INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: Jan. 26, 2011

RE: Arrowhead Plastic Engineering, Inc. / 035-29436-00046

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this approval is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-MOD.dot 12/3/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Monte Foist
Systems Engineer
Arrowhead Plastic Engineering, Inc.
2909 South Hoyt Avenue
Muncie, Indiana 47302

Jan. 26, 2011

Re: 035-29436-00046
Significant Source Modification to
Part 70 Renewal No.: T035-19802-00046

Dear Monte Foist:

Arrowhead Plastic Engineering, Inc. was issued a Part 70 Operating Permit Renewal on April 3, 2006 for a fiberglass parts manufacturing source. A letter requesting changes to this permit was received on June 29, 2010. Pursuant to 326 IAC 2-7-10.5, the modification related to modify the existing 326 IAC 8-1-6 BACT requirements in the permit has been approved.

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 source modification 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.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), 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.

6. Pursuant to 326 IAC 2-7-10.5(l), the modification under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes the installation of Best Available Control Technology (BACT) as required under 326 IAC 8-1-6. Operating conditions shall be incorporated into the Part 70 operating permit through a Permit Renewal No. T035-29415-00046 as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 326 IAC 2-7-8. Operation is not approved until the Permit Renewal has been issued.

All other conditions of the permit shall remain unchanged and in effect.

This decision is subject to the Indiana Administrative Orders and Procedures Act – IC 4-21.5-3-5. If you have any questions on this matter, please contact Mehul Sura, OAQ, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana, 46204-2251, or call at (800) 451-6027, and ask for Mehul Sura or extension (3-6868), or dial (317) 233-6868.

Sincerely,

Chrystal Wagner, Section Chief
Permits Branch
Office of Air Quality

Attachments:
Updated Permit
Technical Support Document

mns

cc: File – Delaware County
Delaware County Health Department
U.S. EPA, Region V
Compliance and Enforcement Managers
Compliance Data Section

Courtney Shattuck
Arrowhead Plastic Engineering, Inc.
1034 Falcon Court
Independence, KY 41051

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Part 70 Significant Source Modification
OFFICE OF AIR QUALITY

Arrowhead Plastic Engineering, Inc.
2909 South Hoyt Avenue
Muncie, Indiana 47302

(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.

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 2-7 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.

Significant Source Modification No.: 035-29436-00046	
Issued by: Chrystal A. Wagner, Section Chief Permits Branch Office of Air Quality	Issuance Date: Jan. 26, 2011

TABLE OF CONTENTS

A. SOURCE SUMMARY
A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]
A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]
A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]
A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

B. GENERAL CONDITIONS
B.1 Definitions [326 IAC 2-7-1]
B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]
B.3 Term of Conditions [326 IAC 2-1.1-9.5]
B.4 Enforceability [326 IAC 2-7-7] [IC 13-17-12]
B.5 Severability [326 IAC 2-7-5(5)]
B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]
B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]
B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]
B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]
B.11 Emergency Provisions [326 IAC 2-7-16]
B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]
B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]
B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]
B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]
B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]
B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]
B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]
B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]
B.20 Source Modification Requirement [326 IAC 2-7-10.5]
B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]
B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]
B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]
B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

C. SOURCE OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]
C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]
C.2 Opacity [326 IAC 5-1]
C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]
C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
C.5 Fugitive Dust Emissions [326 IAC 6-4]
C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

Testing Requirements [326 IAC 2-7-6(1)]
C.7 Performance Testing [326 IAC 3-6]

Compliance Requirements [326 IAC 2-1.1-11]

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

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]
C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

C.11 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
C.12 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]
C.13 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]
C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)] [326 IAC 2-6]
C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]
C.17 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

Stratospheric Ozone Protection

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

D.1 FACILITY OPERATION CONDITIONS – Fiberglass coating and molding operation

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 PSD Minor Limit [326 IAC 2-2]
D.1.2 Best Available Control Technology (BACT) and Volatile Organic Compounds (VOCs) [326 IAC 8-1-6]
D.1.3 Operator Training Requirements [326 IAC 20-56-2]
D.1.4 Particulate [326 IAC 6-3-2(d)]

Compliance Determination Requirements

D.1.8 Volatile Organic Compounds (VOC) [326 IAC 8-1-4] [326 IAC 8-1-2(a)]
D.1.6 Volatile Organic Compounds (VOC) [326 IAC 8-1-4] [326 IAC 8-1-2(a)]

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.10 Monitoring

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.12 Record Keeping Requirements
D.1.13 Reporting Requirements

E.1 FACILITY OPERATION CONDITIONS – Fiberglass coating and molding operation

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to NESHAP WWWW [326 IAC 20-1] [40 CFR Part 63, Subpart A]
E.1.2 NESHAP, WWWW Requirements [40 CFR Part 63, Subpart WWWW] [326 IAC 20-56]

Certification
Emergency Occurrence Report
Part 70 Quarterly Report
Quarterly Deviation and Compliance Monitoring Report
Attachment A - NESHAP, Subpart WWWW

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 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary custom fiberglass parts manufacturing plant.

Source Address:	2909 South Hoyt Avenue, Muncie, Indiana 47302
General Source Phone Number:	(765) 286-0533
SIC Code:	3089
County Location:	Delaware
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Minor Source, under PSD and Emission Offset Rules Major Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(15)]

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

(a) One (1) Gel coat/Resin molding booth, identified as EU-01A, constructed in 1987, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 1, existing affected source under NESHAP, Subpart WWWW.

(b) One (1) Gel coat/Resin molding booth, identified EU-01B, constructed in 1985, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 2, existing affected source under NESHAP, Subpart WWWW.

(c) Two (2) Gel coat/Resin molding booths, identified as EU-01C and EU-01G, constructed in 1994 and 1985, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 4, existing affected source under NESHAP, Subpart WWWW.

(e) One (1) Gel coat/Resin molding booth, identified as EU-01E, constructed in 1985, equipped with dry filters and with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, existing affected source under NESHAP, Subpart WWWW.

(f) One (1) Gel coat/Resin molding booth, identified as EU-01F, constructed in 1977, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat equipped with dry filters and venting to Stacks 5 and 6, existing affected source under NESHAP, Subpart WWWW. .

(g) Three (3) Gel coat/Resin molding booths, identified as EU-01H, EU-01I, and EU-01J, constructed in 1988, 1988, and 1977, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat and equipped with dry filters. Booth EU-01I is venting to Stack SV 8a and 8b, booth EU-01H is venting to stack SV9a and 9b, and booth EU-01J is venting to Stack SV10, existing affected source under NESHAP, Subpart WWWW.

(h) One (1) Gel coat/Resin molding booth, identified as EU-01L, constructed in 1994, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 13, existing affected source under NESHAP, Subpart WWWW.

Open molding booths listed above use mechanical atomized, mechanical non-atomized, manual and Gel coat application processes.

(i) One (1) Resin transfer molding (RTM), identified as, EU-01D, constructed in 1984, equipped with dry filters, with maximum capacity of molding 300 lb/hr of resin, existing affected source under NESHAP, Subpart WWWW.

A.3 Specifically Regulated Insignificant Activities
[326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(15)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21) that have applicable requirements.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

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 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T035-29415-00046, is issued for a fixed term of five (5) 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, including any permit shield provided in 326 IAC 2-7-15, 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 2-7-7] [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 2-7-5(5)]

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 2-7-5(6)(D)]

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

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(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 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(34), 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) A "responsible official" is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(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 July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(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 2-7-5(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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1) and (6)][326 IAC 1-6-3]

(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
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced 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 Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T035-29415-00046 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

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 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination

[326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 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 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-9(a)(3)]

(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 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(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 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(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 2-7-4. 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(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 2-7 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 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 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
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) 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 preconstruction approval required by 326 IAC 2-7-10.5 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
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
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 2-7-20(b),(c), or (e). 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 2-7-20(b)(1), (c)(1), and (e)(2).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
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 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
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 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) 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.20 Source Modification Requirement [326 IAC 2-7-10.5]

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

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

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 Part 70 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 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 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 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.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 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
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within 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) Except as provided in 326 IAC 2-7-19(e), 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 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][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 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

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 forty percent (40%) 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). 326 IAC 6-4-2(4) is not federally enforceable.

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(2).

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

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

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
100 North Senate Avenue
MC 61-53 IGCN 1003
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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-5(1)][326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

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 or of initial start-up, whichever is later, 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 or the date of initial startup, whichever is later, 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
100 North Senate Avenue
MC 61-53 IGCN 1003
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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(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.

(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 2-7-5][326 IAC 2-7-6]

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 2-7-5(12)] [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 2-7-5] [326 IAC 2-7-6]

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 2-7-5][326 IAC 2-7-6]

(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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(b)(2), starting in 2005 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(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. 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 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. 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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34). 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
100 North Senate Avenue
MC 61-53 IGCN 1003
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 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) One (1) Gel coat/Resin molding booth, identified as EU-01A, constructed in 1987, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 1, existing affected source under NESHAP, Subpart WWWW.

(b) One (1) Gel coat/Resin molding booth, identified EU-01B, constructed in 1985, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 2, existing affected source under NESHAP, Subpart WWWW.

(c) Two (2) Gel coat/Resin molding booths, identified as EU-01C and EU-01G, constructed in 1994 and 1985, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 4, existing affected source under NESHAP, Subpart WWWW.

(e) One (1) Gel coat/Resin molding booth, identified as EU-01E, constructed in 1985, equipped with dry filters and with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, existing affected source under NESHAP, Subpart WWWW.

(f) One (1) Gel coat/Resin molding booth, identified as EU-01F, constructed in 1977, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat equipped with dry filters and venting to Stacks 5 and 6, existing affected source under NESHAP, Subpart WWWW. .

(g) Three (3) Gel coat/Resin molding booths, identified as EU-01H, EU-01I, and EU-01J, constructed in 1988, 1988, and 1977, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat and equipped with dry filters. Booth EU-01I is venting to Stack SV 8a and 8b, booth EU-01H is venting to stack SV9a and 9b, and booth EU-01J is venting to Stack SV10, existing affected source under NESHAP, Subpart WWWW.

(h) One (1) Gel coat/Resin molding booth, identified as EU-01L, constructed in 1994, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 13, existing affected source under NESHAP, Subpart WWWW.

Open molding booths listed above use mechanical atomized, mechanical non-atomized, manual and Gel coat application processes.

(i) One (1) Resin transfer molding (RTM), identified as, EU-01D, constructed in 1984, equipped with dry filters, with maximum capacity of molding 300 lb/hr of resin, existing affected source under NESHAP, Subpart WWWW.

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

Emissions Limitation and Standards

D.1.1 PSD Minor Limit [326 IAC 2-2]

The total VOC emissions from EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I, EU-01J, and EU-01L shall not exceed 249 tons per twelve (12) consecutive month period

Compliance with the above limit in conjunction with VOC emissions from the insignificant activities at the source shall limit the VOC emissions from the entire source to less than 250 tons per twelve (12) consecutive month period. Therefore, the source minor under 326 IAC 2-2.

D.1.2 Best Available Control Technology (BACT) and Volatile Organic Compounds (VOCs) [326 IAC 8-1-6][326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 and CP No. 035-8244-00046, issued on November 12, 1998, and revised through SSM No. 035-29415-00046, the BACT for the EU-01A, EU-01B, EU-01C, EU-01G, EU-01D, EU-01E, EU-01H and EU-01I shall be as follows:

(a) The VOC emissions from each booth shall not exceed 16 tons per twelve (12) consecutive months.

(b) Compliance with all applicable requirements of 40 CFR 63, Subpart WWWW, as specified in Section E.1.

(c) Compliance with the requirements of 326 IAC 20-56-2, as specified in Condition D.1.3.

(d) Acetone or other non-VOC containing materials shall be utilized for cleaning purposes.

(e) Storage containers used to store VOC and/or HAPs containing material shall be kept tightly covered when not in use.

(f) Other storage containers used to transport solvent from drums to work stations be closed containers having soft gasketed spring-loaded closures.

D.1.3 Operator Training Requirements [326 IAC 20-56-2]

The Permittee shall comply with the following operator training requirements:

(a) Each owner or operator shall train all new and existing personnel, including contract personnel, who are involved in resin and gel coat spraying and applications that could result in excess emissions if performed improperly according to the following schedule:

(1) All personnel hired shall be trained within thirty (30) days of hiring.

(2) To ensure training goals listed in subsection (b) are maintained, all personnel shall be given refresher training annually.

(3) Personnel who have been trained by another owner or operator subject to this rule are exempt from paragraph (1) if written documentation that the employee's training is current is provided to the new employer.

(b) The lesson plans shall cover, for the initial and refresher training, at a minimum, all of the following topics:

(1) Appropriate application techniques.

(2) Appropriate equipment cleaning procedures.

(3) Appropriate equipment setup and adjustment to minimize material usage and overspray.

(c) The owner or operator shall maintain the following training records on site and make them available for inspection and review:

(1) A copy of the current training program.

(2) A list of the following:

(A) All current personnel, by name, that are required to be trained.

(B) The date the person was trained or date of most recent refresher training, whichever is later.

(d) Records of prior training programs and former personnel are not required to be maintained.

D.1.4 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate from the from EU-01A, EU-01B, EU-01C and EU-01G, EU-01D, EU-01E, EU-01F, EU-01H, EU-01I and EU-01J and EU-01L shall be controlled by dry particulate filters and the Permittee shall operate the control device in accordance with manufacturer's specifications.

Compliance Determination Requirements

D.1.5 Volatile Organic Compounds (VOC) [326 IAC 8-1-4] [326 IAC 8-1-2(a)]

Compliance with the Conditions D.1.1 and D.1.2(a) shall be determined using the following calculation and criteria:

(a) VOC emissions from each of the booths from EU-01A, EU-01B, EU-01C, EU-01E, EU-01G, EU-01H and EU-01I shall be determined as follows:

$$\text{VOC emissions (tons/month)} = \sum_{i=1}^{i=n} ((A_i * B_i) / 2000) * (UEF_i / 2000) + D$$

here: n = no. of coatings used during the month
A_i = Density (lb/gal resin or gel)
Bi = Gallons of resin or gel used per month
UEFi = Unified Emission Factor for Open Molding of Composites (lb monomer/ton resin or gel)
i = type of resin or gel
2000 = conversion factor (lbs/ton)
D = VOC input due to solvent usage (tons/month)

The VOC/HAPs emission factors shall be applied as described follows:

<u>Resin Application</u>
The emission factor representing 'Mechanical Atomized' application in the UEF table shall be used for any atomized resin spray application method.

The emission factor representing 'Mechanical Non-Atomized' application in the UEF table shall be used for non-atomized resin application method.

<u>Gel coat Application</u>
The emission factor representing 'Gel coat Application' application in the UEF table shall be used for any atomized gel spray application method.

The emission factor representing 'Gel coat Non-Atomized' application in the UEF table shall be used for non-atomized gel coat application method.

(b) VOC emissions from EU-01D shall be determined as follows:

$$\text{VOC emissions (tons/month)} = \sum_{i=1}^{i=n} ((A_i * B_i * C_i) * (EF / 2000) + \text{VOC input due to Catalyst Usage (tons/month) * Flash Off value} + \text{VOC input due to release agent (tons/month0}$$

here: n = no. of coatings used during the month
Ai = Density (lb /gal resin or gel)
Bi = Weight % monomer
Ci = Gallons of resin or gel used per month
EF = Emission Factor for Close Molding of Composites
(3 lb monomer emitted/100 lb monomer used)
2000 = conversion factor (lbs/ton)
Flash Off value=0.06

(c) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA approved form, emission factors shall be taken from the following reference approved by IDEM, OAQ: "Unified Emission Factors for Open Molding of Composites", July 23, 2001, or its updates, except use of controlled spray emission factors must be approved by the commissioner. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.

D.1.6 Volatile Organic Compounds (VOC) [326 IAC 8-1-4] [326 IAC 8-1-2(a)]

In order to comply with the Conditions D.1.1 and D.1.2(a), the Permittee shall determine VOC content and usage using methods specified in 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets and using the CFA Unified Emissions Factors. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Compliance Monitoring Requirements

D.1.7 Monitoring

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry media filters, weekly observations shall be made of the particulate matter from the stacks/vents of EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I and EU-01J and EU-01L while these emission units are in operation. If abnormal emissions are observed, the Permittee shall take reasonable response steps. 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.

(b) Monthly inspections shall be performed of the emissions from the stacks/vents and the particulate matter on the rooftops and the nearby ground. When there is a noticeable change in particulate matter emissions, or when evidence of particulate matter emission is observed, the Permittee shall take reasonable response steps. 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.

Record Keeping and Reporting Requirements

D.1.8 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.1 and D.1.2(a), the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.1.1 and D.1.2(a).

(1) The usage by weight and monomer content of each resin and gel coat used and the usage by weight of each solvent. Records shall include purchase orders, invoices, and material safety data sheets (MSDS), manufacturer's certified product data sheets, and calculations necessary to verify the type, amount used, and VOC/HAP content of each resin or gel coat.

(2) The usage by weight of catalyst used at EU-01D each month.

(3) A log of the dates when resins, gel coats and solvents are used.

(4) Methods of application and other emission reduction techniques for each resin and gel coat used.

(5) Time periods and dates for each application method used for gel coats and resins.

(b) To document the compliance status with Condition D.1.4, the Permittee shall maintain a log of monthly overspray observations and daily inspections of the filters.

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

D.1.13 Reporting Requirements

A monthly summary of the information to document the compliance status with Conditions D.1.1 and D.1.2(a), shall be submitted quarterly to the address listed in Section C - General Reporting Requirements, of this permit using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by a "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION E.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) One (1) Gel coat/Resin molding booth, identified as EU-01A, constructed in 1987, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 1, existing affected source under NESHAP, Subpart WWWW.

