PM Emissions (tons/yr)	Potential PM10/ PM2.5 Emissions (tons/yr)	Controlled Potential PM Emissions (tons/yr)	Controlled Potential PM10/ PM2.5 Emissions (tons/yr)
1415 Main Street	EU14C	C14C	Aluminum Oxide	600	0.010	0.007	50%	99%	13.14	9.20	0.13	0.09
	EU15C	C15C	Aluminum Oxide	600	0.010	0.007	50%	99%	13.14	9.20	0.13	0.09
								Total PTE (tons/yr):	**26.28**	**18.40**		
										Total Controlled PTE (tons/yr):	**0.26**	**0.18**

							PSD Minor Limits		**FESOP Limits**	
Location	Number of Blasters	Grit Blaster ID	Dust Collector ID	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5	PSD PM, PM10, & PM2.5 Limit (lb/hr)	PSD PM, PM10, & PM2.5 Limit (ton/yr)	FESOP PM10 & PM2.5 Limit (lb/hr)	FESOP PM10 & PM2.5 Limit (ton/yr)
1415 Main Street	1	EU14C	C14C	4,000	0.0009	YES	0.50	2.19	0.11	0.48
	1	EU15C	C15C	4,000	0.0009	YES	0.50	2.19	0.11	0.48
	2					**Total PTE (tons/yr):**		4.38		0.96

Methodology

Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)

Potential PTE (ton/yr) = Max Throughput (lb/hr) x Emission Factor (lbs/lb grit) x (1- Control Efficiency) x (8,760 hr/yr) / (2,000 lbs/ton)

[1] Per STAPPA/ALAPCO

Appendix A: Emissions Summary
Polishing Operation: Powder Handling Operation
(Lens Polish Mixing, Suspension Room Custom Blend Loading, Suspension Room Powder Packaging, Powder Loading)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Total Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Uncontrolled PM Emissions (lbs/hr)	Uncontrolled PM10/PM2.5 Emissions (lbs/hr)	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)
9152.86	0.0069	0.0033	0.14	**0.07**	0.03	0.02	99.5%	0.00	0.00

326 IAC 6.5			
Dust Collector	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
DC030 and DC032	4,000	0.0000	YES

Information from Praxair:

-The throughput is a combined throughput for Lens Polish Mixing Tank Loading, Suspension Room Custom Blend Loading, Suspension Room Powder Packaging, and Premix. There are 4 mixing tanks in Lens Polish, but the throughput is limited to two mixing tanks, based on a bottleneck created by the bottle filling line and the pail filling line. The powder handling operations are controlled by dust collectors with a control efficiency of 99.5%. There are no HAPs in the dry materials used in the Polishing Department.

METHODOLOGY:

*Handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer

Uncontrolled Emissions (tons/yr) = Powder Throughput (lbs/hr) / (2,000 lbs/ton) * EF (lbs/ton) * (8,760 hours/year) / (2,000 lbs/ton)

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Polishing Operation: Polish Mixing Operation
(Lens Polish Mixing and Filing & Suspension Room Mixing Operation)

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Material	Weight % Volatile (H20 & Organics)	Density (Lb/Gal)	Weight % Water & Exempt Solvents	Weight % Organics	Maximum Hourly Throughput (gal/hr)	Pounds VOC per gallon of coating	Emission Rate (% Material Emitted)	VOC Potential (ton/yr)
Lens Polish Mixing Tank 1:								
Material 1	66.00%	8.35	65.9%	0.10%	0.36	0.008	0.89%	0.00
Material 2	80.00%	10.01	79.0%	1.00%	6.69	0.10	0.89%	0.03
Material 3	100.00%	8.68	0.0%	100.00%	24.77	8.68	0.89%	8.40
Potential Emissions for Lens Polish Mixing Tank 1 (tons/yr)								**8.43**
Lens Polish Mixing Tank 2:								
Material 1	66.00%	8.35	65.9%	0.10%	0.36	0.008	0.89%	0.00
Material 2	80.00%	10.01	79.0%	1.00%	6.69	0.10	0.89%	0.03
Material 3	100.00%	8.68	0.0%	100.00%	24.77	8.68	0.89%	8.40
Potential Emissions for Lens Polish Mixing Tank 2 (tons/yr)								**8.43**
Suspension Room Mixing Tank:								
Material 3	100.00%	8.68	0.0%	100.00%	1.99	8.68	0.89%	0.67
Material 4	100.00%	8.18	1.0%	99.00%	0.12	8.10	0.89%	0.04
Potential Emissions for Suspension Room Mixing Tank (tons/yr)								0.71
Total Potential Emissions (tons/yr)								**17.56**

Description of Process:

Lens Polish and Suspension Room mixing operations are used to mix various lens polishes. The Suspension Room Mixing operation is a small-scale mixing operation, and the composition of the final product is different than the Lens Polish area. There are other components of the mixtures, but they do not contain VOCs or HAPs.

Max Throughput Description:

-The batch compositions were provided by the facility.

-Maximum gallons of material is based on the usage of each chemical per batch.

-There are 4 mixing tanks in Lens Polish, but the throughput is limited to two mixing tanks, based on a bottleneck created by the bottle filling line and the pail filling line.

-There are 2 suspension room batches every 8 hours (one every 4 hours).

METHODOLOGY

Based on a material balance of the raw material in and product out, the 99.03% of the raw materials remain in the final product. Therefore, 0.97% is lost. Part of the loss is due to waste material remaining on the tank due to surface tension, and the other portion is due to air emissions. The waste remaining in the mixing tank was estimated using the "Instructions for Completing Part II of EPA Form R: Summary of Residue Quantities," and a median point was chosen between water and motor oil (water = 4 cp, motor oil = 94 cp, Material 3 = 46 cp) for dish-bottom steel tanks. The weight % of the drum's capacity that would remain on the tank and be wasted is 0.0785% of the drum's capacity, based on a median between 0.034% for water and 0.191% for motor oil. The weight % of 0.0785% was subtracted from 0.97% to determine that 0.892% of the contents are emitted.

Weight % Water & Exempt Solvents = Weight % Volatile (H20 & Organics) - Weight % Organics

Material compositions are from MSDSs.

Pounds of VOC per Gallon Material = Density (lb/gal) x Weight % Organics

VOC Potential (tons/yr) = Pounds of VOC per Gallon Material (lb/gal) x Max Gal of Material per Batch (gal/hr) / Batch Time (hrs/batch) x Emission Rate (%) x (8,760 hrs/yr) x (1 ton/2000 lbs)

Appendix A: Emissions Summary
Building 1415 - Bader Grinders

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Unit ID	Control Efficiency	Outlet Grain Loading (grains/dscf)	Air Flow Rate (cfm)	PM/PM10/PM2.5 before Controls (lbs/hr)	PM/PM10/PM2.5 before Controls (tons/yr)	PM/PM10/PM2.5 after Controls (lbs/hr)	PM/PM10/PM2.5 after Controls (tons/yr)
Bader Grinder #2	99.70%	0.003	4000	34.29	150.17	0.10	0.45
Bader Grinder #3	99.70%	0.003	4000	34.29	150.17	0.10	0.45
Bader Grinder #4	99.70%	0.003	4000	34.29	150.17	0.10	0.45
				Total:	**450.51**		1.35

					PSD Minor Limits		FESOP Limits	
Emissions Units	**Control Unit ID**	**Airflow (acfm)**	**Controlled PM Emissions (gr/ft3)**	**Able to Comply with 326 IAC 6.5**	**PSD PM, PM10, & PM2.5 Limit (lb/hr)**	**PSD PM, PM10, & PM2.5 Limit (ton/yr)**	**FESOP PM10, & PM2.5 Limit (lb/hr)**	**FESOP PM10, & PM2.5 Limit (ton/yr)**
Bader Grinder #2	C03B	4,000	0.00	YES	0.10	0.45	0.10	0.45
Bader Grinder #3	C07B	4,000	0.00	YES	0.10	0.45	0.10	0.45
Bader Grinder #4	C08B	4,000	0.00	YES	0.10	0.45	0.10	0.45
				Total:	---	**1.35**	---	**1.35**

Methodology

PM10 and PM2.5 emissions assumed equal to PM emissions.

PM/PM10/PM2.5 after Controls (lbs/hr) = [Outlet Grain Loading (grains/dscf)] * [Air Flow Rate (cfm)] * [60 min/hr] * [lb/7000 grains]

PM/PM10/PM2.5 after Integral Controls (tons/yr) = [PM/PM10/PM2.5 after Controls (lbs/hr)] * [8760 hr/yr] * [ton/2000 lb]

PM/PM10/PM2.5 before Integral Controls (lbs/hr) = [PM/PM10/PM2.5 after Controls (lbs/hr)] / [1 - control efficiency]

PM/PM10/PM2.5 before Integral Controls (tons/yr) = [PM/PM10/PM2.5 after Controls (tons/yr)] / [1 - control efficiency]

This source is only subject to the pound/hour limitations. The ton/year "limits" are for calculation purposes only and are not federally enforceable limitations.

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Surface Coating at 1245 Main Street and 1415 Main Street

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

PM, PM10, and PM2.5 Emissions												PSD Limits***		FESOP Limits		6.5 Applicability		
Location	Number of Surface Coaters	Surface Coater ID	Control Device ID	Max Throughput (lbs/hr)	Amount Collected (lbs/hr)	Control Efficiency	HEPA Filter Control Efficiency	Uncontrolled Potential PM Emissions (lbs/hr)	Uncontrolled Potential PM Emissions (tons/yr)	Controlled Potential PM Emissions (tons/yr)	PSD PM, PM10, & PM2.5 Limit (lb/hr)	PSD PM, PM10, & PM2.5 Limit (ton/yr)	FESOP PM10 & PM2.5 Limit (lb/hr)	FESOP PM10 & PM2.5 Limit (ton/yr)	Density of Coating* (lbs/gal)	Gallons of Coating Per Day (gal/day)	Applicable
Detonation Surface Coating Stations subject to NESHAP 6W																	
1245 Main Street	1	EU01A	C01A	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	---	---	---	---	100	7.72	YES
	1	EU02A	C02A	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	---	---	---	---	100	7.72	YES
	1	EU16A	C16A	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	---	---	---	---	100	7.72	YES
	1	EU17A	C17A	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	---	---	---	---	100	7.72	YES
	1	EU18A	C18A	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	---	---	---	---	100	7.72	YES
	1	EU06A	C06A	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	---	---	---	---	100	7.72	YES
Low Pressure Plasma Spray Coating Station subject to NESHAP 6W																	
1415 Main Street	1	EU01S	C01S**	44.09	0.00	99.97%	---	0.00	0.01	3.91E-06	---	---	---	---	100	10.58	YES
High Velocity Oxy Fuel Coating Stations subject to NESHAP 6W																	
1245 Main Street	1	EU19A	C19A	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU20A	C20A**	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.23	1.00	0.15	0.67	100	3.86	NO
Plasma Surface Coating Stations subject to NESHAP 6W																	
1245 Main Street	1	EU05B	C05D	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU06B	C06D	8.04	5.42	99.97%	99.99%	5.42	23.75	7.12E-07	---	---	---	---	100	1.93	NO
	1	EU10B	C10D	8.04	5.42	99.97%	99.99%	5.42	23.75	7.12E-07	---	---	---	---	100	1.93	NO
1415 Main Street	1	EU01B	C01B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU02B	C02B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU05B	C05B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU06B	C06B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU07B	C07B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	3.00	13.14	3.00	13.14	100	3.86	NO
			Baffles**	16.08	9.00	80.00%	0.00%	11.25	49.28	9.86							
	1	EU08B	C08B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU09B	C09B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
	1	EU11B	C11B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
High Velocity Oxy Fuel Coating Stations NOT subject to NESHAP 6W																	
1245 Main Street	1	EU04A	Baffles	16.08	8.68	80%	0%	10.85	47.52	9.50	---	---	---	---	100	3.86	NO
Plasma Surface Coating Stations NOT subject to NESHAP 6W																	
1245 Main Street	1	EU03B	Baffles	8.04	4.34	80%	0%	5.43	23.76	4.75	---	---	---	---	100	1.93	NO
1415 Main Street	1	EU12B	C12B	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	---	---	---	---	100	3.86	NO
1500 Polco Street	1	EU04B	No Control**	1.00	0.00	40%	0.00%	0.60	2.63	---	---	---	---	---	100	0.24	NO
	24						**Total PTE (tons/yr):**		**1174.89**	26.74							
							Total PM, PM10, and PM2.5 Emissions After Integral Control:		**105.60**								
											Total PM Emissions After PSD Limits:	**31.04**					
													Total PM10 and PM2.5 Emissions After FESOP Limits:		**30.71**		

NOTES
**The control devices are not integral for these units. Therefore, PTE is considered before controls.
Cubicles EU20A, EU13B, and EU07B have FESOP Limits. See *Limit Compliance* sheet for detailed information.
^The coating materials used are 100% solids, and are comprised of metallic and ceramic compounds. This results in high coating densities.

HAP Emissions									Controlled HAPs					Uncontrolled HAPs				
Location	Surface Coater ID	Control Device ID	Titanium Tetrachloride Content (%)	Nickel Content %	Chromium Content (%)	Cobalt Content (%)	Total HAP Content (%)	Controlled Titanium Tetrachloride Emissions (tons/yr)	Controlled Nickel Emissions (tons/yr)	Controlled Chromium Emissions (tons/yr)	Controlled Cobalt Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)	Uncontrolled Titanium Tetrachloride Emissions (tons/yr)	Uncontrolled Nickel Emissions (tons/yr)	Uncontrolled Chromium Emissions (tons/yr)	Uncontrolled Cobalt Emissions (tons/yr)	Uncontrolled Total HAP Emissions (tons/yr)
Detonation Surface Coating Stations subject to NESHAP 6W																	
1245 Main Street	EU01A	C01A	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00	0.00	47.54	71.31	0.00	90.32
	EU02A	C02A	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00	0.00	47.54	71.31	0.00	90.32
	EU16A	C16A	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00	0.00	47.54	71.31	0.00	90.32
	EU17A	C17A	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00	0.00	47.54	71.31	0.00	90.32
	EU18A	C18A	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00	0.00	47.54	71.31	0.00	90.32
	EU06A	C06A	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00	0.00	47.54	71.31	0.00	90.32
Low Pressure Plasma Spray Coating Station subject to NESHAP 6W																	
1415 Main Street	EU01S	C01S**	0%	75%	50%	0%	98%	---	---	---	---	---	0.00	0.01	0.01	0.00	0.01
High Velocity Oxy Fuel Coating subject to NESHAP 6W																	
1245 Main Street	EU19A	C19A	0%	0%	0%	20%	20%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.89	7.89
	EU20A	C20A**	0%	50%	75%	0%	95%	0.00	5.91E-07	8.87E-07	0.00	1.12E-06	0.00	19.72	29.57	0.00	37.46
Plasma Surface Coating Stations subject to NESHAP 6W																	
1245 Main Street	EU05B	C05D	0%	0%	20%	75%	79%	0.00	0.00E+00	2.37E-07	0.00	0.00	0.00	0.00	4.75	17.81	18.76
	EU06B	C06D	0%	0%	20%	75%	79%	0.00	0.00	1.42E-07	0.00	0.00	0.00	0.00	4.75	17.81	18.76
	EU10B	C10D	0%	0%	20%	75%	79%	0.00	0.00	1.42E-07	0.00	0.00	0.00	0.00	4.75	17.81	18.76
1415 Main Street	EU01B	C01B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
	EU02B	C02B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
	EU05B	C05B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
	EU06B	C06B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
	EU07B	C07B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
		Baffles**	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	EU08B	C08B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
	EU09B	C09B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
	EU11B	C11B	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00	0.00	19.72	19.72	19.72	37.46
High Velocity Oxy Fuel Coating Stations NOT subject to NESHAP 6W																	
1245 Main Street	EU04A	Baffles	0%	0%	0%	20%	20%	0.00	0.00	0.00	1.90	1.90	0.00	0.00	0.00	9.50	9.50
Plasma Surface Coating Stations NOT subject to NESHAP 6W																	
1245 Main Street	EU03B	Baffles	0%	0%	0%	20%	20%	0.00	0.00	0.00	0.95	0.95	0.00	0.00	0.00	4.75	4.75
1415 Main Street	EU12B	C12B	0%	0%	0%	0%	0%	0.00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500 Polco Street	EU04B****	No Control	0%	0%	0%	0%	0%	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
							HAPs Emissions After Integral Control and Before FESOP Limits:	**0.00**	**39.44**	**49.30**	**22.57**	**77.78**					
							HAPs Emissions After Integral Control and FESOP Limits:	**0.00**	**0.01**	**0.01**	**2.85**	**2.86**					

Methodology:
Maximum Throughput, Amount Collected, and Control Efficiencies are from the source.
Uncontrolled Potential Particulate Emissions (tons/yr) = [Amount Collected (lbs/hr) / Dust Collector Control Efficiency (%)] x (8,760 hrs/year) / (2,000 lbs/hr)
Controlled Potential Particulate Emissions (tons/yr) = Uncontrolled Potential Emissions (tons/yr) x [(1-Dust Collector Control Efficiency (%)) x (1 - HEPA Filter Efficiency (%))]*
*If no HEPA Filter, use [1 - Dust Collector Control Efficiency(%)]

Controlled HAP Emissions (tons/yr) = Controlled Potential Particulate Emissions (tons/yr) x HAP Content (%)
HAP Content is based on worst-case coatings.
All HAPs are from particulate matter.