(b) One (1) Gel coat/Resin molding booth, identified EU-01B, constructed in 1985, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 2, existing affected source under NESHAP, Subpart WWWW.

(c) Two (2) Gel coat/Resin molding booths, identified as EU-01C and EU-01G, constructed in 1994 and 1985, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 4, existing affected source under NESHAP, Subpart WWWW.

(e) One (1) Gel coat/Resin molding booth, identified as EU-01E, constructed in 1985, equipped with dry filters and with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, existing affected source under NESHAP, Subpart WWWW.

(f) One (1) Gel coat/Resin molding booth, identified as EU-01F, constructed in 1977, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat equipped with dry filters and venting to Stacks 5 and 6, existing affected source under NESHAP, Subpart WWWW. .

(g) Three (3) Gel coat/Resin molding booths, identified as EU-01H, EU-01I, and EU-01J, constructed in 1988, 1988, and 1977, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat and equipped with dry filters. Booth EU-01I is venting to Stack SV 8a and 8b, booth EU-01H is venting to stack SV9a and 9b, and booth EU-01J is venting to Stack SV10, existing affected source under NESHAP, Subpart WWWW.

(h) One (1) Gel coat/Resin molding booth, identified as EU-01L, constructed in 1994, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 13, existing affected source under NESHAP, Subpart WWWW.

Open molding booths listed above use mechanical atomized, mechanical non-atomized, manual and Gel coat application processes.

(i) One (1) Resin transfer molding (RTM), identified as, EU-01D, constructed in 1984, equipped with dry filters, with maximum capacity of molding 300 lb/hr of resin, existing affected source under NESHAP, Subpart WWWW.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to NESHAP WWWW [326 IAC 20-1] [40 CFR Part 63, Subpart A]

Pursuant to 40 CFR 63.5925, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, as specified in Table 15 of 40 CFR Part 63, Subpart WWWW in accordance with schedule in 40 CFR 63 Subpart WWWW.

E.1.2 NESHAP, WWWW Requirements [40 CFR Part 63, Subpart WWWW] [326 IAC 20-56]

Pursuant to CFR Part 63, Subpart WWWW (National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, which are incorporated by reference as 326 IAC 20-56), the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart WWWW (included as Attachment A of this permit):

(a) 40 CFR 63.5785(a)

(b) 40 CFR 63.5790

(c) 40 CFR 63.5795

(d) 40 CFR 63.5796

(e) 40 CFR 63.5797

(f) 40 CFR 63.5798

(g) 40 CFR 63.5799

(h) 40 CFR 63.5800

(i) 40 CFR 63.5805 (b)

(j) 40 CFR 63.5810 (a) (b) and (d)

(k) 40 CFR 63.5835(a) and (c)

(l) 40 CFR 63.5840

(m) 40 CFR 63.5860(a)

(n) 40 CFR 63.5895(b) (c) and (d)

(o) 40 CFR 63.5900(a) (2) (3) (4), (b), (c) and (e)

(p) 40 CFR 63.5905

(q) 40 CFR 63.5910(a), (b), (c), (d), (e), (g) and (h)

(r) 40 CFR 63.5915(a), (c) and (d)

(s) 40 CFR 63.5920

(t) 40 CFR 63.5925

(u) 40 CFR 63.5930

(v) 40 CFR 63.5935

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Arrowhead Plastic Engineering, Inc.
Source Address: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Part 70 Permit No.: T035-29415-00046

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:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Arrowhead Plastic Engineering, Inc.
Source Address: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Part 70 Permit No.: T035-29415-00046

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12) • The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and • The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Arrowhead Plastic Engineering, Inc.
Source Address: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Part 70 Permit No.: T035-29415-00046
Facility: EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I, EU-01J, and EU-01L
Parameter: total VOC emissions
Limit: 249 tons per twelve (12) consecutive month period

QUARTER : YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Arrowhead Plastic Engineering, Inc.
Source Address: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Part 70 Permit No.: T035-29415-00046
Facility: EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I.
Parameter: VOC emissions from each facility
Limit: 16 tons per twelve (12) consecutive month period.

YEAR:

	Emission Unit	Column 1	Column 2	Column 1 + Column 2
		VOC Emissions this Month	VOC Emissions Previous 11 Months	VOC Emissions 12 Month Total
Month 1	EU-01A			
	EU-01B			
	EU-01C			
	EU-01D			
	EU-01E			
	EU-01G			
	EU-01H			
	EU-01I			
Month 2	EU-01A			
	EU-01B			
	EU-01C			
	EU-01D			
	EU-01E			
	EU-01G			
	EU-01H			
	EU-01I			
Month 3	EU-01A			
	EU-01B			
	EU-01C			
	EU-01D			
	EU-01E			
	EU-01G			
	EU-01H			
	EU-01I			

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Arrowhead Plastic Engineering, Inc.
Source Address: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Part 70 Permit No.: T035-29415-00046

Months: _____ to _____ Year: _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. 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 A

to Part 70 Operating Permit Renewal No. T035-29415-00046

Arrowhead Plastic Engineering, Inc.
2909 South Hoyt Avenue, Muncie, Indiana 47302

Title 40: Protection of Environment
PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart WWWW—National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production

Source: 68 FR 19402, Apr. 21, 2003, unless otherwise noted.

What This Subpart Covers

§ 63.5780 What is the purpose of this subpart?

This subpart establishes national emissions standards for hazardous air pollutants (NESHAP) for reinforced plastic composites production. This subpart also establishes requirements to demonstrate initial and continuous compliance with the hazardous air pollutants (HAP) emissions standards.

§ 63.5785 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a reinforced plastic composites production facility that is located at a major source of HAP emissions. Reinforced plastic composites production is limited to operations in which reinforced and/or nonreinforced plastic composites or plastic molding compounds are manufactured using thermoset resins and/or gel coats that contain styrene to produce plastic composites. The resins and gel coats may also contain materials designed to enhance the chemical, physical, and/or thermal properties of the product. Reinforced plastic composites production also includes cleaning, mixing, HAP-containing materials storage, and repair operations associated with the production of plastic composites.

(b) You are not subject to this subpart if your facility only repairs reinforced plastic composites. Repair includes the non-routine manufacture of individual components or parts intended to repair a larger item as defined in §63.5935

(c) You are not subject to this subpart if your facility is a research and development facility as defined in section 112(c)(7) of the Clean Air Act (CAA).

(d) You are not subject to this subpart if your reinforced plastic composites operations use less than 1.2 tons per year (tpy) of thermoset resins and gel coats that contain styrene combined.

§ 63.5787 What if I also manufacture fiberglass boats or boat parts?

(a) If your source meets the applicability criteria in §63.5785, and is not subject to the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV), you are subject to this subpart regardless of the final use of the parts you manufacture.

(b) If your source is subject to 40 CFR part 63, subpart VVVV, and all the reinforced plastic composites you manufacture are used in manufacturing your boats, you are not subject to this subpart.

(c) If you are subject to 40 CFR part 63, subpart VVVV, and meet the applicability criteria in §63.5785, and produce reinforced plastic composites that are not used in fiberglass boat manufacture at your facility, all operations associated with the manufacture of the reinforced plastic composites parts that are not used in fiberglass boat manufacture at your facility are subject to this subpart, except as noted in paragraph (d) of this section.

(d) Facilities potentially subject to both this subpart and 40 CFR part 63, subpart VVVV may elect to have the operations in paragraph (c) of this section covered by 40 CFR part 63, subpart VVVV, in lieu of this subpart, if they can demonstrate that this will not result in any organic HAP emissions increase compared to complying with this subpart.

§ 63.5790 What parts of my plant does this subpart cover?

(a) This subpart applies to each new or existing affected source at reinforced plastic composites production facilities.

(b) The affected source consists of all parts of your facility engaged in the following operations: Open molding, closed molding, centrifugal casting, continuous lamination, continuous casting, polymer casting, pultrusion, sheet molding compound (SMC) manufacturing, bulk molding compound (BMC) manufacturing, mixing, cleaning of equipment used in reinforced plastic composites manufacture, HAP-containing materials storage, and repair operations on parts you also manufacture.

(c) The following operations are specifically excluded from any requirements in this subpart: application of mold sealing and release agents; mold stripping and cleaning; repair of parts that you did not manufacture, including non-routine manufacturing of parts; personal activities that are not part of the manufacturing operations (such as hobby shops on military bases); prepreg materials as defined in §63.5935; non-gel coat surface coatings; application of putties, polyputties, and adhesives; repair or production materials that do not contain resin or gel coat; research and development operations as defined in section 112(c)(7) of the CAA; polymer casting; and closed molding operations (except for compression/injection molding). Note that the exclusion of certain operations from any requirements applies only to operations specifically listed in this paragraph. The requirements for any co-located operations still apply.

(d) Production resins that must meet military specifications are allowed to meet the organic HAP limit contained in that specification. In order for this exemption to be used, you must supply to the permitting authority the specifications certified as accurate by the military procurement officer, and those specifications must state a requirement for a specific resin, or a specific resin HAP content. Production resins for which this exemption is used must be applied with nonatomizing resin application equipment unless you can demonstrate this is infeasible. You must keep a record of the resins for which you are using this exemption.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50124, Aug. 25, 2005]

§ 63.5795 How do I know if my reinforced plastic composites production facility is a new affected source or an existing affected source?

(a) A reinforced plastic composites production facility is a new affected source if it meets all the criteria in paragraphs (a)(1) and (2) of this section.

(1) You commence construction of the source after August 2, 2001.

(2) You commence construction, and no other reinforced plastic composites production source exists at that site.

(b) For the purposes of this subpart, an existing affected source is any affected source that is not a new affected source.

[70 FR 50124, Aug. 25, 2005]

Calculating Organic HAP Emissions Factors for Open Molding and Centrifugal Casting

§ 63.5796 What are the organic HAP emissions factor equations in Table 1 to this subpart, and how are they used in this subpart?

Emissions factors are used in this subpart to determine compliance with certain organic HAP emissions limits in Tables 3 and 5 to this subpart. You may use the equations in Table 1 to this subpart to calculate your emissions factors. Equations are available for each open molding operation and centrifugal casting operation and have units of pounds of organic HAP emitted per ton (lb/ton) of resin or gel coat applied. These equations are intended to provide a method for you to demonstrate compliance without the need to conduct for a HAP emissions test. In lieu of these equations, you can elect to use site-specific organic HAP emissions factors to demonstrate compliance provided your site-specific organic HAP emissions factors are incorporated in the facility's air emissions permit and are based on actual facility HAP emissions test data. You may also use the organic HAP emissions factors calculated using the equations in Table 1 to this subpart, combined with resin and gel coat use data, to calculate your organic HAP emissions.

§ 63.5797 How do I determine the organic HAP content of my resins and gel coats?

In order to determine the organic HAP content of resins and gel coats, you may rely on information provided by the material manufacturer, such as manufacturer's formulation data and material safety data sheets (MSDS), using the procedures specified in paragraphs (a) through (c) of this section, as applicable.

(a) Include in the organic HAP total each organic HAP that is present at 0.1 percent by mass or more for Occupational Safety and Health Administration-defined carcinogens, as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other organic HAP compounds.

(b) If the organic HAP content is provided by the material supplier or manufacturer as a range, you must use the upper limit of the range for determining compliance. If a separate measurement of the total organic HAP content, such as an analysis of the material by EPA Method 311 of appendix A to 40 CFR part 63, exceeds the upper limit of the range of the total organic HAP content provided by the material supplier or manufacturer, then you must use the measured organic HAP content to determine compliance.

(c) If the organic HAP content is provided as a single value, you may use that value to determine compliance. If a separate measurement of the total organic HAP content is made and is less than 2 percentage points higher than the value for total organic HAP content provided by the material supplier or manufacturer, then you still may use the provided value to demonstrate compliance. If the measured total organic HAP content exceeds the provided value by 2 percentage points or more, then you must use the measured organic HAP content to determine compliance.

§ 63.5798 What if I want to use, or I manufacture, an application technology (new or existing) whose organic HAP emissions characteristics are not represented by the equations in Table 1 to this subpart?

If you wish to use a resin or gel coat application technology (new or existing), whose emission characteristics are not represented by the equations in Table 1 to this subpart, you may use the procedures in paragraphs (a) or (b) of this section to establish an organic HAP emissions factor. This organic HAP emissions factor may then be used to determine compliance with the emission limits in this subpart, and to calculate facility organic HAP emissions.

(a) Perform an organic HAP emissions test to determine a site-specific organic HAP emissions factor using the test procedures in §63.5850.

(b) Submit a petition to the Administrator for administrative review of this subpart. This petition must contain a description of the resin or gel coat application technology and supporting organic HAP emissions test data obtained using EPA test methods or their equivalent. The emission test data should be obtained using a range of resin or gel coat HAP contents to demonstrate the effectiveness of the technology under the different conditions, and to demonstrate that the technology will be effective at different sites. We will review the submitted data, and, if appropriate, update the equations in Table 1 to this subpart.

§ 63.5799 How do I calculate my facility's organic HAP emissions on a tpy basis for purposes of determining which paragraphs of §63.5805 apply?

To calculate your facility's organic HAP emissions in tpy for purposes of determining which paragraphs in §63.5805 apply to you, you must use the procedures in either paragraph (a) of this section for new facilities prior to startup, or paragraph (b) of this section for existing facilities and new facilities after startup. You are not required to calculate or report emissions under this section if you are an existing facility that does not have centrifugal casting or continuous lamination/casting operations, or a new facility that does not have any of the following operations: Open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC and BMC manufacturing, and mixing. Emissions calculation and emission reporting procedures in other sections of this subpart still apply. Calculate organic HAP emissions prior to any add-on control device, and do not include organic HAP emissions from any resin or gel coat used in operations subject to the Boat Manufacturing NESHAP, 40 CFR part 63, subpart VVVV, or from the manufacture of large parts as defined in §63.5805(d)(2). For centrifugal casting operations at existing facilities, do not include any organic HAP emissions where resin or gel coat is applied to an open centrifugal mold using open molding application techniques. Table 1 and the Table 1 footnotes to this subpart present more information on calculating centrifugal casting organic HAP emissions. The timing and reporting of these calculations is discussed in paragraph (c) of this section.

(a) For new facilities prior to startup, calculate a weighted average organic HAP emissions factor for the operations specified in §63.5805(c) and (d) on a lbs/ton of resin and gel coat basis. Base the weighted average on your projected operation for the 12 months subsequent to facility startup. Multiply the weighted average organic HAP emissions factor by projected resin use over the same period. You may calculate your organic HAP emissions factor based on the factors in Table 1 to this subpart, or you may use any HAP emissions factor approved by us, such as factors from the “Compilation of Air Pollutant Emissions Factors, Volume I: Stationary Point and Area Sources (AP–42),” or organic HAP emissions test data from similar facilities.

(b) For existing facilities and new facilities after startup, you may use the procedures in either paragraph (b)(1) or (2) of this section. If the emission factors for an existing facility have changed over the period of time prior to their initial compliance date due to incorporation of pollution-

prevention control techniques, existing facilities may base the average emission factor on their operations as they exist on the compliance date. If an existing facility has accepted an enforceable permit limit that would result in less than 100 tpy of HAP measured prior to any add-on controls, and can demonstrate that they will operate at that level subsequent to the compliance date, they can be deemed to be below the 100 tpy threshold.

(1) *Use a calculated emission factor.* Calculate a weighted average organic HAP emissions factor on a lbs/ton of resin and gel coat basis. Base the weighted average on the prior 12 months of operation. Multiply the weighted average organic HAP emissions factor by resin and gel coat use over the same period. You may calculate this organic HAP emissions factor based on the equations in Table 1 to this subpart, or you may use any organic HAP emissions factor approved by us, such as factors from AP–42, or site-specific organic HAP emissions factors if they are supported by HAP emissions test data.

(2) *Conduct performance testing.* Conduct performance testing using the test procedures in §63.5850 to determine a site-specific organic HAP emissions factor in units of lbs/ton of resin and gel coat used. Conduct the test under conditions expected to result in the highest possible organic HAP emissions. Multiply this factor by annual resin and gel coat use to determine annual organic HAP emissions. This calculation must be repeated and reported annually.

(c) Existing facilities must initially perform this calculation based on their 12 months of operation prior to April 21, 2003, and include this information with their initial notification report. Existing facilities must repeat the calculation based on their resin and gel coat use in the 12 months prior to their initial compliance date, and submit this information with their initial compliance report. After their initial compliance date, existing and new facilities must recalculate organic HAP emissions over the 12-month period ending June 30 or December 31, whichever date is the first date following their compliance date specified in §63.5800. Subsequent calculations should cover the periods in the semiannual compliance reports.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50124, Aug. 25, 2005]

Compliance Dates and Standards

§ 63.5800 When do I have to comply with this subpart?

You must comply with the standards in this subpart by the dates specified in Table 2 to this subpart. Facilities meeting an organic HAP emissions standard based on a 12-month rolling average must begin collecting data on the compliance date in order to demonstrate compliance.

§ 63.5805 What standards must I meet to comply with this subpart?

You must meet the requirements of paragraphs (a) through (h) of this section that apply to you. You may elect to comply using any options to meet the standards described in §§63.5810 through 63.5830. Use the procedures in §63.5799 to determine if you meet or exceed the 100 tpy threshold.