Spray Type:	Coating:
D-Gun	CRC-104
HVOF	WC-559
1245 Plasma	CO-111
1245 Plasma-EU03B	WC-106
1415 Plasma	CO-159
LPPS	NI-535-2
1500 Plasma*****	YO-118
1500 Plasma*****	151.065 Ta
1500 Plasma*****	ZRO-113

*Note that the coating booths with baffles do not use coatings containing chromium or nickel HAPs per 40 CFR Part 63, Subpart WWWWWW.
**Total HAPs were determined by subtracting the lower range % of the non-HAP materials in the MSDS from 100%.
***The HVOF, D-Gun, and Plasma coating operations involve gas explosions. In the HVOF and and Plasma coaters, hydrogen gas is exploded. In the D-Gun coaters, acetylene is exploded. There are no HAPs or criteria pollutants generated by the exploded gas. Kerosene is used in EU08B and EU19A. Calculations are provided in a separate spreadsheet for kerosene combustion.
****Cubicle EU04B is only operated for production purposes sparingly. A conservative estimate of the max throughput was calculated with a throughput of 219 lbs/month (given by Praxair) and converting to 0.30 lbs/day. Then, 0.30lbs/day was multiplied by ~ 3 to achieve a conservative throughput estimate of 1 lbs/hour. This cubicle is operated without an emission control device. Therefore, the control efficiency is substituted with a transfer efficiency of 40% given by Praxair.
*****There are 3 different coatings used in the EU04B cubicle. Per the SDSs, the plasma coatings used in EU04B contain no HAPs.

Appendix A: Emissions Summary
Kerosene Combustion Only
MM BTU/HR <100

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Location	Equipment Name	gal/month
1415	Kerosene used in EU08B	26
1245	Kerosene used in EU19A	26
	Total Capacity (gal/month)	52
	Total Capacity (kgal/month)	0.052
	Heating Value (MMBtu/gal)	0.135
	Total Capacity (MMBtu/month)	7.0

S = Weight % Sulfur: 0.5

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/kgal	2.0	1.3	1.3	71.0 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	**6.24E-04**	**4.06E-04**	**4.06E-04**	**2.22E-02**	**6.24E-03**	**1.06E-04**	**1.56E-03**

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/MMBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	1.68E-07	1.26E-07	1.26E-07	1.26E-07	3.79E-07

	HAPs - Metals, continued			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/MMBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	1.26E-07	2.53E-07	1.26E-07	6.32E-07

The five highest organic and metal HAPs emission factors are provided above. **Total HAPs:** **2.06E-06**

Appendix A: Emissions Summary
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
34.59	297.09

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	**0.28**	**1.13**	**1.13**	**0.09**	**14.85**	**0.82**	**12.48**

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics					
	Benzene	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**	
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	3.12E-04	1.78E-04	1.11E-02	2.67E-01	5.05E-04	**Total HAPs**
						0.28

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.43E-05	1.63E-04	2.08E-04	5.64E-05	3.12E-04

The five highest organic and metal HAPs emission factors are provided above.

Emission Unit ID	Maximum Capacity (MMBtu/hr)
1245 Main Street	
Heaters for the Kolene tank	0.15
	0.15
Kiln for LSR1	0.15
1415 Main Street	
RTU-A2	0.36
RTU-A3	0.36
RTU-F	0.115
RTU-C1	0.25
RTU-E1	0.525
RTU-B2	0.525
RTU-A5	0.525
RTU-A6	0.525
ACPR4-1	0.133
ACPR4-2	0.115
RTU-00	0.587
ACPR1-1	0.117
ACPR1-2	0.117
RTU-B1	0.3
RTU-A-1	0.3
RTU-A7	0.699
RTU-E1	0.18
RTU-D2	0.54
RTU-C1	0.27
1550 Polco Street	
EU001	3
EU002	3
EU003	3
EU004	3
EU005	3
EU006	3
EU007	3
EU008	3
EU009	3
EUP-11	0.3
EUP-11A	0.3
Total	**34.59**

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supp
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Summary
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
33.69	289.36

Emission Unit ID	Maximum Capacity (MMBtu/hr)
1500 Polco Street Powerhouse	
EU002	8.369
EU003	8.369
EU004	14.645
1550 Polco Street	
B-001	1.26
B-002	0.150
B-003	0.45
B-004	0.45
Total	**33.69**

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.27	1.10	1.10	0.09	14.47	0.80	12.15

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics					
	Benzene	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**	
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	3.04E-04	1.74E-04	1.09E-02	2.60E-01	4.92E-04	**Total HAPs**
						0.27

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.23E-05	1.59E-04	2.03E-04	5.50E-05	3.04E-04

The five highest organic and metal HAPs emission factors are provided above.

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supp
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emissions Summary
Building 1550 Specialty Ingot Manufacturing Process - Material Transfer Point

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Powder Throughput (lb/hr)	PM EF (lb/ton)	PM10/PM2.5 EF (lb/ton)	Uncontrolled PM PTE (tons/yr)	Uncontrolled PM10/PM2.5 PTE (tons/yr)	Control Efficiency (%)	Controlled PM PTE (tons/yr)	Controlled PM10/PM2.5 PTE (tons/yr)
275.00	0.0069	0.0033	**0.0042**	**0.0020**	99.90%	4.16E-06	4.16E-03

METHODOLOGY:

Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * 1/2,000 (ton/lb) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

Appendix A: Emissions Summary
Building 1550 Specialty Ingot Manufacturing Process - Ingot Machining Lathe

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Location	Process:	Max Throughput Rate*		Particulates				HAPs	
				Emission Factor **		Potential to Emit		Lead Content (%) ***	PTE of Lead (tons/year)
		(lbs/hr)	(tons iron/hr)	PM (lbs/ton)	PM10/PM2.5 (lbs/ton)	PM (tons/yr)	$PM_{10}/PM_{2.5}$ (tons/yr)		
1550 Polco Street	Ingot Machining Lathe	100	0.05	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
			Total			**2.19E-01**	**2.19E-03**		**1.69E-02**

Notes

** Emission factors are from FIRE Volume II, Chapter 14, Grey Stone Iron Foundries - SCC 3-04-003-60 (July, 2001)

*** Lead Emission are based on the lab test conducted by Precision Process Division in Walkerton, Indiana

****In the Building 1550 Crucible Cutting room, the product cut is graphite, not metal. Therefore, there are no HAP emissions.

In the absence of valid PM2.5 Emission Factors, it is assumed that PM2.5 emissions = PM10 emissions.

Methodology

PTE PM/PM-10 (tons/year) = Max. Thorughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs

PTE Lead (tons/year) = Max. Throughput Rate (tons/hour) * PM Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * Lead Content (%)

Appendix A: Emissions Summary
Buiolding 1550: Coating Mixing Operation - Sermatech Process

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Mixing Type	Max Throughput (lbs/hr)	Density (lbs/gal)	Max Throughput (gal/hr)	Solid Weight %	Particulate EF (lbs/ton pigment)*	VOC Content (lbs/gal)	VOC Emission Rate	Chromium Compound Content (%)
Water-Based Paint Mixing	60.00	13.77	4.36	35%	20	0.00	2%	6%
Solvent-Based Paint Mixing	24.00	10.01	2.40	35%	20	6.33	2%	0%

Scrubber PM Control Efficiency (%)	Uncontrolled Particulate PTE (tons/yr)	Uncontrolled VOC PTE (tons/yr)	Uncontrolled Chromium PTE (tons/yr)	Controlled Particulate PTE (tons/yr)	Controlled Chromium PTE (tons/yr)	Pounds of VOC per Day
99%	0.92	0.00	0.06	0.01	0.00	---
0%	0.37	1.33	0.00	0.37	0.00	---
Total (tons/yr)	**1.29**	**1.33**	**0.06**	0.38	0.00	7.28

Info from Praxair:
Maximum Throughput was provided by the facility.

METHODOLOGY
The VOC and HAP content are based on the MSDS of the worst-case final product, so it is multiplied times the powder and liquid material throughputs, combined.
The VOC emission rate comes from AP-42, 6.4.1.
The PM emission factors come from AP-42, Table 6.4-1. The PM Emission factor is based on pigment throughput, so it is only multiplied times the solid content.
Two scrubbers are used to control powder from the water-based paint mixing process.
The worst-case water-based paint is Sermatel 962, based on HAP content.
The worst-case solvent-based paint is Sermatel 1140, based on VOC content.

Uncontrolled Particulate PTE (tons/yr) = [Max Throughput (lbs/hr) x Solid Weight % / (2,000 lbs/ton)] x Particulate EF (lbs/ton pigment) x (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled VOC PTE (tons/yr) = Max Throughput (gal/hr) x VOC Content (lbs/gal) x (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled Chromium PTE (tons/yr) = Uncontrolled Particulate PTE (tons/yr) x Chromium Compound Content (%)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x [1 - Scrubber PM Control Efficiency (%)]

Appendix A: Emissions Summary
Building 1415: Operation 1, Process 1 (O1P1)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Waste Particulate Collected (lbs/yr)	Hours Operated per Year	Dust Collector Control Efficiency*	PTE Particulate (lbs/hr)	PTE Particulate (tons/yr)	Airflow (acfm)	Controlled PM Emissions (gr/ft3)	Able to Comply with 326 IAC 6.5
39795	7392	99.7%	0.02	**0.07**	4,000	0.00	YES

Methodology:

"Waste Particulate Collected" and "Hours Operated per Year" were provided by Praxair based on waste and operating records. The waste number excludes large chunks that were cleaned out of the equipment.

PTE Particulate During Cleaning (lbs/hr) = (Waste Particulate Collected (lbs/hr))/ Dust Collector Control Efficiency (%) / Hours Operated per Year x (1-Dust Collector Control Efficiency (%))

PTE Particulate from Dust Collector (tons/yr) = PTE Particulate During Cleaning (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)

*Dust Collectors are integral control devices.

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Building 1415 - Operation 2, Process 1 (O2P1)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Unit	Maximum Current (Amp)*	PM Emission Factor (grains/A-hr)	PM Emissions (tons/year)	$PM_{10}/PM_{2.5}$ Emissions (tons/year)**
Q-Salts Tanks (6)	42	0.63	0.02	0.02
Total	42		**0.02**	**0.02**

* PM_{10} and $PM_{2.5}$ emissions are assumed to be equal to PM emissions

Assuming there will be 6 "Q-Salts" tanks being electrically charged at 7.0 amps each.

Methodology

Potential Emissions (tons/year) = Maximum Current (Amps) * Emission Factor (gr/A-hr) * (1 lb / 7,000 gr) * (8,760 hours / year) * (1 ton / 2,000 lbs)

[1] AP-42, Table 12.20-4 for Other Metals Electroplating

*Note: There is no specific emission factor for the true metal being used in AP-42, Table 12.20-4. For calculations, the emission factor that was worst case was used. Nickel emission factor was used = 0.63 g/A-hr

[2] Schwartz S, Lorber M. 1999. *Characterizing site-specific source emissions for EPA's risk assessment tool for the metal finishing industry.*

326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Building 1415 - Operation 2, Process 2 (O2P2)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Building 1415 - Operation 2, Process 2 (O2P2) Totals							
PM	**PM10**	**PM2.5**	**VOC**	**Methanol**	**Nickle**	**Chromium**	**Total HAPs**
0.00	0.00	0.00	0.04	0.79	0.00	0.00	0.79

Slurry Masking								
Material	Maximum Usage (lbs/hr)	Density (lbs/gal)	VOC Content (lbs/gal)	Methanol Content (%)	VOC Emissions (tons/yr)	Methanol Emissions (tons/yr)	VOC Emissions (lbs/hr)	Usage Rate (gal/day)
Material 1	<12.0	20.96	0.02	1.50%	**0.04**	**0.79**	0.01	13.74

Methodology:

VOC Emissions (tons/yr) = Maximum Usage (lbs/hr) / Density (lbs/gal) x VOC Content (lbs/gal) x (8,760 hrs/yr) / (2,000 lbs/ton)
Single HAP Emissions (tons/yr) = Maximum Usage (lbs/hr) x HAP Content (%) x (8,760 hrs/yr) / (2,000 lbs/ton)
Combined HAP Emissions (tons/yr) = Sum of Single HAP Emissions (tons/yr)

Notes:

-There are no particulate emissions from slurry masking because the transfer efficiency is 100%.

Dry Masking/Buffering											
Material	Maximum Usage (lb/yr)	% Nickel	% Chromium	PM EF (lb/ton)	PM10/PM2.5 EF (lb/ton)	PM Emissions (tons/year)	PM10/PM2.5 Emissions (tons/year)	Nickel Emissions (tons/year)	Chromium Emissions (tons/year)	Material Density (lbs/gal)	Usage Rate (gal/day)
Material 2	20000	50%	5%	0.0069	0.0033	3.45E-05	1.65E-05	1.73E-05	1.73E-06	100	0.55
					Potential Emissions (tons/yr)	**3.45E-05**	**1.65E-05**	**1.73E-05**	**1.73E-06**		
					Combined HAPs (tons/yr)	**1.90E-05**					

Methodology:

*Handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
PM/PM10/PM2.5 Emissions (tons/year) = Throughput (tons/year) * EF (lb/ton) * (1 ton / 2,000 lb)
HAP Emissions (ton/year) = PM Emissions (ton/year) * % HAP
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr

Appendix A: Emissions Summary
Building 1550- Epoxy Kits (EUS-12)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Epoxy Kit Filling:

Volume of Container (oz)	Volume of Container (ft3/can)	Container Throughput (cans/hr)	V_{Tair} (ft3/yr)	MEK Batch Amount (g/can)	Density MEK (g/cm3)	MEK Batch Amount (ft3/can)	Volume % MEK	V_{air} (ft3/yr)	T_{fill} (K)	VP_{MEK} (mmHg)	Molecular Weight MEK (g/mol)	K_{MEK}	C_{blend}	VOC Potential Emissions (tons/yr)
10	0.01	120	10978.52	70	0.810	0.003	29%	3208.14	298.15	90.6	72.11	1.09	29%	**4.03**

Methodology:

Note: The materials for the epoxy kit are added directly to the bottles. The filling is sealed to minimize VOC emissions.There are 6 products manufactured on the epoxy kit line. The worst-case VOC product, UCAR 106 Epoxy/MEK was used in the calculations.

The methodology is from the American Chemical Council "MDI Emissions Reporting Guidelines for the Polyurethane Industry," Section 5-27 Filling/Blending, published May 2012.

MEK chemical properties are from the MSDS.

Volume % MEK = MEK Batch Amount (ft3/can) / Volume of Container (ft3/can)

V_{Tair} (ft3/yr)= Container Throughput (cans/hr) x (8,760 hrs/yr) x Volume of Container (ft3/can)

V_{air} (ft3/yr) = V_{Tair} (ft3/yr) x Volume % MEK

T_{fill} = 298.15 K (ambient temperature)

K_{MEK} = MEK Concentration in Feedstock (100%) x T_{fill} (K) /273.15K

C_{blend} = Volume % MEK

VOC Emissions (tons/yr) = V_{air} x (1 / 359) x [273.15 / T_{fill} (K)] x (VP_{MEK} (mmHg) / 760) x Molecular Weight MEK (g/mol) x K_{MEK} x C_{blend} / (2,000 lbs/ton)

***Vermiculate Pouring:**

Material	Max Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Control Efficiency Dust Collector	Control Efficiency HEPA Filters	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)
Vermiculate	50	0.0069	0.0033	**7.56E-04**	**3.61E-04**	99.50%	99.999%	3.79E-06	1.81E-06

*Vermiculate is used in the packaging for the epoxy kits. It is controlled by dust collector DC014, which is equipped with HEPA filters.

Methodology:

Maximum throughputs were provided by Praxair.

VOC content and density are from the MSDSs.

Vermiculate pouring PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer.

Uncontrolled VOC PTE (tons/yr) = Max Throughput (gal/hr) x VOC Content (lbs/gal) x VOC Emission Rate x (8,760 hrs/yr) / (2,000 lbs/ton)

Uncontrolled Particulate PTE (tons/yr) = Max Throughput (lbs/hr) / (2,000 lbs/ton) x EF (lbs/ton) x (8,760 hrs/yr) / (2,000 lbs/ton)

Controlled Particulate PTE (tons/yr) = Uncontrolled Particulate PTE (tons/yr) x [1- (Control Eff Dust Collector x Control Eff HEPA Filters)]

Appendix A: Emissions Summary
Pack Diffusion Process (1415 Main Street)

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Before/After Control	Pack Diffusion PTE (tons/yr)				
	PM	PM10	PM2.5	HF	Total HAPs
Before Control	**1.95**	**1.95**	**1.95**	**0.24**	**0.24**
After Control	1.95	1.95	1.95	0.02	0.02

Material Handling - Pack Station				
Total Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)
100	0.0069	0.0033	1.51E-03	**7.23E-04**

Material Handling - Unpack Station				
Total Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)
100	0.0069	0.0033	1.51E-03	**7.23E-04**
	Potential Emissions (tons/yr)		**3.02E-03**	**1.45E-03**

METHODOLOGY:

*Handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer

Uncontrolled Emissions (tons/yr) = Powder Throughput (lbs/hr) / (2,000 lbs/ton) * EF (lbs/ton) * (8,760 hours/year) / (2,000 lbs/ton)

There are no HAPs in the dry materials used in the Polishing Department.

Additive Usage						
Usage (lbs/hr)	Molecular Weight of Additive (g/mol)	Molecular Weight HF (g/mol)	Ratio Moles HF to Moles ABF	HF PTE before control(ton/yr)	Scrubber Control Efficiency	HF Emissions After Control (ton/yr)
0.10	37.04	20.01	1.00	0.24	90%	0.02

METHODOLOGY:

Assume that 100% of the HF generated evaporates.

The ratio of moles of HF to moles of additive is based on the reaction. There is one mole HF reacted for every mole of additive.

Uncontrolled PTE (tons/yr) = Usage (lbs/hr) x Molecular Weight HF (g/mol) / Molecular Weight additive (g/mol) x Ratio x (8760 hrs/yr) / (2,000 lbs/ton)

Dry Ice / Air Blasting			
Residual Powder (lb/part)	Maximum Production Rate (parts week)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)
0.5	150	1.95	1.95

METHODOLOGY:

Redidual powder is dislodged from parts using either a dry ice blasting cabinet or an air blasting cabinet.