(a) If you have an existing facility that has any centrifugal casting or continuous casting/lamination operations, you must meet the requirements of paragraph (a)(1) or (2) of this section:

(1) If the combination of all centrifugal casting and continuous lamination/casting operations emit 100 tpy or more of HAP, you must reduce the total organic HAP emissions from centrifugal casting and continuous lamination/casting operations by at least 95 percent by weight. As an alternative to meeting the 95 percent by weight requirement, centrifugal casting operations may

meet the applicable organic HAP emissions limits in Table 5 to this subpart and continuous lamination/casting operations may meet an organic HAP emissions limit of 1.47 lbs/ton of neat resin plus and neat gel coat plus applied. For centrifugal casting, the percent reduction requirement does not apply to organic HAP emissions that occur during resin application onto an open centrifugal casting mold using open molding application techniques.

(2) If the combination of all centrifugal casting and continuous lamination/casting operations emit less than 100 tpy of HAP, then centrifugal casting and continuous lamination/casting operations must meet the appropriate requirements in Table 3 to this subpart.

(b) All operations at existing facilities not listed in paragraph (a) of this section must meet the organic HAP emissions limits in Table 3 to this subpart and the work practice standards in Table 4 to this subpart that apply, regardless of the quantity of HAP emitted.

(c) If you have a new facility that emits less than 100 tpy of HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC manufacturing, mixing, and BMC manufacturing, you must meet the organic HAP emissions limits in Table 3 to this subpart and the work practice standards in Table 4 to this subpart that apply to you.

(d)(1) Except as provided in paragraph (d)(2) of this section, if you have a new facility that emits 100 tpy or more of HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC manufacturing, mixing, and BMC manufacturing, you must reduce the total organic HAP emissions from these operations by at least 95 percent by weight and meet any applicable work practice standards in Table 4 to this subpart that apply to you. As an alternative to meeting 95 percent by weight, you may meet the organic HAP emissions limits in Table 5 to this subpart. If you have a continuous lamination/casting operation, that operation may alternatively meet an organic HAP emissions limit of 1.47 lbs/ton of neat resin plus and neat gel coat plus applied.

(2)(i) If your new facility manufactures large reinforced plastic composites parts using open molding or pultrusion operations, the specific open molding and pultrusion operations used to produce large parts are not required to reduce HAP emissions by 95 weight percent, but must meet the emission limits in Table 3 to this subpart.

(ii) A large open molding part is defined as a part that, when the final finished part is enclosed in the smallest rectangular six-sided box into which the part can fit, the total interior volume of the box exceeds 250 cubic feet, or any interior sides of the box exceed 50 square feet.

(iii) A large pultruded part is a part that exceeds an outside perimeter of 24 inches or has more than 350 reinforcements.

(e) If you have a new or existing facility subject to paragraph (a)(2) or (c) of this section at its initial compliance date that subsequently meets or exceeds the 100 tpy threshold in any calendar year, you must notify your permitting authority in your compliance report. You may at the same time request a one-time exemption from the requirements of paragraph (a)(1) or (d) of this section in your compliance report if you can demonstrate all of the following:

(1) The exceedance of the threshold was due to circumstances that will not be repeated.

(2) The average annual organic HAP emissions from the potentially affected operations for the last 3 years were below 100 tpy.

(3) Projected organic HAP emissions for the next calendar year are below 100 tpy, based on projected resin and gel coat use and the HAP emission factors calculated according to the procedures in §63.5799.

(f) If you apply for an exemption in paragraph (e) of this section and subsequently exceed the HAP emission thresholds specified in paragraph (a)(2) or (c) of this section over the next 12-month period, you must notify the permitting authority in your semiannual report, the exemption is removed, and your facility must comply with paragraph (a)(1) or (d) of this section within 3 years from the time your organic HAP emissions first exceeded the threshold.

(g) If you have repair operations subject to this subpart as defined in §63.5785, these repair operations must meet the requirements in Tables 3 and 4 to this subpart and are not required to meet the 95 percent organic HAP emissions reduction requirements in paragraph (a)(1) or (d) of this section.

(h) If you use an add-on control device to comply with this subpart, you must meet all requirements contained in 40 CFR part 63, subpart SS.

[70 FR 50124, Aug. 25, 2005]

Options for Meeting Standards

§ 63.5810 What are my options for meeting the standards for open molding and centrifugal casting operations at new and existing sources?

You must use one of the following methods in paragraphs (a) through (d) of this section to meet the standards for open molding or centrifugal casting operations in Table 3 or 5 to this subpart. You may use any control method that reduces organic HAP emissions, including reducing resin and gel coat organic HAP content, changing to nonatomized mechanical application, using covered curing techniques, and routing part or all of your emissions to an add-on control. You may use different compliance options for the different operations listed in Table 3 or 5 to this subpart. The necessary calculations must be completed within 30 days after the end of each month. You may switch between the compliance options in paragraphs (a) through (d) of this section. When you change to an option based on a 12-month rolling average, you must base the average on the previous 12 months of data calculated using the compliance option you are changing to, unless you were previously using an option that did not require you to maintain records of resin and gel coat use. In this case, you must immediately begin collecting resin and gel coat use data and demonstrate compliance 12 months after changing options.

(a) *Demonstrate that an individual resin or gel coat, as applied, meets the applicable emission limit in Table 3 or 5 to this subpart.* (1) Calculate your actual organic HAP emissions factor for each different process stream within each operation type. A process stream is defined as each individual combination of resin or gel coat, application technique, and control technique. Process streams within operations types are considered different from each other if any of the following four characteristics vary: the neat resin plus or neat gel coat plus organic HAP content, the gel coat type, the application technique, or the control technique. You must calculate organic HAP emissions factors for each different process stream by using the appropriate equations in Table 1 to this subpart for open molding and for centrifugal casting, or site-specific organic HAP emissions factors discussed in §63.5796. The emission factor calculation should include any and all emission reduction techniques used including any add-on controls. If you are using vapor suppressants to reduce HAP emissions, you must determine the vapor suppressant effectiveness (VSE) by conducting testing according to the procedures specified in appendix A to subpart WWWW of 40 CFR part 63. If you are using an add-on control device to reduce HAP emissions, you must determine the add-on control factor by conducting capture and control efficiency testing

using the procedures specified in §63.5850. The organic HAP emissions factor calculated from the equations in Table 1 to this subpart, or a site-specific emissions factor, is multiplied by the add-on control factor to calculate the organic HAP emissions factor after control. Use Equation 1 of this section to calculate the add-on control factor used in the organic HAP emissions factor equations.

$$\text{Add-on Control Factor} = 1 - \frac{\%\ \text{Control Efficiency}}{100} \qquad \text{(Eq. 1)}$$

Where:

Percent Control Efficiency=a value calculated from organic HAP emissions test measurements made according to the requirements of §63.5850 to this subpart.

(2) If the calculated emission factor is less than or equal to the appropriate emission limit, you have demonstrated that this process stream complies with the emission limit in Table 3 to this subpart. It is not necessary that all your process streams, considered individually, demonstrate compliance to use this option for some process streams. However, for any individual resin or gel coat you use, if any of the process streams that include that resin or gel coat are to be used in any averaging calculations described in paragraphs (b) through (d) of this section, then all process streams using that individual resin or gel coat must be included in the averaging calculations.

(b) *Demonstrate that, on average, you meet the individual organic HAP emissions limits for each combination of operation type and resin application method or gel coat type.* Demonstrate that on average you meet the individual organic HAP emissions limits for each unique combination of operation type and resin application method or gel coat type shown in Table 3 to this subpart that applies to you.

(1)(i) Group the process streams described in paragraph (a) to this section by operation type and resin application method or gel coat type listed in Table 3 to this subpart and then calculate a weighted average emission factor based on the amounts of each individual resin or gel coat used for the last 12 months. To do this, sum the product of each individual organic HAP emissions factor calculated in paragraph (a)(1) of this section and the amount of neat resin plus and neat gel coat plus usage that corresponds to the individual factors and divide the numerator by the total amount of neat resin plus and neat gel coat plus used in that operation type as shown in Equation 2 of this section.

$$\text{Average organic HAP Emissions Factor} = \frac{\sum_{i=1}^{n}(\text{Actual Process Stream EF}_i * \text{Material}_i)}{\sum_{i=1}^{n} Material_i} \qquad \text{(Eq. 2)}$$

Where:

Actual Process Stream EF_i=actual organic HAP emissions factor for process stream i, lbs/ton;

$Material_i$=neat resin plus or neat gel coat plus used during the last 12 calendar months for process stream i, tons;

n=number of process streams where you calculated an organic HAP emissions factor.

(ii) You may, but are not required to, include process streams where you have demonstrated compliance as described in paragraph (a) of this section, subject to the limitations described in paragraph (a)(2) of this section, and you are not required to and should not include process streams for which you will demonstrate compliance using the procedures in paragraph (d) of this section.

(2) Compare each organic HAP emissions factor calculated in paragraph (b)(1) of this section with its corresponding organic HAP emissions limit in Table 3 or 5 to this subpart. If all emissions factors are equal to or less than their corresponding emission limits, then you are in compliance.

(c) *Demonstrate compliance with a weighted average emission limit.* Demonstrate each month that you meet each weighted average of the organic HAP emissions limits in Table 3 or 5 to this subpart that apply to you. When using this option, you must demonstrate compliance with the weighted average organic HAP emissions limit for all your open molding operations, and then separately demonstrate compliance with the weighted average organic HAP emissions limit for all your centrifugal casting operations. Open molding operations and centrifugal casting operations may not be averaged with each other.

(1) Each month calculate the weighted average organic HAP emissions limit for all open molding operations and the weighted average organic HAP emissions limit for all centrifugal casting operations for your facility for the last 12-month period to determine the organic HAP emissions limit you must meet. To do this, multiply the individual organic HAP emissions limits in Table 3 or 5 to this subpart for each open molding (centrifugal casting) operation type by the amount of neat resin plus or neat gel coat plus used in the last 12 months for each open molding (centrifugal casting) operation type, sum these results, and then divide this sum by the total amount of neat resin plus and neat gel coat plus used in open molding (centrifugal casting) over the last 12 months as shown in Equation 3 of this section.

$$\text{Weighted Average Emission Limit} = \frac{\sum_{i=1}^{n} (EL_i * Material_i)}{\sum_{i=1}^{n} Material_i} \qquad \text{(Eq. 3)}$$

Where:

EL_i=organic HAP emissions limit for operation type i, lbs/ton from Tables 3 or 5 to this subpart;

$Material_i$=neat resin plus or neat gel coat plus used during the last 12-month period for operation type i, tons;

n=number of operations.

(2) Each month calculate your weighted average organic HAP emissions factor for open molding and centrifugal casting. To do this, multiply your actual open molding (centrifugal casting) operation organic HAP emissions factors calculated in paragraph (b)(1) of this section and the amount of neat resin plus and neat gel coat plus used in each open molding (centrifugal casting) operation type, sum the results, and divide this sum by the total amount of neat resin plus and neat gel coat plus used in open molding (centrifugal casting) operations as shown in Equation 4 of this section.

$$\text{Actual Weighted Average organic HAP Emissions Factor} = \frac{\sum_{i=1}^{n}(\text{Actual Operation } EF_i * \text{Material}_i)}{\sum_{i=1}^{n} Material_i} \quad \text{(Eq. 4)}$$

Where:

Actual Individual EF_i=Actual organic HAP emissions factor for operation type i, lbs/ton;

$Material_i$=neat resin plus or neat gel coat plus used during the last 12 calendar months for operation type i, tons;

n=number of operations.

(3) Compare the values calculated in paragraphs (c)(1) and (2) of this section. If each 12-month rolling average organic HAP emissions factor is less than or equal to the corresponding 12-month rolling average organic HAP emissions limit, then you are in compliance.

(d) *Meet the organic HAP emissions limit for one application method and use the same resin(s) for all application methods of that resin type.* This option is limited to resins of the same type. The resin types for which this option may be used are noncorrosion-resistant, corrosion-resistant and/or high strength, and tooling.

(1) For any combination of manual resin application, mechanical resin application, filament application, or centrifugal casting, you may elect to meet the organic HAP emissions limit for any one of these application methods and use the same resin in all of the resin application methods listed in this paragraph (d)(1). Table 7 to this subpart presents the possible combinations based on a facility selecting the application process that results in the highest allowable organic HAP content resin. If the resin organic HAP content is below the applicable value shown in Table 7 to this subpart, the resin is in compliance.

(2) You may also use a weighted average organic HAP content for each application method described in paragraph (d)(1) of this section. Calculate the weighted average organic HAP content monthly. Use Equation 2 in paragraph (b)(1) of this section except substitute organic HAP content for organic HAP emissions factor. You are in compliance if the weighted average organic HAP content based on the last 12 months of resin use is less than or equal to the applicable organic HAP contents in Table 7 to this subpart.

(3) You may simultaneously use the averaging provisions in paragraph (b) or (c) of this section to demonstrate compliance for any operations and/or resins you do not include in your compliance demonstrations in paragraphs (d)(1) and (2) of this section. However, any resins for which you claim compliance under the option in paragraphs (d)(1) and (2) of this section may not be included in any of the averaging calculations described in paragraph (b) or (c) of this section.

(4) You do not have to keep records of resin use for any of the individual resins where you demonstrate compliance under the option in paragraph (d)(1) of this section unless you elect to include that resin in the averaging calculations described in paragraph (d)(2) of this section.

[70 FR 50125, Aug. 25, 2005]

§ 63.5820 What are my options for meeting the standards for continuous lamination/casting operations?

You must use one or more of the options in paragraphs (a) through (d) of this section to meet the standards in §63.5805. Use the calculation procedures in §§63.5865 through 63.5890.

(a) *Compliant line option.* Demonstrate that each continuous lamination line and each continuous casting line complies with the applicable standard.

(b) *Averaging option.* Demonstrate that all continuous lamination and continuous casting lines combined, comply with the applicable standard.

(c) *Add-on control device option.* If your operation must meet the 58.5 weight percent organic HAP emissions reduction limit in Table 3 to this subpart, you have the option of demonstrating that you achieve 95 percent reduction of all wet-out area organic HAP emissions.

(d) *Combination option.* Use any combination of options in paragraphs (a) and (b) of this section or, for affected sources at existing facilities, any combination of options in paragraphs (a), (b), and (c) of this section (in which one or more lines meet the standards on their own, two or more lines averaged together meet the standards, and one or more lines have their wet-out areas controlled to a level of 95 percent).

§ 63.5830 What are my options for meeting the standards for pultrusion operations subject to the 60 weight percent organic HAP emissions reductions requirement?

You must use one or more of the options in paragraphs (a) through (e) of this section to meet the 60 weight percent organic HAP emissions limit in Table 3 to this subpart, as required in §63.5805.

(a) Achieve an overall reduction in organic HAP emissions of 60 weight percent by capturing the organic HAP emissions and venting them to a control device or any combination of control devices. Conduct capture and destruction efficiency testing as specified in 63.5850 to this subpart to determine the percent organic HAP emissions reduction.

(b) Design, install, and operate wet area enclosures and resin drip collection systems on pultrusion machines that meet the criteria in paragraphs (b)(1) through (10) of this section.

(1) The enclosure must cover and enclose the open resin bath and the forming area in which reinforcements are pre-wet or wet-out and moving toward the die(s). The surfaces of the enclosure must be closed except for openings to allow material to enter and exit the enclosure.

(2) For open bath pultrusion machines with a radio frequency pre-heat unit, the enclosure must extend from the beginning of the resin bath to within 12.5 inches or less of the entrance of the radio frequency pre-heat unit. If the stock that is within 12.5 inches or less of the entrance to the radio frequency pre-heat unit has any drip, it must be enclosed. The stock exiting the radio frequency pre-heat unit is not required to be in an enclosure if the stock has no drip between the exit of the radio frequency pre-heat unit to within 0.5 inches of the entrance of the die.

(3) For open bath pultrusion machines without a radio frequency pre-heat unit, the enclosure must extend from the beginning of the resin bath to within 0.5 inches or less of the die entrance.

(4) For pultrusion lines with pre-wet area(s) prior to direct die injection, no more than 12.5 inches of open wet stock is permitted between the entrance of the first pre-wet area and the entrance to the die. If the pre-wet stock has any drip, it must be enclosed.

(5) The total open area of the enclosure must not exceed two times the cross sectional area of the puller window(s) and must comply with the requirements in paragraphs (b)(5)(i) through (iii) of this section.

(i) All areas that are open need to be included in the total open area calculation with the exception of access panels, doors, and/or hatches that are part of the enclosure.

(ii) The area that is displaced by entering reinforcement or exiting product is considered open.

(iii) Areas that are covered by brush covers are considered closed.

(6) Open areas for level control devices, monitoring devices, agitation shafts, and fill hoses must have no more than 1.0 inch clearance.

(7) The access panels, doors, and/or hatches that are part of the enclosure must close tightly. Damaged access panels, doors, and/or hatches that do not close tightly must be replaced.

(8) The enclosure may not be removed from the pultrusion line, and access panels, doors, and/or hatches that are part of the enclosure must remain closed whenever resin is in the bath, except for the time period discussed in paragraph (b)(9) of this section.

(9) The maximum length of time the enclosure may be removed from the pultrusion line or the access panels, doors, and/or hatches and may be open, is 30 minutes per 8 hour shift, 45 minutes per 12 hour shift, or 90 minutes per day if the machine is operated for 24 hours in a day. The time restrictions do not apply if the open doors or panels do not cause the limit of two times the puller window area to be exceeded. Facilities may average the times that access panels, doors, and/or hatches are open across all operating lines. In that case the average must not exceed the times shown in this paragraph (b)(9). All lines included in the average must have operated the entire time period being averaged.

(10) No fans, blowers, and/or air lines may be allowed within the enclosure. The enclosure must not be ventilated.

(c) Use direct die injection pultrusion machines with resin drip collection systems that meet all the criteria specified in paragraphs (c)(1) through (3) of this section.

(1) All the resin that is applied to the reinforcement is delivered directly to the die.

(2) No exposed resin is present, except at the face of the die.