Uncontrolled PM Emissions (ton/year) = Redidual Powder (lb/part) * Maximum Production Rate (parts/week) * 52 weeks/year * (1 ton / 2,000 lbs)

Appendix A: Emissions Summary
EU020G - Grit Reclassifier Building 1245

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Uncontrolled PM Emissions (lbs/hr)	Uncontrolled PM10/PM2.5 Emissions (lbs/hr)	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)
400	0.0069	0.0033	0.01	0.003	0.0014	**0.0007**	99.0%	0.00006	0.00003

METHODOLOGY:

Emission factors for PM and PM10/2.5 from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) / (2,000 lbs/ton) * EF (lbs/ton) * (8,760 hours/year) / (2,000 lbs/ton)

Appendix A: Emissions Summary
Grinding and Metal Cutting Operations

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Location	Process:	Number of Units	Maximum Throughput Rate*		Particulates				HAPs	
					Emission Factor **		Potential to Emit		Lead Content (%) ***	PTE of Lead (tons/year)
			(lbs/hr)	(tons iron/hr)	PM (lbs/ton)	PM10/PM2.5 (lbs/ton)	PM (tons/yr)	$PM_{10}/PM_{2.5}$ (tons/yr)		
1245 Main Street	Building 1245 Maintenance Shop	1	100	0.05000	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
	Fifteen (15) Building 1245 Various Grinders	15	100	0.05000	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
	Brown and Sharp Grinder	1	3.00	0.00150	0.01	0.0045	6.57E-03	6.57E-05	7.70%	5.06E-04
1415 Main Street	Maintenance Shop #1	1	100	0.05000	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
	Maintenance Shop #2	1	100	0.05000	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
1500 Polco Street	Building 1500 Machine Shop	1	100	0.05	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
	Building 1500 Fabrication Shop	1	50	0.025	0.01	0.0045	1.10E-01	1.10E-03	7.70%	8.43E-03
	Maintenance Welding Shop	1	5	0.0025	0.01	0.0045	1.10E-02	1.10E-04	7.70%	8.43E-04
1550 Polco Street	1550 Mainenance Shop	1	100	0.05	0.01	0.0045	2.19E-01	2.19E-03	7.70%	1.69E-02
	Specialty Powders Crucible Cutting (CC019)***	1	5	0.0025	0.01	0.0045	1.10E-02	1.10E-04	7.70%	8.43E-04
Facility-Wide	Downdraft Tables	Various	2000	1	0.01	0.0045	4.38E-02	1.97E-02	7.70%	3.4E-03
				Total (tons/yr):			**1.50**	**0.03**		**0.12**

Notes

*The maximum metal throughput is based on 3 grinders grinding a maximum of 5 lbs/day and 1 metal saw cutting a maximum of 1 lb/day, with a work shift of 6 hours per day.
** Emission factors are from FIRE Volume II, Chapter 14, Grey Stone Iron Foundries - SCC 3-04-003-60 (July, 2001)
*** Lead Emission are based on the lab test conducted by Precision Process Division in Walkerton, Indiana
****In the Building 1550 Crucible Cutting room, the product cut is graphite, not metal. Therefore, there are no HAP emissions.
In the absence of valid PM2.5 Emission Factors, it is assumed that PM2.5 emissions = PM10 emissions.
The four (4) vented tables used for insignificant grinding are assumed to have negligible PM, PM10, and PM2.5 emissions.

Methodology

PTE PM/PM-10 (tons/year) = Max. Thorughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs
PTE Lead (tons/year) = Max. Throughput Rate (tons/hour) * PM Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * Lead Content (%)

Appendix A: Emissions Summary
Welding and Thermal Cutting

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
WELDING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Metal Inert Gas (MIG)(carbon steel)	3	3		0.0055	0.0005			0.050	0.005	0.000	0	0.005
Tungsten Inert Gas (TIG)(carbon steel	0			0.0055	0.0005			0.000	0.000	0.000	0	0.000
Arc	6	2.4		0.0211	0.0009			0.304	0.013	0.000	0	0.013
	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Plasma**	1	0.5	300	0.0039				0.035	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.39	0.02	0.00	0.00	0.02
Potential Emissions lbs/day								9.32	0.42	0.00	0.00	0.42
Potential Emissions tons/year	10							**1.70**	**0.08**	**0.00**	**0.00**	**0.08**

Notes
Welding and plasma cutting stations are part of the metal grinding and cutting operations.

Methodology:
*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission
Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs

Appendix A: Emissions Summary
Carpentry Shop (1500 Polco Street)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Emission Unit ID	Maximum Througput (lb/hr)	PM Emission Factor lb/ton	PM10 Emission Factor (lb/ton)	PM2.5 Emission Factor (lb/ton)	Control Efficiency (%) **	Uncontrolled Potential to Emit PM (tons/yr)	Uncontrolled Potential to Emit PM10 (tons/yr)	Uncontrolled Potential to Emit PM2.5 (tons/yr)	Controlled Potential to Emit PM (tons/yr)	Controlled Potential to Emit PM10 (tons/yr)	Controlled Potential to Emit PM2.5 (tons/yr)
Band Saw	50	3.50E-01	2.00E-01	2.00E-01	0%	3.83E-02	1.53E-04	8.76E-05	3.83E-02	1.53E-04	8.76E-05
Drill Press	50	3.50E-01	2.00E-01	2.00E-01	0%	3.83E-02	1.53E-04	8.76E-05	3.83E-02	1.53E-04	8.76E-05
Belt Sander	50	3.50E-01	2.00E-01	2.00E-01	0%	3.83E-02	1.53E-04	8.76E-05	3.83E-02	1.53E-04	8.76E-05
Circular Saw	50	3.50E-01	2.00E-01	2.00E-01	90%	3.83E-02	1.53E-04	8.76E-05	3.83E-03	1.53E-05	8.76E-06
Table Saw	50	3.50E-01	2.00E-01	2.00E-01	90%	3.83E-02	1.53E-04	8.76E-05	3.83E-03	1.53E-05	8.76E-06
						1.92E-01	**7.67E-04**	**4.38E-04**	1.23E-01	4.91E-04	2.80E-04

Emission factors based off of FIRE Version 5.0 August 1995 SCC 3-07-00802 (Log Sawing)

Methodology:
Uncontrolled Potential to Emit (PM/PM10/PM2.5) tons/yr = Maximum Throughput (lb/hr) / Emission Factor (lb/ton) * 8760 hrs/1 year
Controlled Potential to Emit (PM/PM10/PM2.5) tons/yr = Uncontrolled Potential to Emit (PM/PM10/PM2.5) tons/yr * (1-Control Efficiency (%))

Appendix A: Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Generator	Location	hp
Generac Generator	Building 1500	207.0
ONAN/Cummins Generator	Powerhouse	168.0
	Total	**375.0**

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	375.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	187,500

	Pollutant						
	PM*	**PM10***	**direct PM2.5***	**SO2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	**0.21**	**0.21**	**0.21**	**0.19**	**2.91**	**0.24**	**0.63**

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	**Toluene**	**Xylene**	**1,3-Butadiene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**Total PAH HAPs*** **
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	6.12E-04	2.68E-04	1.87E-04	2.57E-05	7.74E-04	5.03E-04	6.07E-05	1.10E-04

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**0.0025**

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Potential NOx Emissions = (1,273,280 hp-hr/yr) * (0.0310 lb/hp-hr) / (2,000 lbs/ton) = 19.74 tons/yr
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission

Appendix A: Emissions Summary
LP Gas-Fired Emergency Generator
Building 1500 BUDA Propane Emergency Generator

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Capacity		
	53.0	hp
	39.5	kW
	0.18	MMBtu/hr

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMBtu	9.91E-03	7.71E-05	7.71E-05	5.88E-04	4.08	0.118	0.317
Potential Emission in tons/yr	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.01**	**0.01**

	HAPs - Organics					**HAPs Total**
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	Hexane	**0.003**
Emission Factor in lb/MMcf	8.4E-03	5.1E-03	5.3E-02	2.5E-03	1.1E-03	
Potential Emission in tons/yr	**3.78E-04**	**2.32E-04**	**2.39E-03**	**1.13E-04**	**4.97E-05**	

Methodology

Conversion factors from AP-42 Appendix A: To convert from hp to kW, use the conversion 1 hp = 0.74558 kW. To convert from kW to MMBtu/hr, use the conversion of 1 kW = 3,412 Btu/hr

Emission Factors are from AP42 (Supplement F 8/2000), Table 3.2-2. Because no emission factors are available for propane-fired engines, the emission factors for 4 stroke lean burn natural gas-fired engines were used.

Emission (tons/yr) = Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu) * 500 hr/yr / (2,000 lb/ton)

Appendix A: Emissions Summary
Tribomet Lines 1 and 2 (Building 1415)

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Tank ID	Materials	Amount in Tank	Units	Amount Added per Month	Units	Total Added per Year (lbs/yr)	Density (lbs/gal)	Estimated Evaporation Rate	Total Emissions (lbs/yr)	VOC Content	HCl Content (%)	Nickel Compound Content (%)	Cobalt Compound Content (%)	Chromium Compound Content (%)	Uncontrolled PTE VOC (tons/yr)	Uncontrolled PTE HCl (tons/yr)	Uncontrolled PTE Nickel Compounds (tons/yr)	Uncontrolled PTE Cobalt Compounds (tons/yr)	Uncontrolled PTE Chromium Compounds (tons/yr)
104	HCl	30	gal	10	gal	1191.67	9.93	20%	238.33	0%	38%	0%	0%	0%	0.00	0.05	0.00	0.00	0.00
	Nickel Chloride	209	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
204	HCl	30	gal	10	gal	1191.67	9.93	20%	238.33	0%	38%	0%	0%	0%	0.00	0.05	0.00	0.00	0.00
	Nickel Chloride	209	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
108	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
109	T104CS Powder	67.2	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	763.9	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	45.8	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
112	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
113	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
115	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
116	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
208	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
211	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
213	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
214	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
216	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
110	Nickel Sulfamate (65%)***	193.1	gal	40	lbs	480.00	13.19	20%	96.00	0%	0%	65%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Nickel Chloride	7.7	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Boric Acid	124.4	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
	CBN Powder	10.6	lbs	40	lbs	480.00	29.21	20%	96.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
117	Nickel Sulfamate (65%)***	118	gal	40	lbs	480.00	13.19	20%	96.00	0%	0%	65%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Nickel Chloride	4.7	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Boric Acid	76	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
	CBN Powder	6.5	lbs	40	lbs	480.00	29.21	20%	96.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
210	T104C Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
212	TM308 Powder	110	lbs	40	lbs	480.00	52.82	20%	96.00	0%	0%	0%	0%	70%	0.00	0.00	0.00	0.00	0.03
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
														Total Uncontrolled PTE (tons/yr)	**0.00**	**0.09**	**0.17**	**0.62**	**0.49**
														Control Efficiency	99.50%	99.50%	99.50%	99.50%	99.50%
														Total Controlled PTE (tons/yr)	0.00	0.0005	0.0008	0.0031	0.0025

Methodology:

*Density was not provided in the MSDS

**Tanks are changed out once every 2 years.

***Nickel Sulfamate is diluted to 65%.

The Tribomet lines are controlled by a composite mesh pad system with mist eliminator with a control efficiency of 99.5%

Total Amount Added Per Year (lbs/yr)

For amounts given in lbs:

For amounts given in gal:

Total Amount (lbs/yr) = Amount Added per Month (lbs/month) x (12 months/yr)

Total Amount (lbs/yr) = Amount Added per Month (gal/month) x Density (lbs/gal) x (12 months/yr)

Total Emissions = Amount Added per Year (lbs/yr) x Evaporation Rate (%)

Evaporation rate of 20% is a conservative engineering estimate, based on the amount that is added per month compared to the tank contents. The evaporation percentage is not an exact ratio of the amount added divided by the tank contents, because the percentage accounts for the portion of the liquid that remains on the product or is wasted.

Appendix A: Emissions Summary
VOC and Particulate
Building 1500 - Scale Coating

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Material	Density (Lb/Gal)	Weight % Organics	Volume % Non-Volatiles (solids)	% Cr Compounds	% Ni	% Co	Gal of Mat. (gal/unit)	Maximum (unit/week)	Gal of Mar. (gal/day)
ST570A (Part 1)	10.8	0.00%	28%	8%	0%	0%	0.01321	10	0.02
ST570A (Part 2)	7.9	94.66%	0%	0%	0%	0%	0.01321	10	0.02
ST1740	16.7	0.00%	80%	24%	18%	18%	0.02642	10	0.04

Potential VOC (ton/yr)	Particulate Potential (ton/yr)	Potential Cr Compounds (ton/yr)	Potential Ni (ton/yr)	Potential Co (ton/year)	Transfer Efficiency
0.00E+00	5.01E-05	1.43E-05	0.00E+00	0.00E+00	75%
2.58E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	75%
0.00E+00	4.41E-04	1.29E-04	9.64E-05	9.64E-05	75%
2.58E-02	**4.41E-04**	**1.29E-04**	**9.64E-05**	**9.64E-05**	

Potential Emissions (tons/yr):
Combined HAPs (tons/yr): **3.22E-04**

Methodology

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/wk) * (52 wk/yr) * (1 ton/2000 lbs)

PM10 emissions is assumed equal to PM

PM/PM10/HAP Tons per Year = (units/wk) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(52 wk/yr) *(1 ton/2000 lbs)

Appendix A: Emissions Summary
Building 1245 - Physical Vapor Deposition Coating Station (EU01T)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Surface Coater ID	Control Device ID	Surface Coating Type	Max Throughput (lbs/hr)	Amount of Dust Cleaned (lbs/week)	% Dust in Coater Emitted during Cleaning	PTE Particulate during Cleaning (tons/yr)	Density of Coating^ (lbs/gal)	Gallons of Coating Per Day (gal/day)	Applicable
EU01T	N/A	PVD	0.25	0.25	5%	**0.0003**	100	0.06	NO

There are no HAPs in the titanium pucks.

Methodology:

PTE Particulate During Cleaning (tons/yr) = Amount of Dust Cleaned (lbs/week) x (% Dust in Coater Emitted During Cleaning) x (52 weeks/year) / (2000 lbs/ton)

^The coating materials used are 100% solids, and are comprised of metallic and ceramic compounds. This results in high coating densities.

Appendix A: Emissions Summary
Building 1245 - LSR1 Titanium Tetrachloride Coating Station (EU01R)

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

HAPs									
Surface Coater ID	Control Device ID	Surface Coating Type	Max Throughput (lbs/hr)	Molecular Weight TiCl4 (g/mol)	Molecular Weight HCl (g/mol)	Mol HCl/ Mol TiCl4	Uncontrolled PTE HCl (tons/yr)	Scrubber Control Efficiency	Controlled PTE HCl (tons/yr)
EU01R	Scrubber	CVD	0.27	189.679	36.46094	4	**0.91**	90%	0.09

326 IAC 6.5 Applicability		
Density of Coating^ (lbs/gal)	Gallons of Coating Per Day (gal/day)	Applicable
100	0.06	NO

Methodology:

HAPs are emitted from the conversion of TiCl4 to HCl. In this reaction, there are 4 moles of HCl per mole of TiCl4.

Uncontrolled PTE HCl (tons/yr) = Max Throughput (lbs/hr) x Molecular Weight HCl (g/mol) / Molecular Weight TiCl4 (g/mol) x (Mol HCl/Mol TiCl4) x (8,760 hrs/yr) / (2,000 lbs/hr)

Controlled PTE HCl (tons/yr) = Uncontrolled PTE HCl x (1 - Scrubber Control Efficiency)

^The coating materials used are 100% solids, and are comprised of metallic and ceramic compounds. This results in high coating densities.

Appendix A: Emissions Summary
Building 1415 - Operation 1, Process 3 (O1P3)

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Tank Contents	Usage (lbs/week)	Molecular Weight ABF (g/mol)	Molecular Weight HF (g/mol)	Ratio Moles HF to Moles ABF	HF Emissions (ton/yr)
Ammonium Bifluoride (ABF)	55.00	57.04	20.01	1	**0.50**

Operation 1 Process 3 includes a dip tank containing a mixture of compounds. There are no VOC compounds or HAP compounds added to the tank. However, ammonium bifluoride in the tank reacts when in contact with water to generate HF and ammonium fluoride (NH4F). Further decomposition of NH4F takes place at temperatures of 100 degree C and above, however, the O1P3 process operates at less than 100 degree C. Therefore, one mole of ABF reacts to form one mole of HF.

Usage (lbs/week) is based on the amount added to the dip tank.

Assume that 100% of the HF generated evaporates.

The ratio of moles of HF to moles of ABF is based on the reaction. The reaction of ABF generates HF and Ammonium Fluoride. There is one mole HF reacted for every mole of ABF.

Uncontrolled PTE (tons/yr) = Usage (lbs/week) x Molecular Weight HF (g/mol) / Molecular Weight ABF (g/mol) x Ratio x (52 weeks/yr) / (2,000 lbs/ton)

Appendix A: Emissions Summary
Building 1415 - Operation 2, Process 4

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

HAPs							
Material	**Control Device ID**	**Max Throughput (lbs/hr)**	**(MW HF/MW Material) x (Mol HF/Mol Material)**	**Percent Reacted**	**Uncontrolled PTE HF (tons/yr)**	**Scrubber Control Efficiency**	**Controlled PTE HF (tons/yr)**
Material 1	Wet Scrubber	<1	0.71	50%	**1.57**	90%	0.16

Methodology:

The maximum hourly usage is from Praxair.

HAPs are emitted from the material conversion to HF.

Uncontrolled PTE HF (tons/yr) = Max Throughput (lbs/hr) x Molecular Weight HF (g/mol) / Molecular Weight Material (g/mol) x (Mol HF/Mol Material) x (Percent Reacted) x (8,760 hrs/yr) / (2,000 lbs/hr)

Controlled PTE HF (tons/yr) = Uncontrolled PTE HF x (1 - Scrubber Control Efficiency)

Appendix A: Emissions Summary
Building 1550- IPA Room

Company Name: **Linde Advanced Material Technologies, Inc.**
Source Address: **1245 and 1415 Main Street, Indianapolis, IN 46224**
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: **097-50712-00060**
Permit Reviewer: **Mehul Sura**

Material	Max Throughput (lbs/hr)	Density (lbs/gal)	Max Throughput (gal/hr)	VOC Content (lbs/gal)	VOC Emission Rate	Uncontrolled VOC PTE (tons/yr)
IPA	0.67	6.57	0.10	6.57	100%	**2.92**

Explanation of Process:

IPA is mixed with powder for milling in the Powder 7 processing area (EUS-22). The IPA is then evaporated out by ovens. The powder handling is already accounted for in the 1550 Powders calculations.

Methodology:

Maximum usage is based on 16 gallons used in 24 hours of operation.