(3) Resin drip is captured in a closed system and recycled back to the process.

(d) Use a preform injection system that meets the definition in §63.5935

(e) Use any combination of options in paragraphs (a) through (d) of this section in which different pultrusion lines comply with different options described in paragraphs (a) through (d) of this section, and

(1) Each individual pultrusion machine meets the 60 percent reduction requirement, or

(2) The weighted average reduction based on resin throughput of all machines combined is 60 percent. For purposes of the average percent reduction calculation, wet area enclosures reduce

organic HAP emissions by 60 percent, and direct die injection and preform injection reduce organic HAP emissions by 90 percent.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50127, Aug. 25, 2005]

General Compliance Requirements

§ 63.5835 What are my general requirements for complying with this subpart?

(a) You must be in compliance at all times with the work practice standards in Table 4 to this subpart, as well as the organic HAP emissions limits in Tables 3, or 5, or the organic HAP content limits in Table 7 to this subpart, as applicable, that you are meeting without the use of add-on controls.

(b) You must be in compliance with all organic HAP emissions limits in this subpart that you meet using add-on controls, except during periods of startup, shutdown, and malfunction.

(c) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in §63.6(e)(1)(i).

(d) You must develop a written startup, shutdown, and malfunction plan according to the provisions in §63.6(e)(3) for any organic HAP emissions limits you meet using an add-on control.

[68 FR 19402, Apr. 21, 2003, as amended at 71 FR 20466, Apr. 20, 2006]

Testing and Initial Compliance Requirements

§ 63.5840 By what date must I conduct a performance test or other initial compliance demonstration?

You must conduct performance tests, performance evaluations, design evaluations, capture efficiency testing, and other initial compliance demonstrations by the compliance date specified in Table 2 to this subpart, with three exceptions. Open molding and centrifugal casting operations that elect to meet an organic HAP emissions limit on a 12-month rolling average must initiate collection of the required data on the compliance date, and demonstrate compliance 1 year after the compliance date. New sources that use add-on controls to initially meet compliance must demonstrate compliance within 180 days after their compliance date.

§ 63.5845 When must I conduct subsequent performance tests?

You must conduct a performance test every 5 years following the initial performance test for any standard you meet with an add-on control device.

§ 63.5850 How do I conduct performance tests, performance evaluations, and design evaluations?

(a) If you are using any add-on controls to meet an organic HAP emissions limit in this subpart, you must conduct each performance test, performance evaluation, and design evaluation in 40 CFR part 63, subpart SS, that applies to you. The basic requirements for performance tests, performance evaluations, and design evaluations are presented in Table 6 to this subpart.

(b) Each performance test must be conducted according to the requirements in §63.7(e)(1) and under the specific conditions that 40 CFR part 63, subpart SS, specifies.

(c) Each performance evaluation must be conducted according to the requirements in §63.8(e) as applicable and under the specific conditions that 40 CFR part 63, subpart SS, specifies.

(d) You may not conduct performance tests or performance evaluations during periods of startup, shutdown, or malfunction, as specified in §63.7(e)(1).

(e) You must conduct the control device performance test using the emission measurement methods specified in paragraphs (e)(1) through (5) of this section.

(1) Use either Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select the sampling sites.

(2) Use Method 2, 2A, 2C, 2D, 2F or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.

(3) Use Method 18 of appendix A to 40 CFR part 60 to measure organic HAP emissions or use Method 25A of appendix A to 40 CFR part 60 to measure total gaseous organic emissions as a surrogate for total organic HAP emissions. If you use Method 25A, you must assume that all gaseous organic emissions measured as carbon are organic HAP emissions. If you use Method 18 and the number of organic HAP in the exhaust stream exceeds five, you must take into account the use of multiple chromatographic columns and analytical techniques to get an accurate measure of at least 90 percent of the total organic HAP mass emissions. Do not use Method 18 to measure organic HAP emissions from a combustion device; use instead Method 25A and assume that all gaseous organic mass emissions measured as carbon are organic HAP emissions.

(4) You may use American Society for Testing and Materials (ASTM) D6420–99 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.) in lieu of Method 18 of 40 CFR part 60, appendix A, under the conditions specified in paragraphs (c)(4)(i) through (iii) of this section.

(i) If the target compound(s) is listed in Section 1.1 of ASTM D6420–99 and the target concentration is between 150 parts per billion by volume and 100 parts per million by volume.

(ii) If the target compound(s) is not listed in Section 1.1 of ASTM D6420–99, but is potentially detected by mass spectrometry, an additional system continuing calibration check after each run, as detailed in Section 10.5.3 of ASTM D6420–99, must be followed, met, documented, and submitted with the performance test report even if you do not use a moisture condenser or the compound is not considered soluble.

(iii) If a minimum of one sample/analysis cycle is completed at least every 15 minutes.

(5) Use the procedures in EPA Method 3B of appendix A to 40 CFR part 60 to determine an oxygen correction factor if required by §63.997(e)(2)(iii)(C). You may use American Society of Mechanical Engineers (ASME) PTC 19–10–1981–Part 10 (available for purchase from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, New Jersey, 07007–2900, or online at *www.asme.org/catalog*) as an alternative to EPA Method 3B of appendix A to 40 CFR part 60.

(f) The control device performance test must consist of three runs and each run must last at least 1 hour. The production conditions during the test runs must represent normal production conditions with respect to the types of parts being made and material application methods. The production conditions during the test must also represent maximum potential emissions with respect to the organic HAP content of the materials being applied and the material application rates.

(g) If you are using a concentrator/oxidizer control device, you must test the combined flow upstream of the concentrator, and the combined outlet flow from both the oxidizer and the concentrator to determine the overall control device efficiency. If the outlet flow from the concentrator and oxidizer are exhausted in separate stacks, you must test both stacks simultaneously with the inlet to the concentrator to determine the overall control device efficiency.

(h) During the test, you must also monitor and record separately the amounts of production resin, tooling resin, pigmented gel coat, clear gel coat, and tooling gel coat applied inside the enclosure that is vented to the control device.

§ 63.5855 What are my monitor installation and operation requirements?

You must monitor and operate all add-on control devices according to the procedures in 40 CFR part 63, subpart SS.

§ 63.5860 How do I demonstrate initial compliance with the standards?

(a) You demonstrate initial compliance with each organic HAP emissions standard in paragraphs (a) through (h) of §63.5805 that applies to you by using the procedures shown in Tables 8 and 9 to this subpart.

(b) If using an add-on control device to demonstrate compliance, you must also establish each control device operating limit in 40 CFR part 63, subpart SS, that applies to you.

Emission Factor, Percent Reduction, and Capture Efficiency Calculation Procedures for Continuous Lamination/Casting Operations

§ 63.5865 What data must I generate to demonstrate compliance with the standards for continuous lamination/casting operations?

(a) For continuous lamination/casting affected sources complying with a percent reduction requirement, you must generate the data identified in Tables 10 and 11 to this subpart for each data requirement that applies to your facility.

(b) For continuous lamination/casting affected sources complying with a lbs/ton limit, you must generate the data identified in Tables 11 and 12 to this subpart for each data requirement that applies to your facility.

§ 63.5870 How do I calculate annual uncontrolled and controlled organic HAP emissions from my wet-out area(s) and from my oven(s) for continuous lamination/casting operations?

To calculate your annual uncontrolled and controlled organic HAP emissions from your wet-out areas and from your ovens, you must develop uncontrolled and controlled wet-out area and uncontrolled and controlled oven organic HAP emissions estimation equations or factors to apply to each formula applied on each line, determine how much of each formula for each end product

is applied each year on each line, and assign uncontrolled and controlled wet-out area and uncontrolled and controlled oven organic HAP emissions estimation equations or factors to each formula. You must determine the overall capture efficiency using the procedures in §63.5850 to this subpart.

(a) To develop uncontrolled and controlled organic HAP emissions estimation equations and factors, you must, at a minimum, do the following, as specified in paragraphs (a)(1) through (6) of this section:

(1) Identify each end product and the thickness of each end product produced on the line. Separate end products into the following end product groupings, as applicable: corrosion-resistant gel coated end products, noncorrosion-resistant gel coated end products, corrosion-resistant nongel coated end products, and noncorrosion-resistant nongel coated end products. This step creates end product/thickness combinations.

(2) Identify each formula used on the line to produce each end product/thickness combination. Identify the amount of each such formula applied per year. Rank each formula used to produce each end product/thickness combination according to usage within each end product/thickness combination.

(3) For each end product/thickness combination being produced, select the formula with the highest usage rate for testing.

(4) If not already selected, also select the worst-case formula (likely to be associated with the formula with the highest organic HAP content, type of HAP, application of gel coat, thin product, low line speed, higher resin table temperature) amongst all formulae. (You may use the results of the worst-case formula test for all formulae if desired to limit the amount of testing required.)

(5) For each formula selected for testing, conduct at least one test (consisting of three runs). During the test, track information on organic HAP content and type of HAP, end product thickness, line speed, and resin temperature on the wet-out area table.

(6) Using the test results, develop uncontrolled and controlled organic HAP emissions estimation equations (or factors) or series of equations (or factors) that best fit the results for estimating uncontrolled and controlled organic HAP emissions, taking into account the organic HAP content and type of HAP, end product thickness, line speed, and resin temperature on the wet-out area table.

(b) In lieu of using the method specified in paragraph (a) of this section for developing uncontrolled and controlled organic HAP emissions estimation equations and factors, you may either method specified in paragraphs (b)(1) and (2) of this section, as applicable.

(1) For either uncontrolled or controlled organic HAP emissions estimates, you may use previously established, facility-specific organic HAP emissions equations or factors, provided they allow estimation of both wet-out area and oven organic HAP emissions, where necessary, and have been approved by your permitting authority. If a previously established equation or factor is specific to the wet-out area only, or to the oven only, then you must develop the corresponding uncontrolled or controlled equation or factor for the other organic HAP emissions source.

(2) For uncontrolled (controlled) organic HAP emissions estimates, you may use controlled (uncontrolled) organic HAP emissions estimates and control device destruction efficiency to calculate your uncontrolled (controlled) organic HAP emissions provided the control device destruction efficiency was calculated at the same time you collected the data to develop your facility's controlled (uncontrolled) organic HAP emissions estimation equations and factors.

(c) Assign to each formula an uncontrolled organic HAP emissions estimation equation or factor based on the end product/thickness combination for which that formula is used.

(d)(1) To calculate your annual uncontrolled organic HAP emissions from wet-out areas that do not have any capture and control and from wet-out areas that are captured by an enclosure but are vented to the atmosphere and not to a control device, multiply each formula's annual usage by its appropriate organic HAP emissions estimation equation or factor and sum the individual results.

(2) To calculate your annual uncontrolled organic HAP emissions that escape from the enclosure on the wet-out area, multiply each formula's annual usage by its appropriate uncontrolled organic HAP emissions estimation equation or factor, sum the individual results, and multiply the summation by 1 minus the percent capture (expressed as a fraction).

(3) To calculate your annual uncontrolled oven organic HAP emissions, multiply each formula's annual usage by its appropriate uncontrolled organic HAP emissions estimation equation or factor and sum the individual results.

(4) To calculate your annual controlled organic HAP emissions, multiply each formula's annual usage by its appropriate organic HAP emissions estimation equation or factor and sum the individual results to obtain total annual controlled organic HAP emissions.

(e) Where a facility is calculating both uncontrolled and controlled organic HAP emissions estimation equations and factors, you must test the same formulae. In addition, you must develop both sets of equations and factors from the same tests.

§ 63.5875 How do I determine the capture efficiency of the enclosure on my wet-out area and the capture efficiency of my oven(s) for continuous lamination/casting operations?

(a) The capture efficiency of a wet-out area enclosure is assumed to be 100 percent if it meets the design and operation requirements for a permanent total enclosure (PTE) specified in EPA Method 204 of appendix M to 40 CFR part 51. If a PTE does not exist, then a temporary total enclosure must be constructed and verified using EPA Method 204, and capture efficiency testing must be determined using EPA Methods 204B through E of appendix M to 40 CFR part 51.

(b) The capture efficiency of an oven is to be considered 100 percent, provided the oven is operated under negative pressure.

§ 63.5880 How do I determine how much neat resin plus is applied to the line and how much neat gel coat plus is applied to the line for continuous lamination/casting operations?

Use the following procedures to determine how much neat resin plus and neat gel coat plus is applied to the line each year.

(a) Track formula usage by end product/thickness combinations.

(b) Use in-house records to show usage. This may be either from automated systems or manual records.

(c) Record daily the usage of each formula/end product combination on each line. This is to be recorded at the end of each run (*i.e.,* when a changeover in formula or product is made) and at the end of each shift.

(d) Sum the amounts from the daily records to calculate annual usage of each formula/end product combination by line.

§ 63.5885 How do I calculate percent reduction to demonstrate compliance for continuous lamination/casting operations?

You may calculate percent reduction using any of the methods in paragraphs (a) through (d) of this section.

(a) *Compliant line option.* If all of your wet-out areas have PTE that meet the requirements of EPA Method 204 of appendix M of 40 CFR part 51, and all of your wet-out area organic HAP emissions and oven organic HAP emissions are vented to an add-on control device, use Equation 1 of this section to demonstrate compliance. In all other situations, use Equation 2 of this section to demonstrate compliance.

$$PR = \frac{(\text{Inlet}) - (\text{Outlet})}{(\text{Inlet})} \times 100 \qquad \text{(Eq. 1)}$$

Where:

PR=percent reduction;

Inlet+HAP emissions entering the control device, lbs per year;

Outlet=HAP emissions existing the control device to the atmosphere, lbs per year.

$$PR = \frac{(\text{WAE}_{ci} + O_{ci}) - (\text{WAE}_{co} + O_{co})}{(\text{WAE}_{ci} + \text{WAE}_{u} + \text{O}_{ci} + \text{O}_{u})} \times 100 \qquad \text{(Eq. 2)}$$

Where:

PR=percent reduction;

$WAEi_{ci}$=wet-out area organic HAP emissions, lbs per year, vented to a control device;

$WAEi_{u}$=wet-out area organic HAP emissions, lbs per year, not vented to a control device;

Oj_{u}=oven organic HAP emissions, lbs per year, not vented to a control device;

Oj_{ci}=oven organic HAP emissions, lbs per year, vented to a control device;

$WAEi_{co}$=wet-out area organic HAP emissions, lbs per year, from the control device outlet;

Oj_{co}=oven organic HAP emissions, lbs per year, from the control device outlet.

(b) *Averaging option.* Use Equation 3 of this section to calculate percent reduction.

$$PR = \frac{\left(\sum_{i=1}^{m} \mathrm{WAEi}_{ci} + \sum_{j=1}^{n} Oj_{ci}\right) - \left(\sum_{i=1}^{m} \mathrm{WAEi}_{co} + \sum_{j=1}^{n} Oj_{co}\right)}{\left(\sum_{i=1}^{m} \mathrm{WAEi}_{ci} + \sum_{j=1}^{n} Oj_{ci} + \sum_{i=1}^{m} \mathrm{WAEi}_{u} + \sum_{j=1}^{n} Oj_{u}\right)} \times 100 \qquad \text{(Eq. 3)}$$

Where:

PR=percent reduction;

$WAEi_{ci}$=wet-out area organic HAP emissions from wet-out area i, lbs per year, sent to a control device;

$WAEi_{u}$=wet-out area organic HAP emissions from wet-out area i, lbs per year, not sent to a control device;

$WAEi_{co}$=wet-out area organic HAP emissions from wet-out area i, lbs per year, at the outlet of a control device;

Oj_{u}=organic HAP emissions from oven j, lbs per year, not sent to a control device;

Oj_{ci}=organic HAP emissions from oven j, lbs per year, sent to a control device;

Oj_{co}=organic HAP emissions from oven j, lbs per year, at the outlet of the control device;

m=number of wet-out areas;

n=number of ovens.

(c) *Add-on control device option.* Use Equation 1 of this section to calculate percent reduction.

(d) *Combination option.* Use Equations 1 through 3 of this section, as applicable, to calculate percent reduction.

[70 FR 50127, Aug. 25, 2005]

§ 63.5890 How do I calculate an organic HAP emissions factor to demonstrate compliance for continuous lamination/casting operations?

(a) *Compliant line option.* Use Equation 1 of this section to calculate an organic HAP emissions factor in lbs/ton.

$$E = \frac{WAE_u + WAE_c + O_u + O_c}{(R + G)} \qquad (Eq.\ 1)$$

Where:

E=HAP emissions factor in lbs/ton of resin and gel coat

WAE_u=uncontrolled wet-out area organic HAP emissions, lbs per year

WAE_c=controlled wet-out area organic HAP emissions, lbs per year

O_u=uncontrolled oven organic HAP emissions, lbs per year

O_c=controlled oven organic HAP emissions, lbs per year

R=total usage of neat resin plus, tpy

G=total usage of neat gel coat plus, tpy

(b) *Averaging option.* Use Equation 2 of this section to demonstrate compliance.

$$E = \frac{\sum_{i=1}^{m} WAE_{ui} + \sum_{i=1}^{o} WAE_{ci} + \sum_{j=1}^{n} O_{uj} + \sum_{j=1}^{p} O_{cj}}{(R+G)} \qquad (Eq.\ 2)$$

Where:

E=HAP emissions factor in lbs/ton of resin and gel coat

WAE_{ui}=uncontrolled organic HAP emissions from wet-out area i, lbs per year

WAE_{ci}=controlled organic HAP emissions from wet-out area i, lbs per year

O_{uj}=uncontrolled organic HAP emissions from oven j, lbs per year

O_{cj}=controlled organic HAP emissions from oven j, lbs per year

i=number of wet-out areas

j=number of ovens

m=number of wet-out areas uncontrolled

n=number of ovens uncontrolled

o=number of wet-out areas controlled

p=number of ovens controlled

R=total usage of neat resin plus, tpy

G=total usage of neat gel coat plus, tpy

(c) *Combination option.* Use Equations 1 and 2 of this section, as applicable, to demonstrate compliance.