The density and VOC content are from the MSDS.

The VOC emission rate comes from AP-42, 6.4.1.

Uncontrolled VOC PTE (tons/yr) = Max Throughput (gal/hr) x VOC Content (lbs/gal) x VOC Emission Rate x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Summary
Stripping and Cleaning Operations

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Building	Stripping Line	Tank	Material	Tank Capacity (gal)	Turnovers/Year	Amount Used per Year (gal)	Density (lbs/gal)	VOC Content (%)	HF Content (%)	HCl Content (%)	VOC Emissions (tons/yr)	HF Emissions (tons/yr)	HCl Emissions (tons/yr)	Combined HAP Emissions (tons/yr)
1415	Hydrochloric Acid Stripping Line	1	Hydrochloric Acid	30	2	60	9.60	0%	0%	38%	0.00	0.00	0.11	0.11
		2	Hydrochloric Acid	30	2	60	9.93	0%	0%	38%	0.00	0.00	0.11	0.11
		3	Hydrochloric Acid	30	0.5	15	9.93	0%	0%	38%	0.00	0.00	0.03	0.03
1245	Crest Cleaning Line	1	T-4181	28	2	56	10.35	10%	0%	0%	0.03	0.00	0.00	0.00
										Total PTE (tons/yr):	**0.03**	**0.00**	**0.25**	**0.25**

Note: Calculations are not included for the stripping operations where there are no VOCs or HAPs. The following are stripping tanks at Praxair that do not emit VOCs or HAPs.
Building 1415- Hydrochloric Acid Stripping- Two (2) water rinse tanks and one (1) caustic tank
Building 1415- Nitric Acid Stripping - One (1) nitric acid tank and one (1) water rinse tank
Building 1245- Electrolytic Stripping Line - One (1) electrolytical stripping tank (NaOH, tartaric acid, water, and soda ash), one (1) nitric acid tank, one (1) immersion fluid tank, and one (1) Kolene tank
Building 1245- Titanium Nitrate Cleaning Operation- One (1) phosphoric acid cleaning tank

METHODOLOGY:
Tank capacities and turnovers per year were provided by Praxair.
The densities are the densities for pure hydrofluoric acid and hydrochloric acid, as a worst-case scenario.

Emissions (tons/yr)= Tank Capacity (gal) x Turnovers per Year x Density (lbs/gal) x Content (%)

Hydrochloric Acid Stripping Line Prior to Modification

Building	Stripping Line	Tank	Material	Tank Capacity (gal)	Turnovers/Year	Amount Used per Year (gal)	Density (lbs/gal)	VOC Content (%)	HF Content (%)	HCl Content (%)	VOC Emissions (tons/yr)	HF Emissions (tons/yr)	HCl Emissions (tons/yr)	Combined HAP Emissions (tons/yr)
1415	Hydrochloric Acid Stripping Line	1	Hydrofluoric Acid	30	2	60	9.60	0%	4%	0%	0.00	0.01	0.00	0.01
		2	Hydrochloric Acid	30	2	60	9.93	0%	0%	38%	0.00	0.00	0.11	0.11
		3	Hydrochloric Acid	30	0.5	15	9.93	0%	0%	38%	0.00	0.00	0.03	0.03
										Total PTE (tons/yr):	**0.00**	**0.01**	**0.14**	**0.15**

Appendix A: Emissions Summary
Miscellaneous Lubricant Usage

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Building	Lubricant	Maximum Usage (gal/yr)	Density (lbs/gal)	VOC Content (lbs/gal)	Ethylene Glycol Content (%)	Toluene Content (%)	Antimony Compound Content (%)	Lead Compound Content (%)
1415	DP Lubricant Blue	55	6.84	6.78	15%	0%	0%	0%
1245	Molydag	10	11.18	5.14	0%	30%	30%	10%

	VOC Emissions (tons/yr)	Ethylene Glycol Emissions (tons/yr)	Toluene Emissions (tons/yr)	Antimony Compound Emissions (tons/yr)	Lead Compound Emissions (tons/yr)	Combined HAP Emissions (tons/yr)
	0.19	0.03	0.00	0.00	0.00	0.03
	0.03	0.00	0.02	0.02	0.01	0.04
Total PTE (tons/yr):	**0.21**	**0.03**	**0.02**	**0.02**	**0.01**	**0.07**

DP Lubricant Blue is a lubricant used in the polishing process in a quality assurance lab. It is applied to polishing wheels by hand, and is used at a maximum annual rate of 55 gallons per year.

Molydag is a production material that is applied to some customer parts at Building 1245. The maximum annual usage is 10 gallons.

Methodology:

VOC Emissions (tons/yr) = Maximum Usage (gal/hr) x VOC Content (lbs/gal) x (8,760 hrs/yr) / (2,000 lbs/ton)

HAP Emissions (tons/yr) = Maximum Usage (gal/hr) x Density (lbs/gal) x HAP Content (%) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Summary
Fugitive Dust Emissions - Paved Roads

Company Name: Linde Advanced Material Technologies, Inc.
Source Address: 1245 and 1415 Main Street, Indianapolis, IN 46224
1500 and 1550 Polco Street, Indianapolis, IN 46222
FESOP SPR No.: 097-50712-00060
Permit Reviewer: Mehul Sura

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).
Vehicle Information (provided by source)

Building	Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one way miles (miles/day)	Maximum one-way miles (miles/yr)
1500	Semi Trucks (entering facility) (one-way trip)	1	1	1.0	40	40.0	650	0.123	0.1	44.9
1500	Semi Trucks (leaving facility) (one-way trip)	1	1	1.0	40	40.0	650	0.123	0.1	44.9
1500	Box Trucks (entering facility) (one-way trip)	1	1	1.0	17.5	17.5	650	0.123	0.1	44.9
1500	Box Trucks (leaving facility) (one-way trip)	1	1	1.0	17.5	17.5	650	0.123	0.1	44.9
1500	Delivery Vans (entering facility) (one-way trip)	2	1	2.0	12.5	25.0	650	0.123	0.2	89.9
1500	Delivery Vans (leaving facility) (one-way trip)	2	1	2.0	12.5	25.0	650	0.123	0.2	89.9
1245	Semi Trucks (entering facility) (one-way trip)	4	1	4.0	30	120.0	1250	0.237	0.9	345.6
1245	Semi Trucks (leaving facility) (one-way trip)	4	1	4.0	30	120.0	1250	0.237	0.9	345.6
1245	Box Trucks (entering facility) (one-way trip)	4	1	4.0	12	48.0	1250	0.237	0.9	345.6
1245	Box Trucks (leaving facility) (one-way trip)	4	1	4.0	12	48.0	1250	0.237	0.9	345.6
1415	Semi Trucks (entering facility) (one-way trip)	8	1	8.0	30	240.0	250	0.047	0.4	138.3
1415	Semi Trucks (leaving facility) (one-way trip)	8	1	8.0	30	240.0	250	0.047	0.4	138.3
1415	Box Trucks (entering facility) (one-way trip)	4	1	4.0	12	48.0	250	0.047	0.2	69.1
1415	Box Trucks (leaving facility) (one-way trip)	4	1	4.0	12	48.0	250	0.047	0.2	69.1
1415	Semi Trucks (entering facility) (one-way trip)	6	1	6.0	40	240.0	1200	0.227	1.4	497.7
1415	Semi Trucks (leaving facility) (one-way trip)	6	1	6.0	40	240.0	1200	0.227	1.4	497.7
1415	Box Trucks (entering facility) (one-way trip)	7	1	7.0	5.5	38.5	1200	0.227	1.6	580.7
1415	Box Trucks (leaving facility) (one-way trip)	7	1	7.0	5.5	38.5	1200	0.227	1.6	580.7
1550	Semi Trucks (entering facility) (one-way trip)	10	1	10.0	44	440.0	400	0.076	0.8	276.5
1550	Semi Trucks (leaving facility) (one-way trip)	10	1	10.0	44	440.0	400	0.076	0.8	276.5
1550	Straight Trucks (entering facility) (one-way trip)	3	1	3.0	15	45.0	400	0.076	0.2	83.0
1550	Straight Trucks (leaving facility) (one-way trip)	3	1	3.0	15	45.0	400	0.076	0.2	83.0
1550	Delivery Trucks (entering facility) (one-way trip)	1	1	1.0	5	5.0	400	0.076	0.1	27.7
1550	Delivery Trucks (leaving facility) (one-way trip)	1	1	1.0	5	5.0	400	0.076	0.1	27.7
1550	Box Trucks (entering facility) (one-way trip)	1	1	1.0	8	8.0	400	0.076	0.1	27.7
1550	Box Trucks (leaving facility) (one-way trip)	1	1	1.0	8	8.0	400	0.076	0.1	27.7
1555	Delivery Vans (entering facility) (one-way trip)	6	1	6.0	5	30.0	1100	0.208	1.3	456.3
1555	Delivery Vans (leaving facility) (one-way trip)	6	1	6.0	5	30.0	1100	0.208	1.3	456.3
1555	Semi Trucks (entering facility) (one-way trip)	3	1	3.0	20	60.0	1100	0.208	0.6	228.1
1555	Semi Trucks (leaving facility) (one-way trip)	3	1	3.0	20	60.0	1100	0.208	0.6	228.1
1555	Parcel Trucks (entering facility) (one-way trip)	3	1	3.0	10	30.0	1100	0.208	0.6	228.1
1555	Parcel Trucks (leaving facility) (one-way trip)	3	1	3.0	10	30.0	1100	0.208	0.6	228.1
1555	Semi Trailers (entering facility) (one-way trip)	3.0	1.0	3.0	40.0	120.0	1100	0.208	0.6	228.1
1555	Semi Trailers (leaving facility) (one-way trip)	3.0	1.0	3.0	40.0	120.0	1100	0.208	0.6	228.1
			Totals	**134.0**		**3110.0**			**20.3**	**7424.4**

Average Vehicle Weight Per Trip = 23.2 tons/trip
Average Miles Per Trip = 0.15 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	23.2	23.2	23.2	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.149	0.430	0.106	lb/mile
Mitigated Emission Factor, Eext =	1.965	0.393	0.096	lb/mile
Dust Control Efficiency =	0%	0%	0%	No controls

Building	Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
1500	Semi Trucks (entering facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Semi Trucks (leaving facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Box Trucks (entering facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Box Trucks (leaving facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Delivery Vans (entering facility) (one-way trip)	0.10	0.02	0.00	0.09	0.02	0.00	0.09	0.02	0.00
1500	Delivery Vans (leaving facility) (one-way trip)	0.10	0.02	0.00	0.09	0.02	0.00	0.09	0.02	0.00
1245	Semi Trucks (entering facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1245	Semi Trucks (leaving facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1245	Box Trucks (entering facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1245	Box Trucks (leaving facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1415	Semi Trucks (entering facility) (one-way trip)	0.15	0.03	0.01	0.14	0.03	0.01	0.14	0.03	0.01
1415	Semi Trucks (leaving facility) (one-way trip)	0.15	0.03	0.01	0.14	0.03	0.01	0.14	0.03	0.01
1415	Box Trucks (entering facility) (one-way trip)	0.07	0.01	0.00	0.07	0.01	0.00	0.07	0.01	0.00
1415	Box Trucks (leaving facility) (one-way trip)	0.07	0.01	0.00	0.07	0.01	0.00	0.07	0.01	0.00
1415	Semi Trucks (entering facility) (one-way trip)	0.53	0.11	0.03	0.49	0.10	0.02	0.49	0.10	0.02
1415	Semi Trucks (leaving facility) (one-way trip)	0.53	0.11	0.03	0.49	0.10	0.02	0.49	0.10	0.02
1415	Box Trucks (entering facility) (one-way trip)	0.62	0.12	0.03	0.57	0.11	0.03	0.57	0.11	0.03
1415	Box Trucks (leaving facility) (one-way trip)	0.62	0.12	0.03	0.57	0.11	0.03	0.57	0.11	0.03
1550	Semi Trucks (entering facility) (one-way trip)	0.30	0.06	0.01	0.27	0.05	0.01	0.27	0.05	0.01
1550	Semi Trucks (leaving facility) (one-way trip)	0.30	0.06	0.01	0.27	0.05	0.01	0.27	0.05	0.01
1550	Straight Trucks (entering facility) (one-way trip)	0.09	0.02	0.00	0.08	0.02	0.00	0.08	0.02	0.00
1550	Straight Trucks (leaving facility) (one-way trip)	0.09	0.02	0.00	0.08	0.02	0.00	0.08	0.02	0.00
1550	Delivery Trucks (entering facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1550	Delivery Trucks (leaving facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1550	Box Trucks (entering facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1550	Box Trucks (leaving facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1555	Delivery Vans (entering facility) (one-way trip)	0.49	0.10	0.02	0.45	0.09	0.02	0.45	0.09	0.02
1555	Delivery Vans (leaving facility) (one-way trip)	0.49	0.10	0.02	0.45	0.09	0.02	0.45	0.09	0.02
1555	Semi Trucks (entering facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Semi Trucks (leaving facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Parcel Trucks (entering facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Parcel Trucks (leaving facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Semi Trailers (entering facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Semi Trailers (leaving facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
	Totals	7.98	1.60	0.39	**7.39**	**1.46**	**0.36**	7.30	1.46	0.36

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • Fax (317) 233-6647 • www.idem.IN.gov

Mike Braun
Governor

Clint Woods
Commissioner

November 5, 2026

Michael Hess
Linde Advanced Material Technologies Inc
1500 Polco St
Indianapolis, IN 46222

Re: Public Notice
Linde Advanced Material Technologies Inc
Permit Level: FESOP Significant Permit Revision (Minor PSD/EO)
Permit Number: 097-50712-00060

Dear Michael Hess:

Enclosed is the Notice of 30-Day Period for Public Comment for your draft air permit.

Our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person. The Notice of 30-Day Period for Public Comment has also been sent to the OAQ Permits Branch Interested Parties List and, if applicable, your Consultant/Agent and/or Responsible Official/Authorized Individual.

The preliminary findings, including the draft permit, technical support document, emission calculations, and other supporting documents, **are available electronically at**:

IDEM's online searchable database: https://www.in.gov/apps/idem/caats/ . Choose Search Option **by Permit Number**, then enter permit 50712

A copy of the application and preliminary findings is also available via IDEM's Virtual File Cabinet (VFC) located at https://www.in.gov/idem/legal/public-records/virtual-file-cabinet/. Once you have accessed VFC, you will then have the option to search for source related documents using a variety of criteria. To find documents related to this air permit, click on "Advanced Search," specify "OAQ" in the Program search field, specify the five-digit permit number 50712 in the Permit # search field, then click the Search button at the top or bottom of the webpage.

If you have requested to receive a hard copy of these documents, the preliminary findings are enclosed.

The Public Notice period will begin the date the Notice is published on the IDEM Official Public Notice website. Publication has been requested and is expected within 2-3 business days. You may check the exact Public Notice begins and ends date here: https://www.in.gov/idem/public-notices/

Please note that as of April 17, 2019, IDEM is no longer required to publish the notice in a newspaper.

OAQ has submitted the draft permit package to the Speedway Public Library, 5633 W 25th St in Speedway, IN 46224. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the draft permit documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Sura, Mehul, Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 N. Senate Avenue, Room 13W, Indianapolis, Indiana, 46204-2251 or call (800) 451-6027, and ask for extension 3-6868 or dial (317) 233-6868.

Sincerely,

Cheri Mosier

Cheri Mosier
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover Letter

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • Fax (317) 233-6647 • www.idem.IN.gov

Mike Braun
Governor

Clint Woods
Commissioner

November 5, 2026

To: Speedway Public Library

From: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Linde Advanced Material Technologies Inc
Permit Number: 097-50712-00060

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

If you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library updated 1/13/2025

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • Fax (317) 233-6647 • www.idem.IN.gov

Mike Braun
Governor

Clint Woods
Commissioner

Notice of Public Comment

November 5, 2026
Linde Advanced Material Technologies Inc
097-50712-00060

To: Interested Parties:

You are receiving this notice because you asked to be on IDEM's notification list for this company and/or county; or because your property is nearby the company being permitted; or because you represent a local/regional government entity. The Indiana Department of Environmental Management, Office of Air Quality, invites your comments on the draft air permit.

Enclosed is a Notice of Public Comment, which has posted on IDEM's Public Notice website at https://www.in.gov/idem/public-notices/.

The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you would like to be removed from the Air Permits mailing list, please contact Joanne Smiddie-Brush with the Air Permits Administration Section at 1-800-451-6027, ext. 3-0185 or via e-mail at JBRUSH@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN Interested Parties Cover Letter 1/13/2025

Visit on.IN.gov/survey or scan the QR code to provide feedback.
We appreciate your input!

Mail Code 61-53

IDEM Staff	CMOSIER 11/5/2026 Linde Advanced Material Technologies Inc 097-50712-00060 (draft)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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1		Michael Hess Linde Advanced Material Technologies Inc 1500 Polco St Indianapolis IN 46222 (Source CAATS)									
2		Michael Bass Facilities Manager Linde Advanced Material Technologies Inc 1500 Polco St Indianapolis IN 46222 *(RO CAATS)*									
3		Indpls City Council/Mayor/Sustainability ++ 200 E Washington St, City-County Bldg, Ste 2501 Indianapolis IN 46204 *(Local Official)*									
4		Marion County Commissioners ++ 200 E Washington St, City-County Bldg, Ste 801 Indianapolis IN 46204 *(Local Official)*									
5		Speedway Public Library 5633 W 25th St Speedway IN 46224-3899 *(Library)*									
6		Alic Bent August Mack Environmental Inc 1302 N Meridian St Ste 300 Indianapolis IN 46202 *(Consultant)*									
7		Indpls Planning Div, Metropolitan Development ++ 200 E Washington St Rm 2042 Indianapolis IN 46204 *(Local Official)*									
8		Marion County Health Department 3901 Meadows Dr. Indianapolis IN 46205 *(Health Department)*									
9		Mr. Richard Thomas 13431 Spotswood Street Carmel IN 46021 *(Affected Party)*									
10		Indiana Medical Staffing 621 S Taft Ave Indianapolis IN 46241 *(Affected Party)*									
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