Continuous Compliance Requirements

§ 63.5895 How do I monitor and collect data to demonstrate continuous compliance?

(a) During production, you must collect and keep a record of data as indicated in 40 CFR part 63, subpart SS, if you are using an add-on control device.

(b) You must monitor and collect data as specified in paragraphs (b)(1) through (4) of this section.

(1) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must conduct all monitoring in continuous operation (or collect data at all required intervals) at all times that the affected source is operating.

(2) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities for purposes to this subpart, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(3) At all times, you must maintain necessary parts for routine repairs of the monitoring equipment.

(4) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring equipment to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You must collect and keep records of resin and gel coat use, organic HAP content, and operation where the resin is used if you are meeting any organic HAP emissions limits based on an organic HAP emissions limit in Tables 3 or 5 to this subpart. You must collect and keep records of resin and gel coat use, organic HAP content, and operation where the resin is used if you are meeting any organic HAP content limits in Table 7 to this subpart if you are averaging organic HAP contents. Resin use records may be based on purchase records if you can reasonably estimate how the resin is applied. The organic HAP content records may be based on MSDS or on resin specifications supplied by the resin supplier.

(d) Resin and gel coat use records are not required for the individual resins and gel coats that are demonstrated, as applied, to meet their applicable emission as defined in §63.5810(a). However, you must retain the records of resin and gel coat organic HAP content, and you must include the list of these resins and gel coats and identify their application methods in your semiannual compliance reports. If after you have initially demonstrated that a specific combination of an individual resin or gel coat, application method, and controls meets its applicable emission limit, and the resin or gel coat changes or the organic HAP content increases, or you change the application method or controls, then you again must demonstrate that the individual resin or gel coat meets its emission limit as specified in paragraph (a) of §63.5810. If any of the previously mentioned changes results in a situation where an individual resin or gel coat now exceeds its applicable emission limit in Table 3 or 5 of this subpart, you must begin collecting resin and gel coat use records and calculate compliance using one of the averaging options on a 12-month rolling average.

(e) For each of your pultrusion machines, you must record all times that wet area enclosures doors or covers are open and there is resin present in the resin bath.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50128, Aug. 25, 2005]

§ 63.5900 How do I demonstrate continuous compliance with the standards?

(a) You must demonstrate continuous compliance with each standard in §63.5805 that applies to you according to the methods specified in paragraphs (a)(1) through (3) of this section.

(1) Compliance with organic HAP emissions limits for sources using add-on control devices is demonstrated following the procedures in 40 CFR part 63, subpart SS. Sources using add-on controls may also use continuous emissions monitors to demonstrate continuous compliance as an alternative to control parameter monitoring.

(2) Compliance with organic HAP emissions limits is demonstrated by maintaining an organic HAP emissions factor value less than or equal to the appropriate organic HAP emissions limit listed in Table 3 or 5 to this subpart, on a 12-month rolling average, and/or by including in each compliance report a statement that individual resins and gel coats, as applied, meet the appropriate organic HAP emissions limits, as discussed in §63.5895(d).

(3) Compliance with organic HAP content limits in Table 7 to this subpart is demonstrated by maintaining an average organic HAP content value less than or equal to the appropriate organic HAP contents listed in Table 7 to this subpart, on a 12-month rolling average, and/or by including in each compliance report a statement that resins and gel coats individually meet the appropriate organic HAP content limits in Table 7 to this subpart, as discussed in §63.5895(d).

(4) Compliance with the work practice standards in Table 4 to this subpart is demonstrated by performing the work practice required for your operation.

(b) You must report each deviation from each standard in §63.5805 that applies to you. The deviations must be reported according to the requirements in §63.5910.

(c) Except as provided in paragraph (d) of this section, during periods of startup, shutdown or malfunction, you must meet the organic HAP emissions limits and work practice standards that apply to you.

(d) When you use an add-on control device to meet standards in §63.5805, you are not required to meet those standards during periods of startup, shutdown, or malfunction, but you must operate your affected source to minimize emissions in accordance with §63.6(e)(1).

(e) Consistent with §§63.6(e) and 63.7(e)(1), deviations that occur during a period of malfunction for those affected sources and standards specified in paragraph (d) of this section are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with §63.6(e)(1). The Administrator will determine whether deviations that occur during a period of startup, shutdown, and malfunction are violations, according to the provisions in §63.6(e).

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50128, Aug. 25, 2005; 71 FR 20466, Apr. 20, 2006]

Notifications, Reports, and Records

§ 63.5905 What notifications must I submit and when?

(a) You must submit all of the notifications in Table 13 to this subpart that apply to you by the dates specified in Table 13 to this subpart. The notifications are described more fully in 40 CFR part 63, subpart A, referenced in Table 13 to this subpart.

(b) If you change any information submitted in any notification, you must submit the changes in writing to the Administrator within 15 calendar days after the change.

§ 63.5910 What reports must I submit and when?

(a) You must submit each report in Table 14 to 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 specified in Table 14 to this subpart and according to paragraphs (b)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.5800 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 §63.5800.

(2) 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 §63.5800.

(3) 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) 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 affected source that is subject to permitting requirements pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to §70.6 (a)(3)(iii)(A) or §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 (4) of this section.

(c) The compliance report must contain the information in paragraphs (c)(1) through (6) of this section:

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of the report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took actions consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in §63.10(d)(5)(i).

(5) If there are no deviations from any organic HAP emissions limitations (emissions limit and operating limit) that apply to you, and there are no deviations from the requirements for work

practice standards in Table 4 to this subpart, a statement that there were no deviations from the organic HAP emissions limitations or work practice standards during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including a continuous emissions monitoring system (CEMS) and an operating parameter monitoring system were 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.

(d) For each deviation from an organic HAP emissions limitation (*i.e.,* emissions limit and operating limit) and for each deviation from the requirements for work practice standards that occurs at an affected source where you are not using a CMS to comply with the organic HAP emissions limitations or work practice standards in this subpart, the compliance report must contain the information in paragraphs (c)(1) through (4) of this section and in paragraphs (d)(1) and (2) of this section. This includes periods of startup, shutdown, and malfunction.

(1) The total operating time of each affected source during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an organic HAP emissions limitation (*i.e.,* emissions limit and operating limit) occurring at an affected source where you are using a CMS to comply with the organic HAP emissions limitation in this subpart, you must include the information in paragraphs (c)(1) through (4) of this section and in paragraphs (e)(1) through (12) of this section. This includes periods of startup, shutdown, and malfunction.

(1) The date and time that each malfunction started and stopped.

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration 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 startup, shutdown, or malfunction, or during another period.

(5) A summary of the total duration 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 of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.

(8) An identification of each organic HAP that was monitored at the affected source.

(9) A brief description of the process units.

(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.

(f) You must report if you have exceeded the 100 tpy organic HAP emissions threshold if that exceedance would make your facility subject to §63.5805(a)(1) or (d). Include with this report any request for an exemption under §63.5805(e). If you receive an exemption under §63.5805(e) and subsequently exceed the 100 tpy organic HAP emissions threshold, you must report this exceedance as required in §63.5805(f).

(g) 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 §70.6(a)(3)(iii)(A) or §71.6(a)(3)(iii)(A). If an affected source submits a compliance report pursuant to Table 14 to this subpart along with, or as part of, the semiannual monitoring report required by §70.6(a)(3)(iii)(A) or §71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any organic HAP emissions limitation (including any operating limit) or work practice requirement 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 permitting authority.

(h) Submit compliance reports and startup, shutdown, and malfunction reports based on the requirements in Table 14 to this subpart, and not based on the requirements in §63.999.

(i) Where multiple compliance options are available, you must state in your next compliance report if you have changed compliance options since your last compliance report.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50128, Aug. 25, 2005]

§ 63.5915 What records must I keep?

(a) You must keep the records listed in paragraphs (a)(1) through (3) 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 requirements in §63.10(b)(2)(xiv).

(2) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests, design, and performance evaluations as required in §63.10(b)(2).

(b) If you use an add-on control device, you must keep all records required in 40 CFR part 63, subpart SS, to show continuous compliance with this subpart.

(c) You must keep all data, assumptions, and calculations used to determine organic HAP emissions factors or average organic HAP contents for operations listed in Tables 3, 5, and 7 to this subpart.

(d) You must keep a certified statement that you are in compliance with the work practice requirements in Table 4 to this subpart, as applicable.

(e) For a new or existing continuous lamination/ casting operation, you must keep the records listed in paragraphs (e)(1) through (4) of this section, when complying with the percent reduction and/or lbs/ton requirements specified in paragraphs (a) and (c) through (d) of §63.5805.

(1) You must keep all data, assumptions, and calculations used to determine percent reduction and/or lbs/ton as applicable;

(2) You must keep a brief description of the rationale for the assignment of an equation or factor to each formula;

(3) When using facility-specific organic HAP emissions estimation equations or factors, you must keep all data, assumptions, and calculations used to derive the organic HAP emissions estimation equations and factors and identification and rationale for the worst-case formula; and

(4) For all organic HAP emissions estimation equations and organic HAP emissions factors, you must keep documentation that the appropriate permitting authority has approved them.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50129, Aug. 25, 2005]

§ 63.5920 In what form and how long must I keep my records?

(a) You must maintain all applicable records in such a manner that they can be readily accessed and are suitable for inspection 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 onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records offsite for the remaining 3 years.

(d) You may keep records in hard copy or computer readable form including, but not limited to, paper, microfilm, computer floppy disk, magnetic tape, or microfiche.

Other Requirements and Information

§ 63.5925 What parts of the General Provisions apply to me?

Table 15 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

§ 63.5930 Who implements and enforces this subpart?

(a) This subpart can be administered by us, the EPA, or a delegated authority such as your State, local, or tribal agency. If the EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency has the authority to administer and enforce this subpart. You should contact your EPA Regional Office to find out if 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 not delegated.

(c) The authorities that will not be delegated to State, local, or tribal agencies are listed in paragraphs (c)(1) through (4) of this section:

(1) Approval of alternatives to the organic HAP emissions standards in §63.5805 under §63.6(g).

(2) Approval of major changes to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major changes to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major changes to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

§ 63.5935 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in 40 CFR 63.2, and in this section as follows:

Atomized mechanical application means application of resin or gel coat with spray equipment that separates the liquid into a fine mist. This fine mist may be created by forcing the liquid under high pressure through an elliptical orifice, bombarding a liquid stream with directed air jets, or a combination of these techniques.

Bulk molding compound (BMC) means a putty-like molding compound containing resin(s) in a form that is ready to mold. In addition to resins, BMC may contain catalysts, fillers, and reinforcements. Bulk molding compound can be used in compression molding and injection molding operations to manufacture reinforced plastic composites products.

BMC manufacturing means a process that involves the preparation of BMC.

Centrifugal casting means a process for fabricating cylindrical composites, such as pipes, in which composite materials are positioned inside a rotating hollow mandrel and held in place by centrifugal forces until the part is sufficiently cured to maintain its physical shape.

Charge means the amount of SMC or BMC that is placed into a compression or injection mold necessary to complete one mold cycle.

Cleaning means removal of composite materials, such as cured and uncured resin from equipment, finished surfaces, floors, hands of employees, or any other surfaces.

Clear production gel coat means an unpigmented, quick-setting resin used to improve the surface appearance and/or performance of composites. It can be used to form the surface layer of any composites other than those used for molds in tooling operations.

Closed molding means a grouping of processes for fabricating composites in a way that HAP-containing materials are not exposed to the atmosphere except during the material loading stage (*e.g.,* compression molding, injection molding, and resin transfer molding). Processes where the mold is covered with plastic (or equivalent material) prior to resin application, and the resin is injected into the covered mold are also considered closed molding.

Composite means a shaped and cured part produced by using composite materials.

Composite materials means the raw materials used to make composites. The raw materials include styrene containing resins. They may also include gel coat, monomer, catalyst, pigment, filler, and reinforcement.

Compression molding means a closed molding process for fabricating composites in which composite materials are placed inside matched dies that are used to cure the materials under heat and pressure without exposure to the atmosphere. The addition of mold paste or in-mold coating is considered part of the closed molding process. The composite materials used in this process are generally SMC or BMC.

Compression/injection molding means a grouping of processes that involves the use of compression molding and/or injection molding.

Continuous casting means a continuous process for fabricating composites in which composite materials are placed on an in-line conveyor belt to produce cast sheets that are cured in an oven.

Continuous lamination means a continuous process for fabricating composites in which composite materials are typically sandwiched between plastic films, pulled through compaction rollers, and cured in an oven. This process is generally used to produce flat or corrugated products on an in-line conveyor.

Continuous lamination/casting means a grouping of processes that involves the use of continuous lamination and/or continuous casting.

Controlled emissions means those organic HAP emissions that are vented from a control device to the atmosphere.

Corrosion-resistant gel coat means a gel coat used on a product made with a corrosion-resistant resin that has a corrosion-resistant end-use application.

Corrosion-resistant end-use applications means applications where the product is manufactured specifically for an application that requires a level of chemical inertness or resistance to chemical attack above that required for typical reinforced plastic composites products. These applications include, but are not limited to, chemical processing and storage; pulp and paper production; sewer and wastewater treatment; power generation; potable water transfer and storage; food and drug processing; pollution or odor control; metals production and plating; semiconductor manufacturing; petroleum production, refining, and storage; mining; textile production; nuclear materials storage; swimming pools; and cosmetic production, as well as end-use applications that require high strength resins.

Corrosion-resistant industry standard includes the following standards: ASME RTP–1 or Sect. X; ASTM D5364, D3299, D4097, D2996, D2997, D3262, D3517, D3754, D3840, D4024, D4160, D4161, D4162, D4184, D3982, or D3839; ANSI/AWWA C950; UL 215, 1316 or 1746, IAPMO PS–199, or written customer requirements for resistance to specified chemical environments.

Corrosion-resistant product means a product made with a corrosion-resistant resin and is manufactured to a corrosion-resistant industry standard, or a food contact industry standard, or is manufactured for corrosion-resistant end-use applications involving continuous or temporary chemical exposures.

Corrosion-resistant resin means a resin that either:

(1) Displays substantial retention of mechanical properties when undergoing ASTM C–581 coupon testing, where the resin is exposed for 6 months or more to one of the following materials: Material with a pH ≥ 12.0 or ≤ 3.0, oxidizing or reducing agents, organic solvents, or fuels or additives as defined in 40 CFR 79.2. In the coupon testing, the exposed resin needs to demonstrate a minimum of 50 percent retention of the relevant mechanical property compared to the same resin in unexposed condition. In addition, the exposed resin needs to demonstrate an increased retention of the relevant mechanical property of at least 20 percentage points when compared to a similarly exposed general-purpose resin. For example, if the general-purpose resin retains 45 percent of the relevant property when tested as specified above, then a corrosion-resistant resin needs to retain at least 65 percent (45 percent plus 20 percent) of its property. The general-purpose resin used in the test needs to have an average molecular weight of greater than 1,000, be formulated with a 1:2 ratio of maleic anhydride to phthalic anhydride and 100 percent diethylene glycol, and a styrene content between 43 to 48 percent; or

(2) Complies with industry standards that require specific exposure testing to corrosive media, such as UL 1316, UL 1746, or ASTM F–1216.

Doctor box means the box or trough on an SMC machine into which the liquid resin paste is delivered before it is metered onto the carrier film.

Filament application means an open molding process for fabricating composites in which reinforcements are fed through a resin bath and wound onto a rotating mandrel. The materials on the mandrel may be rolled out or worked by using nonmechanical tools prior to curing. Resin application to the reinforcement on the mandrel by means other than the resin bath, such as spray guns, pressure-fed rollers, flow coaters, or brushes is not considered filament application.

Filled Resin means that fillers have been added to a resin such that the amount of inert substances is at least 10 percent by weight of the total resin plus filler mixture. Filler putty made from a resin is considered a filled resin.

Fillers means inert substances dispersed throughout a resin, such as calcium carbonate, alumina trihydrate, hydrous aluminum silicate, mica, feldspar, wollastonite, silica, and talc. Materials that are not considered to be fillers are glass fibers or any type of reinforcement and microspheres.

Fire retardant gel coat means a gel coat used for products for which low-flame spread/low-smoke resin is used.

Fluid impingement technology means a spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid streams.

Food contact industry standard means a standard related to food contact application contained in Food and Drug Administration's regulations at 21 CFR 177.2420.

Gel Coat means a quick-setting resin used to improve surface appearance and/or performance of composites. It can be used to form the surface layer of any composites other than those used for molds in tooling operations.

Gel coat application means a process where either clear production, pigmented production, white/off-white or tooling gel coat is applied.

HAP-containing materials storage means an ancillary process which involves keeping HAP-containing materials, such as resins, gel coats, catalysts, monomers, and cleaners, in containers

or bulk storage tanks for any length of time. Containers may include small tanks, totes, vessels, and buckets.

High Performance gel coat means a gel coat used on products for which National Sanitation Foundation, United States Department of Agriculture, ASTM, durability, or other property testing is required.

High strength gel coat means a gel coat applied to a product that requires high strength resin.

High strength resins means polyester resins which have a casting tensile strength of 10,000 pounds per square inch or more and which are used for manufacturing products that have high strength requirements such as structural members and utility poles.

Injection molding means a closed molding process for fabricating composites in which composite materials are injected under pressure into a heated mold cavity that represents the exact shape of the product. The composite materials are cured in the heated mold cavity.

Low Flame Spread/Low Smoke Products means products that meet the following requirements. The products must meet both the applicable flame spread requirements and the applicable smoke requirements. Interior or exterior building application products must meet an ASTM E–84 Flame Spread Index of less than or equal to 25, and Smoke Developed Index of less than or equal to 450, or pass National Fire Protection Association 286 Room Corner Burn Test with no flash over and total smoke released not exceeding 1000 meters square. Mass transit application products must meet an ASTM E–162 Flame Spread Index of less than or equal to 35 and ASTM E662 Smoke Density Ds @ 1.5 minutes less than or equal to 100 and Ds @ 4 minutes less than to equal to 200. Duct application products must meet ASTM E084 Flame Spread Index less than or equal to 25 and Smoke Developed Index less than or equal to 50 on the interior and/or exterior of the duct.

Manual resin application means an open molding process for fabricating composites in which composite materials are applied to the mold by pouring or by using hands and nonmechanical tools, such as brushes and rollers. Materials are rolled out or worked by using nonmechanical tools prior to curing. The use of pressure-fed rollers and flow coaters to apply resin is not considered manual resin application.

Mechanical resin application means an open molding process for fabricating composites in which composite materials (except gel coat) are applied to the mold by using mechanical tools such as spray guns, pressure-fed rollers, and flow coaters. Materials are rolled out or worked by using nonmechanical tools prior to curing.

Mixing means the blending or agitation of any HAP-containing materials in vessels that are 5.00 gallons (18.9 liters) or larger, and includes the mixing of putties or polyputties. Mixing may involve the blending of resin, gel coat, filler, reinforcement, pigments, catalysts, monomers, and any other additives.

Mold means a cavity or matrix into or onto which the composite materials are placed and from which the product takes its form.

Neat gel coat means the resin as purchased for the supplier, but not including any inert fillers.

Neat gel coat plus means neat gel coat plus any organic HAP-containing materials that are added to the gel coat by the supplier or the facility, excluding catalysts and promoters. Neat gel coat plus

does include any additions of styrene or methyl methacrylate monomer in any form, including in catalysts and promoters.

Neat resin means the resin as purchased from the supplier, but not including any inert fillers.

Neat resin plus means neat resin plus any organic HAP-containing materials that are added to the resin by the supplier or the facility. Neat resin plus does not include any added filler, reinforcements, catalysts, or promoters. Neat resin plus does include any additions of styrene or methyl methacrylate monomer in any form, including in catalysts and promoters.

Nonatomized mechanical application means the use of application tools other than brushes to apply resin and gel coat where the application tool has documentation provided by its manufacturer or user that this design of the application tool has been organic HAP emissions tested, and the test results showed that use of this application tool results in organic HAP emissions that are no greater than the organic HAP emissions predicted by the applicable nonatomized application equation(s) in Table 1 to this subpart. In addition, the device must be operated according to the manufacturer's directions, including instructions to prevent the operation of the device at excessive spray pressures. Examples of nonatomized application include flow coaters, pressure fed rollers, and fluid impingement spray guns.

Noncorrosion-resistant resin means any resin other than a corrosion-resistant resin or a tooling resin.

Noncorrosion-resistant product means any product other than a corrosion-resistant product or a mold.

Non-routine manufacture means that you manufacture parts to replace worn or damaged parts of a reinforced plastic composites product, or a product containing reinforced plastic composite parts, that was originally manufactured in another facility. For a part to qualify as non-routine manufacture, it must be used for repair or replacement, and the manufacturing schedule must be based on the current or anticipated repair needs of the reinforced plastic composites product, or a product containing reinforced plastic composite parts.

Operation means a specific process typically found at a reinforced plastic composites facility. Examples of operations are noncorrosion-resistant manual resin application, corrosion-resistant mechanical resin application, pigmented gel coat application, mixing and HAP-containing materials storage.

Operation group means a grouping of individual operations based primarily on mold type. Examples are open molding, closed molding, and centrifugal casting.

Open molding means a process for fabricating composites in a way that HAP-containing materials are exposed to the atmosphere. Open molding includes processes such as manual resin application, mechanical resin application, filament application, and gel coat application. Open molding also includes application of resins and gel coats to parts that have been removed from the open mold.

Pigmented gel coat means a gel coat that has a color, but does not contain 10 percent of more titanium dioxide by weight. It can be used to form the surface layer of any composites other than those used for molds in tooling operations.

Polymer casting means a process for fabricating composites in which composite materials are ejected from a casting machine or poured into an open, partially open, or closed mold and cured.

After the composite materials are poured into the mold, they are not rolled out or worked while the mold is open, except for smoothing the material and/or vibrating the mold to remove bubbles. The composite materials may or may not include reinforcements. Products produced by the polymer casting process include cultured marble products and polymer concrete.

Preform Injection means a form of pultrusion where liquid resin is injected to saturate reinforcements in an enclosed system containing one or more chambers with openings only large enough to admit reinforcements. Resin, which drips out of the chamber(s) during the process, is collected in closed piping or covered troughs and then into a covered reservoir for recycle. Resin storage vessels, reservoirs, transfer systems, and collection systems are covered or shielded from the ambient air. Preform injection differs from direct die injection in that the injection chambers are not directly attached to the die.

Prepreg materials means reinforcing fabric received precoated with resin which is usually cured through the addition of heat.

Pultrusion means a continuous process for manufacturing composites that have a uniform cross-sectional shape. The process consists of pulling a fiber-reinforcing material through a resin impregnation chamber or bath and through a shaping die, where the resin is subsequently cured. There are several types of pultrusion equipment, such as open bath, resin injection, and direct die injection equipment.

Repair means application of resin or gel coat to a part to correct a defect, where the resin or gel coat application occurs after the part has gone through all the steps of its typical production process, or the application occurs outside the normal production area. For purposes of this subpart, rerouting a part back through the normal production line, or part of the normal production line, is not considered repair.

Resin transfer molding means a process for manufacturing composites whereby catalyzed resin is transferred or injected into a closed mold in which fiberglass reinforcement has been placed.

Sheet molding compound (SMC) means a ready-to-mold putty-like molding compound that contains resin(s) processed into sheet form. The molding compound is sandwiched between a top and a bottom film. In addition to resin(s), it may also contain catalysts, fillers, chemical thickeners, mold release agents, reinforcements, and other ingredients. Sheet molding compound can be used in compression molding to manufacture reinforced plastic composites products.

Shrinkage controlled resin means a resin that when promoted, catalyzed, and filled according to the resin manufacturer's recommendations demonstrates less than 0.3 percent linear shrinkage when tested according to ASTM D2566.

SMC manufacturing means a process which involves the preparation of SMC.

Tooling gel coat means a gel coat that is used to form the surface layer of molds. Tooling gel coats generally have high heat distortion temperatures, low shrinkage, high barcol hardness, and high dimensional stability.

Tooling resin means a resin that is used to produce molds. Tooling resins generally have high heat distortion temperatures, low shrinkage, high barcol hardness, and high dimensional stability.

Uncontrolled oven organic HAP emissions means those organic HAP emissions emitted from the oven through closed vent systems to the atmosphere and not to a control device. These organic HAP emissions do not include organic HAP emissions that may escape into the workplace

through the opening of panels or doors on the ovens or other similar fugitive organic HAP emissions in the workplace.

Uncontrolled wet-out area organic HAP emissions means any or all of the following: Organic HAP emissions from wet-out areas that do not have any capture and control, organic HAP emissions that escape from wet-out area enclosures, and organic HAP emissions from wet-out areas that are captured by an enclosure but are vented to the atmosphere and not to an add-on control device.

Unfilled means that there has been no addition of fillers to a resin or that less than 10 percent of fillers by weight of the total resin plus filler mixture has been added.

Vapor suppressant means an additive, typically a wax, that migrates to the surface of the resin during curing and forms a barrier to seal in the styrene and reduce styrene emissions.

Vapor-suppressed resin means a resin containing a vapor suppressant added for the purpose of reducing styrene emissions during curing.

White and off-white gel coat means a gel coat that contains 10 percent of more titanium dioxide by weight.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50129, Aug. 25, 2005]

Table 1 to Subpart WWWW of Part 63—Equations To Calculate Organic HAP Emissions Factors for Specific Open Molding and Centrifugal Casting Process Streams

Table 1 to Subpart WWWW of Part 63--Equations to Calculate Organic HAP Emissions Factors for Specific Open Molding and Centrifugal Casting Process Streams[1]

As specified in §63.5810, use the equations in the following table to calculate organic HAP emissions factors for specific open molding and centrifugal casting process streams:

If your operation type is a new or existing...	And you use...	With...	Use this organic HAP Emissions Factor (EF) Equation for materials with less than 33 percent organic HAP (19 percent organic HAP for nonatomized gel coat)[2,3,4]...	Use this organic HAP emissions Factor (EF) Equation for materials with 33 percent or more organic HAP (19 percent for nonatomized gel coat)[2,3,4]...
1. open molding operation	a. manual resin application	i. nonvapor-suppressed resin	EF = 0.126 x %HAP x 2000	EF = ((0.286 x %HAP)-0.0529) x 2000
		ii. vapor-suppressed resin	EF = 0.126 x %HAP x 2000 x (1-(0.5 x VSE factor))	EF = ((0.286 x %HAP)-0.0529) x 2000 x (1-(0.5 x VSE factor))
		iii. vacuum bagging/closed-mold curing with roll out	EF = 0.126 x %HAP x 2000 x 0.8	EF = ((0.286 x %HAP)-0.0529) x 2000 x 0.8
		iv. vacuum bagging/closed-mold curing without roll-out	EF = (0.126 x %HAP x 2000 x 0.5	EF = ((0.286 x %HAP)-0.0529) x 2000 x 0.5
	b. atomized mechanical resin application	i. nonvapor-suppressed resin	EF = 0.169 x %HAP x 2000	EF = ((0.714 x %HAP)-0.18) x 2000
		ii. vapor-suppressed resin	EF = 0.169 x %HAP x 2000 x (1-(0.45 x VSE factor))	EF = ((0.714 x %HAP)-0.18) x 2000 x (1-(0.45 x VSE factor))
		iii. vacuum bagging/closed-mold curing with roll-out	EF = 0.169 x %HAP x 2000 x 0.85	EF = ((0.714 x %HAP)-0.18) x 2000 x 0.85
		iv. vacuum bagging/closed-mold curing without roll-out	EF = 0.169 x %HAP x 2000 x 0.55	EF = ((0.714 x %HAP)-0.18) x 2000 x 0.55
	c. nonatomized mechanical resin application	i. nonvapor-suppressed resin	EF = 0.107 x %HAP x 2000	EF = ((0.157 x %HAP)-0.0165) x 2000
		ii. vapor-suppressed resin	EF = 0.107 x %HAP x 2000 x (1-(0.45 x VSE factor))	EF = ((0.157 x %HAP)-0.0165) x 2000 x (1-(0.45 x VSE factor))
		iii. closed-mold curing with roll-out	EF = 0.107 x %HAP x 2000 x 0.85	EF = ((0.157 x %HAP)-0.0165) x 2000 x 0.85
		iv. vacuum bagging/closed-mold curing without roll-out	EF = 0.107 x %HAP x 2000 x 0.55	EF = ((0.157 x %HAP)-0.0165) x 2000 x 0.55
	d. atomized mechanical resin application with robotic or automated spray control[5]	nonvapor-suppressed resin	EF = 0.169 x %HAP x 2000 x 0.77	EF = 0.77 x ((0.714 x %HAP)-0.18) x 2000
	e. filament application[6]	i. nonvapor-suppressed resin	EF = 0.184 x %HAP x 2000	EF = ((0.2746 x %HAP)-0.0298) x 2000
		ii. vapor-suppressed resin	EF = 0.12 x %HAP x 2000	EF = ((0.2746 x %HAP)-0.0298) x 2000 x 0.65
	f. atomized spray gel coat application	nonvapor-suppressed gel coat	EF = 0.445 x %HAP x 2000	EF = ((1.03646 x %HAP)-0.195) x 2000

	g. nonatomized spray gel coat application	nonvapor-suppressed gel coat	EF = 0.185 x %HAP x 2000	EF = ((0.4506 x %HAP)-0.0505) x 2000
	h. atomized spray gel coat application using robotic or automated spray	nonvapor-suppressed gel coat	EF = 0.445 x %HAP x 2000 x 0.73	EF = ((1.03646 x %HAP)-0.195) x 2000 x 0.73
2. centrifugal casting operations [7,8]	a. heated air blown through molds	nonvapor-suppressed resin	EF = 0.558 x (%HAP) x 2000	EF = 0.558 x (%HAP) x 2000
	b. vented molds, but air vented through the molds is not heated	nonvapor-suppressed resin	EF = 0.026 x (%HAP) x 2000	EF = 0.026 x (%HAP) x 2000

Footnotes to Table 1

[1] The equations in this table are intended for use in calculating emission factors to demonstrate compliance with the emission limits in subpart WWWW. These equations may not be the most appropriate method to calculate emission estimates for other purposes. However, this does not preclude a facilit from using the equations in this table to calculate emission factors for purposes other then rule compliance if these equations are the most accurate available.

[2] To obtain the organic HAP emissions factor value for an operation with an add-on control device multiply the EF above by the add-on control factor calculated using Equation 1 of §63.5810. The organic HAP emissions factors have units of lbs of organic HAP per ton of resin or gel coat applied.

[3] Percent HAP means total weight percent of organic HAP (styrene, methyl methacrylate, and any other organic HAP) in the resin or gel coat prior to the addition of fillers, catalyst, and promoters. Input the percent HAP as a decimal, i.e., 33 percent HAP should be input as 0.33, not 33.

[4] The VSE factor means the percent reduction in organic HAP emissions expressed as a decimal measured by the VSE test method of appendix A to this subpart.

[5] This equation is based on a organic HAP emissions factor equation developed for mechanical atomized controlled spray. It may only be used for automated or robotic spray systems with atomized spray. All spray operations using hand held spray guns must use the appropriate mechanical atomized or mechanical nonatomized organic HAP emissions factor equation. Automated or robotic spray systems using nonatomized spray should use the appropriate nonatomized mechanical resin application equation.

[6] Applies only to filament application using an open resin bath. If resin is applied manually or with a spray gun, use the appropriate manual or mechanical application organic HAP emissions factor equation.

[7] These equations are for centrifugal casting operations where the mold is vented during spinning. Centrifugal casting operations where the mold is completely sealed after resin injection are considered to be closed molding operations.

[8] If a centrifugal casting operation uses mechanical or manual resin application techniques to apply resin to an open centrifugal casting mold, use the appropriate open molding equation with covered cure and no rollout to determine an emission factor for operations prior to the closing of the centrifugal casting mold. If the closed centrifugal casting mold is vented during spinning, use the appropriate centrifugal casting equation to calculate an emission factor for the portion of the process where spinning and cure occur. If a centrifugal casting operation uses mechanical or manual resin application techniques to apply resin to an open centrifugal casting mold, and the mold is then closed and is not vented, treat the entire operation as open molding with covered cure and no rollout to determine emission factors.

[70 FR 50129, Aug. 26, 2005]

Table 2 to Subpart WWWW of Part 63—Compliance Dates for New and Existing Reinforced Plastic Composites Facilities

As required in §§63.5800 and 63.5840 you must demonstrate compliance with the standards by the dates in the following table:

If your facility is . . .	And . . .	Then you must comply by this date . . .
1. An existing source	a. Is a major source on or before the publication date of this subpart	i. April 21, 2006, or ii. You must accept and meet an enforceable HAP emissions limit below the major source threshold prior to April 21, 2006.
2. An existing source that is an area source	Becomes a major source after the publication date of this subpart	3 years after becoming a major source or April 21, 2006, whichever is later.
3. An existing source, and emits less than 100 tpy of organic HAP from the combination of all centrifugal casting and continuous lamination/casting operations at the time of initial compliance with this subpart	Subsequently increases its actual organic HAP emissions to 100 tpy or more from these operations, which requires that the facility must now comply with the standards in §63.5805(b)	3 years of the date your semi-annual compliance report indicates your facility meets or exceeds the 100 tpy threshold.
4. A new source	Is a major source at startup	Upon startup or April 21, 2003, whichever is later.
5. A new source	Is an area source at startup and becomes a major source	Immediately upon becoming a major source.
6. A new source, and emits less than 100 tpy of organic HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC and BMC manufacturing, and mixing operations at the time of initial compliance with this subpart	Subsequently increases its actual organic HAP emissions to 100 tpy or more from the combination of these operations, which requires that the facility must now meet the standards in §63.5805(d)	3 years from the date that your semi-annual compliance report indicates your facility meets or exceeds the 100 tpy threshold.

Table 3 to Subpart WWWW of Part 63—Organic HAP Emissions Limits for Existing Open Molding Sources, New Open Molding Sources Emitting Less Than 100 TPY of HAP, and New and Existing Centrifugal Casting and Continuous Lamination/Casting Sources that Emit Less Than 100 TPY of HAP

As specified in §63.5805, you must meet the following organic HAP emissions limits that apply to you:

If your operation type is . . .	And you use . . .	[1]Your organic HAP emissions limit is . . .
1. open molding—corrosion-resistant and/or high strength (CR/HS)	a. mechanical resin application b. filament application	113 lb/ton. 171 lb/ton. 123 lb/ton.

	c. manual resin application	
2. open molding—non-CR/HS	a. mechanical resin application b. filament application c. manual resin application	88 lb/ton. 188 lb/ton. 87 lb/ton.
3. open molding—tooling	a. mechanical resin application b. manual resin application	254 lb/ton. 157 lb/ton.
4. open molding—low-flame spread/low-smoke products	a. mechanical resin application b. filament application c. manual resin application	497 lb/ton. 270 lb/ton. 238 lb/ton.
5. open molding—shrinkage controlled resins[2]	a. mechanical resin application b. filament application c. manual resin application	354 lb/ton. 215 lb/ton. 180 lb/ton.
6. open molding—gel coat[3]	a. tooling gel coating b. white/off white pigmented gel coating c. all other pigmented gel coating d. CR/HS or high performance gel coat e. fire retardant gel coat f. clear production gel coat	440 lb/ton. 267 lb/ton. 377 lb/ton. 605 lb/ton. 854 lb/ton. 522 lb/ton.
7. centrifugal casting—CR/HS	a. resin application with the mold closed, and the mold is vented during spinning and cure b. resin application with the mold closed, and the mold is not vented during spinning and cure c. resin application with the mold open, and the mold is vented during spinning and cure d. resin application with the mold open, and the mold is not vented during spinning and cure	25 lb/ton.[4] NA—this is considered to be a closed molding operation. 25 lb/ton.[4] Use the appropriate open molding emission limit.[5]
8. centrifugal casting—non-CR/HS	a. resin application with the mold closed, and the mold is vented during spinning and cure b. resin application with the mold closed, and mold is not vented during the	20 lb/ton.[4] NA—this is considered to be a closed molding operation. 20 lb/ton.[4] Use the appropriate open molding emission limit.[5]

	spinning and cure c. resin application with the mold open, and the mold is vented during spinning and cure d. resin application with the mold open, and the mold is not vented during spinning and cure	
9. pultrusion[6]	N/A	reduce total organic HAP emissions by at least 60 weight percent.
10. continuous lamination/casting	N/A	reduce total organic HAP emissions by at least 58.5 weight percent or not exceed an organic HAP emissions limit of 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus.

[1]Organic HAP emissions limits for open molding and centrifugal casting are expressed as lb/ton. You must be at or below these values based on a 12-month rolling average.

[2]This emission limit applies regardless of whether the shrinkage controlled resin is used as a production resin or a tooling resin.

[3]If you only apply gel coat with manual application, for compliance purposes treat the gel coat as if it were applied using atomized spray guns to determine both emission limits and emission factors. If you use multiple application methods and any portion of a specific gel coat is applied using nonatomized spray, you may use the nonatomized spray gel coat equation to calculate an emission factor for the manually applied portion of that gel coat. Otherwise, use the atomized spray gel coat application equation to calculate emission factors.

[4]For compliance purposes, calculate your emission factor using only the appropriate centrifugal casting equation in item 2 of Table 1 to this subpart, or a site specific emission factor for after the mold is closed as discussed in §63.5796.

[5]Calculate your emission factor using the appropriate open molding covered cure emission factor in item 1 of Table 1 to this subpart, or a site specific emission factor as discussed in §63.5796.

[6]Pultrusion machines that produce parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and have a cross sectional area of 60 square inches or more are not subject to this requirement. Their requirement is the work practice of air flow management which is described in Table 4 to this subpart.

[70 FR 50131, Aug. 25, 2005]

Table 4 to Subpart WWWW of Part 63—Work Practice Standards

As specified in §63.5805, you must meet the work practice standards in the following table that apply to you:

For ...	You must ...
1. a new or existing closed molding operation using compression/injection molding	uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting.
2. a new or existing cleaning operation	not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin.
3. a new or existing materials HAP-containing materials storage operation	keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety.
4. an existing or new SMC manufacturing operation	close or cover the resin delivery system to the doctor box on each SMC manufacturing machine. The doctor box itself may be open.
5. an existing or new SMC manufacturing operation	use a nylon containing film to enclose SMC.
6. all mixing or BMC manufacturing operations[1]	use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to 1 inch are permissible around mixer shafts and any required instrumentation.
7. all mixing or BMC manufacturing operations[1]	close any mixer vents when actual mixing is occurring, except that venting is allowed during addition of materials, or as necessary prior to adding materials or opening the cover for safety. Vents routed to a 95 percent efficient control device are exempt from this requirement.
8. all mixing or BMC manufacturing operations[1]	keep the mixer covers closed while actual mixing is occurring except when adding materials or changing covers to the mixing vessels.
9. a new or existing pultrusion operation manufacturing parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and have a cross sectional area of 60 square inches or more that is not	i. not allow vents from the building ventilation system, or local or portable fans to blow directly on or across the wet-out area(s), ii. not permit point suction of ambient air in the wet-out area(s) unless that air is directed to a control device,

subject to the 95 percent organic HAP emission reduction requirement	iii. use devices such as deflectors, baffles, and curtains when practical to reduce air flow velocity across the wet-out area(s), iv. direct any compressed air exhausts away from resin and wet-out area(s),
	v. convey resin collected from drip-off pans or other devices to reservoirs, tanks, or sumps via covered troughs, pipes, or other covered conveyance that shields the resin from the ambient air, vi. cover all reservoirs, tanks, sumps, or HAP-containing materials storage vessels except when they are being charged or filled, and vii. cover or shield from ambient air resin delivery systems to the wet-out area(s) from reservoirs, tanks, or sumps where practical.

[1]Containers of 5 gallons or less may be open when active mixing is taking place, or during periods when they are in process (i.e., they are actively being used to apply resin). For polymer casting mixing operations, containers with a surface area of 500 square inches or less may be open while active mixing is taking place.

[70 FR 50133, Aug. 25, 2005]

Alternative Organic HAP Emissions Limits for Open Molding, Centrifugal Casting, and SMC Manufacturing Operations Where the Standards are Based on a 95 Percent Reduction Requirement

As specified in §63.5805, as an alternative to the 95 percent organic HAP emissions reductions requirement, you may meet the appropriate organic HAP emissions limits in the following table:

If your operation type is . . .	And you use . . .	LYour organic HAP emissions limit is a[1]. . .
1. Open molding—corrosion-resistant and/or high strength (CR/HS)	a. Mechanical resin application	6 lb/ton.
	b. Filament application	9 lb/ton.
	c. Manual resin application	7 lb/ton.
2. Open molding—non-CR/HS	a. mechanical resin application	13 lb/ton.
	b. Filament application	10 lb/ton.
	c. Manual resin application	5 lb/ton.
3. Open molding—tooling	a. Mechanical resin application	13 lb/ton.
	b. Manual resin application	8 lb/ton.
4. Open molding—low flame spread/low smoke products	a. Mechanical resin application	25 lb/ton.
	b. Filament application	14 lb/ton.

	c. Manual resin application	12 lb/ton.
5. Open molding—shrinkage controlled resins	a. Mechanical resin application	18 lb/ton.
	b. Filament application	11 lb/ton.
	c. Manual resin application	9 lb/ton.
6. Open molding—gel coat[2]	a. Tooling gel coating	22 lb/ton.
	b. White/off white pigmented gel coating	22 lb/ton.
	c. All other pigmented gel coating	19 lb/ton.
	d. CR/HS or high performance gel coat	31 lb/ton.
	e. Fire retardant gel coat	43 lb/ton.
	f. Clear production gel coat	27 lb/ton.
7. Centrifugal casting—CR/HS[3,4]	A vent system that moves heated air through the mold	27 lb/ton.
8. Centrifugal casting—non-CR/HS[3,4]	A vent system that moves heated air through the mold	21 lb/ton.
7. Centrifugal casting—CR/HS[3,4]	A vent system that moves ambient air through the mold	2 lb/ton.
8. Centrifugal casting—non-CR/HS[3,4]	A vent system that moves ambient air through the mold	1 lb/ton.
9. SMC Manufacturing	N/A	2.4 lb/ton.

[1]Organic HAP emissions limits for open molding and centrifugal casting expressed as lb/ton are calculated using the equations shown in Table 1 to this subpart. You must be at or below these values based on a 12-month rolling average.

[2]These limits are for spray application of gel coat. Manual gel coat application must be included as part of spray gel coat application for compliance purposes using the same organic HAP emissions factor equation and organic HAP emissions limit. If you only apply gel coat with manual application, treat the manually applied gel coat as if it were applied with atomized spray for compliance determinations.

[3]Centrifugal casting operations where the mold is not vented during spinning and cure are considered to be closed molding and are not subject to any emissions limit. Centrifugal casting operations where the mold is not vented during spinning and cure, and the resin is applied to the open centrifugal casting mold using mechanical or manual open molding resin application techniques are considered to be open molding operations and the appropriate open molding emission limits apply.

[4]Centrifugal casting operations where the mold is vented during spinning and the resin is applied to the open centrifugal casting mold using mechanical or manual open molding resin application

techniques, use the appropriate centrifugal casting emission limit to determine compliance. Calculate your emission factor using the appropriate centrifugal casting emission factor in Table 1 to this subpart, or a site specific emission factor as discussed in §63.5796.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50133, Aug. 25, 2005]

Table 6 to Subpart WWWW of Part 63—Basic Requirements for Performance Tests, Performance Evaluations, and Design Evaluations for New and Existing Sources Using Add-On Control Devices

As required in §63.5850 you must conduct performance tests, performance evaluations, and design evaluation according to the requirements in the following table:

For . . .	You must . . .	Using . . .	According to the following requirements . . .
1. Each enclosure used to collect and route organic HAP emissions to an add-on control device that is a PTE	Meet the requirements for a PTE	EPA method 204 of appendix M of 40 CFR part 51	Enclosures that meet the requirements of EPA Method 204 of appendix M of 40 CFR part 51 for a PTE are assumed to have a capture efficiency of 100%. Note that the criteria that all access doors and windows that are not treated as natural draft openings shall be closed during routine operation of the process is not intended to require that these doors and windows be closed at all times. It means that doors and windows must be closed any time that you are not actually moving parts or equipment through them. Also, any styrene retained in hollow parts and liberated outside the PTE is not considered to be a violation of the EPA Method 204 criteria.
2. Each enclosure used to collect and route organic HAP emissions to an add-on control device that is not a PTE	a. Determine the capture efficiency of each enclosure used to capture organic HAP emissions sent to an add-on control device	i. EPA methods 204B through E of appendix M of 40 CFR part 51, or	(1) Enclosures that do not meet the requirements for a PTE must determine the capture efficiency by constructing a temporary total enclosure according to the requirements of EPA Method 204 of appendix M of 40 CFR part 51 and measuring the mass flow rates of the organic HAP in the exhaust streams going to the atmosphere and to the control device. Test runs for EPA Methods 204B through E of appendix M of 40 CFR part 51 must be at least 3 hours.
		ii. An alternative test method that meets the	(1) The alternative test method must the data quality objectives and lower confidence limit approaches for

		requirements in 40 CFR part 51, appendix M	alternative capture efficiency protocols requirements contained in 40 CFR part 63 subpart KK, appendix A.
3. Each control device used to comply with a percent reduction requirement, or an organic HAP emissions limit	Determine the control efficiency of each control device used to control organic HAP emissions	The test methods specified in §63.5850 to this subpart	Testing and evaluation requirements are contained in 40 CFR part 63, subpart SS, and §63.5850 to this subpart.
4. Determining organic HAP emission factors for any operation	Determine the mass organic HAP emissions rate	The test methods specified in §63.5850 to this subpart	Testing and evaluation requirements are contained in 40 CFR part 63, subpart SS, and §63.5850 to this subpart.

Table 7 to Subpart WWWW of Part 63—Options Allowing Use of the Same Resin Across Different Operations That Use the Same Resin Type

As specified in §63.5810(d), when electing to use the same resin(s) for multiple resin application methods, you may use any resin(s) with an organic HAP content less than or equal to the values shown in the following table, or any combination of resins whose weighted average organic HAP content based on a 12-month rolling average is less than or equal to the values shown the following table:

If your facility has the following resin type and application method . . .	The highest resin weight is* * * percent organic HAP content, or weighted average weight percent organic HAP content, you can use for . . .	is . . .
1. CR/HS resins, centrifugal casting[1,2]	a. CR/HS mechanical	[3]48.0
	b. CR/HS filament application	48.0
	c. CR/HS manual	48.0
2. CR/HS resins, nonatomized mechanical	a. CR/HS filament application	46.4
	b. CR/HS manual	46.4
3. CR/HS resins, filament application	CR/HS manual	42.0
4. non-CR/HS resins, filament application	a. non-CR/HS mechanical	[3]45.0
	b. non-CR/HS manual	45.0
	c. non-CR/HS centrifugal casting[1,2]	45.0
5. non-CR/HS resins, nonatomized mechanical	a. non-CR/HS manual	38.5
	b. non-CR/HS centrifugal casting[1,2]	38.5

6. non-CR/HS resins, centrifugal casting[1,2]	non-CR/HS manual	37.5
7. tooling resins, nonatomized mechanical	tooling manual	91.4
8. tooling resins, manual	tooling atomized mechanical	45.9

[1]If the centrifugal casting operation blows heated air through the molds, then 95 percent capture and control must be used if the facility wishes to use this compliance option.

[2]If the centrifugal casting molds are not vented, the facility may treat the centrifugal casting operations as if they were vented if they wish to use this compliance option.

[3]Nonatomized mechanical application must be used.

[70 FR 50133, Aug. 25, 2005]

Table 8 to Subpart WWWW of Part 63—Initial Compliance With Organic HAP Emissions Limits

As specified in §63.5860(a), you must demonstrate initial compliance with organic HAP emissions limits as specified in the following table:

For . . .	That must meet the following organic HAP emissions limit . . .	You have demonstrated initial compliance if . . .
1. open molding and centrifugal casting operations	a. an organic HAP emissions limit shown in Tables 3 or 5 to this subpart, or an organic HAP content limit shown in Table 7 to this subpart	i. you have met the appropriate organic HAP emissions limits for these operations as calculated using the procedures in §63.5810 on a 12-month rolling average 1 year after the appropriate compliance date, and/or ii. you demonstrate that any individual resins or gel coats not included in (i) above, as applied, meet their applicable emission limits, or iii. you demonstrate using the appropriate values in Table 7 to this subpart that the weighted average of all resins and gel coats for each resin type and application method meet the appropriate organic HAP contents.
2. open molding centrifugal casting, continuous lamination/casting, SMC and BMC manufacturing, and mixing operations	a. reduce total organic HAP emissions by at least 95 percent by weight	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 to this subpart, are reduced by at least 95 percent by weight.
3. continuous lamination/casting operations	a. reduce total organic HAP emissions, by at least 58.5 weight percent, or	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency in Table 6 to this subpart and the calculation procedures

		specified in §§63.5865 through 63.5890, are reduced by at least 58.5 percent by weight.
	b. not exceed an organic HAP emissions limit of 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 to this subpart and the calculation procedures specified in §§63.5865 through 63.5890, do not exceed 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus.
4. continuous lamination/casting operations	a. reduce total organic HAP emissions by at least 95 weight percent or	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 to this subpart and the calculation procedures specified in §§63.5865 through 63.5890, are reduced by at least 95 percent by weight
	b. not exceed an organic HAP emissions limit of 1.47 lbs of organic HAP per ton of neat resin plus and neat gel coat plus	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 and the calculation procedures specified in §§63.5865 through 63.5890, do not exceed 1.47 lbs of organic HAP of per ton of neat resin plus and neat gel coat plus.
5. pultrusion operations	a. reduce total organic HAP emissions by at least 60 percent by weight	i. total organic HAP emissions, based on the results of the capture efficiency and add-on control device destruction efficiency testing specified in Table 6 to this subpart, are reduced by at least 60 percent by weight, and/or ii. as part of the notification of initial compliance status, the owner/operator submits a certified statement that all pultrusion lines not controlled with an add-on control device, but for which an emission reduction is being claimed, are using direct die injection, and/or wet-area enclosures that meet the criteria of §63.5830.
6. pultrusion operations	a. reduce total organic HAP emissions by at least 95 percent by weight	i. total organic HAP emissions, based on the results of the capture efficiency and add-on control device destruction efficiency testing specified in Table 6 to this subpart, are reduced by at least 95 percent by weight.

[70 FR 50134, Aug. 25, 2005]

Table 9 to Subpart WWWW of Part 63—Initial Compliance With Work Practice Standards

As specified in §63.5860(a), you must demonstrate initial compliance with work practice standards as specified in the following table:

For . . .	That must meet the following standards . . .	You have demonstrated initial compliance if . . .
1. a new or existing closed molding operation using compression/injection molding	uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting	the owner or operator submits a certified statement in the notice of compliance status that only one charge is uncovered, unwrapped, or exposed per mold cycle per compression/injection molding machine, or prior to the loader, hoppers are closed except when adding materials, and materials are recovered after slitting.
2. a new or existing cleaning operation	not use cleaning solvents that contain HAP, except that styrene may be used in closed systems, and organic HAP containing materials may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin between storage and applying resin to the mold or reinforcement	the owner or operator submits a certified statement in the notice of compliance status that all cleaning materials, except styrene contained in closed systems, or materials used to clean cured resin from application equipment, contain no HAP.
3. a new or existing materials HAP-containing materials storage operation	keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety	the owner or operator submits a certified statement in the notice of compliance status that all HAP-containing storage containers are kept closed or covered except when adding or removing materials, and that any bulk storage tanks are vented only as necessary for safety.
4. an existing or new SMC manufacturing operation	close or cover the resin delivery system to the doctor box on each SMC manufacturing machine. The doctor box itself may be open	the owner or operator submits a certified statement in the notice of compliance status that the resin delivery system is closed or covered.
5. an existing or new SMC manufacturing operation	use a nylon containing film to enclose SMC	the owner or operator submits a certified statement in the notice of compliance status that a nylon-containing film is

		used to enclose SMC.
6. an existing or new mixing or BMC manufacturing operation	use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to 1 inch are permissible around mixer shafts and any required instrumentation	the owner or operator submits a certified statement in the notice of compliance status that mixer covers are closed during mixing except when adding materials to the mixers, and that gaps around mixer shafts and required instrumentation are less than 1 inch.
7. an existing mixing or BMC manufacturing operation	not actively vent mixers to the atmosphere while the mixing agitator is turning, except that venting is allowed during addition of materials, or as necessary prior to adding materials for safety	the owner or operator submits a certified statement in the notice of compliance status that mixers are not actively vented to the atmosphere when the agitator is turning except when adding materials or as necessary for safety.
8. a new or existing mixing or BMC manufacturing operation	keep the mixer covers closed during mixing except when adding materials to the mixing vessels	the owner or operator submits a certified statement in the notice of compliance status that mixers closed except when adding materials to the mixing vessels.
9. a new or existing pultrusion operation manufacturing parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and have a cross sectional area of 60 square inches or more that is not subject to the 95 percent organic HAP emission reduction requirement	i. Not allow vents from the building ventilation system, or local or portable fans to blow directly on or across the wet-out area(s), ii. not permit point suction of ambient air in the wet-out area(s) unless that air is directed to a control device, iii. use devices such as deflectors, baffles, and curtains when practical to reduce air flow velocity across the wet-out area(s), iv. direct any compressed air exhausts away from resin and wet-out area(s), v. convey resin collected from drip-off pans or other devices to reservoirs, tanks, or sumps via covered troughs, pipes, or other covered conveyance that shields the resin from the ambient air, vi. clover all reservoirs, tanks, sumps, or HAP-containing materials storage vessels	the owner or operator submits a certified statement in the notice of compliance status that they have complied with all the requirements listed in 9.i through 9.vii.

	except when they are being charged or filled, and vii. cover or shield from ambient air resin delivery systems to the wet-out area(s) from reservoirs, tanks, or sumps where practical.	

[70 FR 50135, Aug. 25, 2005]

Table 10 to Subpart WWWW of Part 63—Data Requirements for New and Existing Continuous Lamination Lines and Continuous Casting Lines Complying with a Percent Reduction Limit on a Per Line Basis

As required in §63.5865(a), in order to comply with a percent reduction limit for continuous lamination lines and continuous casting lines you must determine the data in the following table:

For each line where the wet-out area . . .	And the oven . . .	You must determine . . .
1. Has an enclosure that is not a permanent total enclosure (PTE) and the captured organic HAP emissions are controlled by an add-on control device	a. Is uncontrolled	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual controlled wet-out area organic HAP emissions, iii. Annual uncontrolled oven organic HAP emissions, iv. The capture efficiency of the wet-out area enclosure,
		v. The destruction efficiency of the add-on control device, and vi. The amount of neat resin plus and neat gel coat plus applied.
2. Has an enclosure that is a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. Is uncontrolled	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual controlled wet-out area organic HAP emissions, iii. Annual uncontrolled oven organic HAP emissions, iv. That the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, v. The destruction efficiency of the add-on control device, and vi. The amount of neat resin plus and neat gel coat plus applied.
3. Is uncontrolled	a. Is controlled by an add-on control device	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual uncontrolled oven organic HAP emissions, iii. Annual controlled oven organic HAP emissions, iv. The capture efficiency of the

		oven, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.
4. Has an enclosure that is not a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. Is controlled by an add-on control device	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual controlled wet-out area organic HAP emissions, iii. Annual uncontrolled oven organic HAP emissions, iv. Annual controlled oven organic HAP emissions; v. The capture efficiency of the wet-out area enclosure, vi. Inlet organic HAP emissions to the add-on control device, vii. Outlet organic HAP emissions from the add-on control device, and viii. The amount of neat resin plus and neat gel coat plus applied.
5. Has an enclosure that is a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. Is controlled by an add-on control device	i. That the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, ii. The capture efficiency of the oven, and
		iii. The destruction efficiency of the add-on control device.

Table 11 to Subpart WWWW of Part 63—Data Requirements for New and Existing Continuous Lamination and Continuous Casting Lines Complying with a Percent Reduction Limit or a Lbs/Ton Limit on an Averaging Basis

As required in §63.5865, in order to comply with a percent reduction limit or a lbs/ton limit on an averaging basis for continuous lamination lines and continuous casting lines you must determine the data in the following table:

For each . . .	That . . .	You must determine . . .
1. Wet-out area	Is uncontrolled	Annual uncontrolled wet-out area organic HAP emissions.
2. Wet-out area	a. Has an enclosure that is not a PTE	i. The capture efficiency of the enclosure, and ii. Annual organic HAP emissions that escape the enclosure.
3. Wet-out area	Has an enclosure that is a PTE	That the enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE.
4. Oven	Is uncontrolled	Annual uncontrolled oven organic HAP emissions.
5. Line	a. Is controlled or	i. The amount of neat resin plus applied, and

	uncontrolled	ii. The amount of neat gel coat plus applied.
6. Add-on control device		i. Total annual inlet organic HAP emissions, and total annual outlet organic HAP emissions.

Table 12 to Subpart WWWW of Part 63—Data Requirements for New and Existing Continuous Lamination Lines and Continuous Casting Lines Complying with a Lbs/Ton Organic HAP Emissions Limit on a Per Line Basis

As required in §63.5865(b), in order to comply with a lbs/ton organic HAP emissions limit for continuous lamination lines and continuous casting lines you must determine the data in the following table:

For each line where the wet- out area . . .	And the oven . . .	You must determine . . .
1. Is uncontrolled	a. Is uncontrolled	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual uncontrolled oven organic HAP emissions, and iii. Annual neat resin plus and neat gel coat plus applied.
2. Has an enclosure that is not a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. Is uncontrolled	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual controlled wet-out area organic HAP emissions, iii. Annual uncontrolled oven organic HAP emissions,
		iv. The capture efficiency of the wet-out area enclosure, v. The destruction efficiency of the add-on control device, and vi. The amount of neat resin plus and neat gel coat plus applied.
3. Has an enclosure that is a PTE, and the captured organic HAP emissions are controlled by an add-on control device	a. Is uncontrolled	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual controlled wet-out area organic HAP emissions, iii. Annual uncontrolled oven organic HAP emissions,
		iv. That the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, v. The destruction efficiency of the add-on control device, and vi. The amount of neat resin plus and neat gel coat plus applied.
4. Is uncontrolled	a. Is controlled by an add-on control device	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual uncontrolled oven organic

		HAP emissions, iii. Annual controlled oven organic HAP emissions,
		iv. The capture efficiency of the oven, v. The destruction efficiency of the add-on control device, and vi. The amount of neat resin plus and neat gel coat plus applied.
5. Has an enclosure that is not a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. Is controlled by an add-on control device	i. Annual uncontrolled wet-out area organic HAP emissions, ii. Annual controlled wet-out area organic HAP emissions, iii. Annual uncontrolled oven organic HAP emissions,
		iv. Annual controlled oven organic HAP emissions, v. The capture efficiency of the wet-out area enclosure, vi. The capture efficiency of the oven,
		vii. The destruction efficiency of the add-on control device, and viii. The amount of neat resin plus and neat gel coat plus applied.
6. Has an enclosure that is a PTE, and the captured organic HAP emissions are controlled by add-on control device	a. Is controlled by an add-on control device	i. That the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, ii. The capture efficiency of the oven, iii. Inlet organic HAP emissions to the an add-on control device, and
		iv. Outlet organic HAP emissions from the add-on control device.

Table 13 to Subpart WWWW of Part 63—Applicability and Timing of Notifications

As required in §63.5905(a), you must determine the applicable notifications and submit them by the dates shown in the following table:

If your facility . . .	You must submit . . .	By this date . . .
1. Is an existing source subject to this subpart	An Initial Notification containing the information specified in §63.9(b)(2)	No later than the dates specified in §63.9(b)(2).
2. Is a new source subject to this subpart	The notifications specified in §63.9(b)(4) and (5)	No later than the dates specified §63.9(b)(4) and (5).
3. Qualifies for a compliance	A request for a	No later than the dates

extension as specified in §63.9(c)	compliance extension as specified in §63.9(c)	specified in §63.6(i).
4. Is complying with organic HAP emissions limit averaging provisions	A Notification of Compliance Status as specified in §63.9(h)	No later than 1 year plus 30 days after your facility's compliance date.
5. Is complying with organic HAP content limits, application equipment requirements, or organic HAP emissions limit other than organic HAP emissions limit averaging	A Notification of Compliance Status as specified in §63.9(h)	No later than 30 calendar days after your facility's compliance date.
6. Is complying by using an add-on control device	a. A notification of intent to conduct a performance test as specified in §63.9(e)	No later than the date specified in §63.9(e).
	b. A notification of the date for the CMS performance evaluation as specified in §63.9(g)	The date of submission of notification of intent to conduct a performance test.
	c. A Notification of Compliance Status as specified in §63.9(h)	No later than 60 calendar days after the completion of the add-on control device performance test and CMS performance evaluation.

Table 14 to Subpart WWWW of Part 63—Requirements for Reports

As required in §63.5910(a), (b), (g), and (h), you must submit reports on the schedule shown in the following table:

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Compliance report	a. A statement that there were no deviations during that reporting period if there were no deviations from any emission limitations (emission limit, operating limit, opacity limit, and visible emission limit) that apply to you and there were no deviations from the requirements for work practice standards in Table 4 to this subpart that apply to you. If there were no periods during which the CMS, including CEMS, and operating parameter monitoring systems, was out of control as specified in §63.8(c)(7), the report must also contain a statement that there were no periods during which the CMS was out of control during the reporting period	Semiannually according to the requirements in §63.5910(b).
	b. The information in §63.5910(d) if you	Semiannually according to

	have a deviation from any emission limitation (emission limit, operating limit, or work practice standard) during the reporting period. If there were periods during which the CMS, including CEMS, and operating parameter monitoring systems, was out of control, as specified in §63.8(c)(7), the report must contain the information in §63.5910(e)	the requirements in §63.5910(b).
	c. The information in §63.10(d)(5)(i) if you had a startup, shutdown or malfunction during the reporting period, and you took actions consistent with your startup, shutdown, and malfunction plan	Semiannually according to the requirements in §63.5910(b).
2. An immediate startup, shutdown, and malfunction report if you had a startup, shutdown, or malfunction during the reporting period that is not consistent with your startup, shutdown, and malfunction plan	a. Actions taken for the event	By fax or telephone within 2 working days after starting actions inconsistent with the plan.
	b. The information in §63.10(d)(5)(ii)	By letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authority. (§63.10(d)(5)(ii)).

Table 15 to Subpart WWWW of Part 63—Applicability of General Provisions (Subpart A) to Subpart WWWW of Part 63

As specified in §63.5925, the parts of the General Provisions which apply to you are shown in the following table:

The general provisions reference . . .	That addresses . . .	And applies to subpart WWWW of part 63 . . .	Subject to the following additional information . . .
§63.1(a)(1)	General applicability of the general provisions	Yes	Additional terms defined in subpart WWWW of Part 63, when overlap between subparts A and WWWW of Part 63 of this part, subpart WWWW of Part 63 takes precedence.
§63.1(a)(2)	General applicability of the general	Yes	

through (4)	provisions		
§63.1(a)(5)	Reserved	No	
§63.1(a)(6)	General applicability of the general provisions	Yes	
§63.1(a)(7) through (9)	Reserved	No	
§63.1(a)(10) through (14)	General applicability of the general provisions	Yes	
§63.1(b)(1)	Initial applicability determination	Yes	Subpart WWWW of Part 63 clarifies the applicability in §§63.5780 and 63.5785.
§63.1(b)(2)	Reserved	No.	
§63.1(b)(3)	Record of the applicability determination	Yes	
§63.1(c)(1)	Applicability of this part after a relevant standard has been set under this part	Yes	Subpart WWWW of Part 63 clarifies the applicability of each paragraph of subpart A to sources subject to subpart WWWW of Part 63.
§63.1(c)(2)	Title V operating permit requirement	Yes	All major affected sources are required to obtain a title V operating permit. Area sources are not subject to subpart WWWW of Part 63.
§63.1(c)(3) and (4)	Reserved	No	
§63.1(c)(5)	Notification requirements for an area source that increases HAP emissions to major source levels	Yes	
§63.1(d)	Reserved	No	
§63.1(e)	Applicability of permit program before a relevant standard has been set under this part	Yes	
§63.2	Definitions	Yes	Subpart WWWW of Part 63 defines terms in §63.5935. When overlap between subparts A and WWWW of Part 63 occurs, you must comply with the subpart WWWW of Part 63 definitions, which take precedence over the subpart A definitions.

§63.3	Units and abbreviations	Yes	Other units and abbreviations used in subpart WWWW of Part 63 are defined in subpart WWWW of Part 63.
§63.4	Prohibited activities and circumvention	Yes	§63.4(a)(3) through (5) is reserved and does not apply.
§63.5(a)(1) and (2)	Applicability of construction and reconstruction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(1)	Relevant standards for new sources upon construction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(2)	Reserved	No	
§63.5(b)(3)	New construction/reconstruction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(4)	Construction/reconstruction notification	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(5)	Reserved	No	
§63.5(b)(6)	Equipment addition or process change	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(c)	Reserved	No	
§63.5(d)(1)	General application for approval of construction or reconstruction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(d)(2)	Application for approval of construction	Yes	
§63.5(d)(3)	Application for approval of reconstruction	No	
§63.5(d)(4)	Additional information	Yes	
§63.5(e)(1) through (5)	Approval of construction or reconstruction	Yes	
§63.5(f)(1) and (2)	Approval of construction or reconstruction based on prior State preconstruction review	Yes	
§63.6(a)(1)	Applicability of compliance with standards and maintenance requirements	Yes	
§63.6(a)(2)	Applicability of area sources that increase HAP emissions to become	Yes	

	major sources		
§63.6(b)(1) through (5)	Compliance dates for new and reconstructed sources	Yes	Subpart WWWW of Part 63 clarifies compliance dates in §63.5800.
§63.6(b)(6)	Reserved	No	
§63.6(b)(7)	Compliance dates for new operations or equipment that cause an area source to become a major source	Yes	New operations at an existing facility are not subject to new source standards.
§63.6(c)(1) and (2)	Compliance dates for existing sources	Yes	Subpart WWWW of Part 63 clarifies compliance dates in §63.5800.
§63.6(c)(3) and (4)	Reserved	No	
§63.6(c)(5)	Compliance dates for existing area sources that become major	Yes	Subpart WWWW of Part 63 clarifies compliance dates in §63.5800.
§63.6(d)	Reserved	No	
§63.6(e)(1) and (2)	Operation & maintenance requirements	Yes	
§63.6(e)(3)	Startup, shutdown, and malfunction plan and recordkeeping	Yes	Subpart WWWW of Part 63 requires a startup, shutdown, and malfunction plan only for sources using add-on controls.
§63.6(f)(1)	Compliance except during periods of startup, shutdown, and malfunction	No	Subpart WWWW of Part 63 requires compliance during periods of startup, shutdown, and malfunction, except startup, shutdown, and malfunctions for sources using add-on controls.
§63.6(f)(2) and (3)	Methods for determining compliance	Yes	
§63.6(g)(1) through (3)	Alternative standard	Yes	
§63.6(h)	Opacity and visible emission Standards	No	Subpart WWWW of Part 63 does not contain opacity or visible emission standards.
§63.6(i)(1) through (14)	Compliance extensions	Yes	
§63.6(i)(15)	Reserved	No	

§63.6(i)(16)	Compliance extensions	Yes	
§63.6(j)	Presidential compliance exemption	Yes	
§63.7(a)(1)	Applicability of performance testing requirements	Yes	
§63.7(a)(2)	Performance test dates	No	Subpart WWWW of Part 63 initial compliance requirements are in §63.5840.
§63.7(a)(3)	CAA Section 114 authority	Yes	
§63.7(b)(1)	Notification of performance test	Yes	
§63.7(b)(2)	Notification rescheduled performance test	Yes	
§63.7(c)	Quality assurance program, including test plan	Yes	Except that the test plan must be submitted with the notification of the performance test.
§63.7(d)	Performance testing facilities	Yes	
§63.7(e)	Conditions for conducting performance tests	Yes	Performance test requirements are contained in §63.5850. Additional requirements for conducting performance tests for continuous lamination/casting are included in §63.5870.
§63.7(f)	Use of alternative test method	Yes	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes	
§63.7(h)	Waiver of performance tests	Yes	
§63.8(a)(1) and (2)	Applicability of monitoring requirements	Yes	
§63.8(a)(3)	Reserved	No	
§63.8(a)(4)	Monitoring requirements when using flares	Yes	
§63.8(b)(1)	Conduct of monitoring exceptions	Yes	
§63.8(b)(2) and (3)	Multiple effluents and multiple monitoring systems	Yes	
§63.8(c)(1)	Compliance with CMS operation and maintenance requirements	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission

			limit.
§63.8(c)(2) and (3)	Monitoring system installation	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(c)(4)	CMS requirements	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(c)(5)	Continuous Opacity Monitoring System (COMS) minimum procedures	No	Subpart WWWW of Part 63 does not contain opacity standards.
§63.8(c)(6) through (8)	CMS calibration and periods CMS is out of control	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(d)	CMS quality control program, including test plan and all previous versions	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(1)	Performance evaluation of CMS	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(2)	Notification of performance evaluation	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(3) and (4)	CMS requirements/alternatives	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(5)(i)	Reporting performance evaluation results	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(5)(ii)	Results of COMS performance evaluation	No	Subpart WWWW of Part 63 does not contain opacity standards.

§63.8(f)(1) through (3)	Use of an alternative monitoring method	Yes	
§63.8(f)(4)	Request to use an alternative monitoring method	Yes	
§63.8(f)(5)	Approval of request to use an alternative monitoring method	Yes	
§63.8(f)(6)	Request for alternative to relative accuracy test and associated records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(g)(1) through (5)	Data reduction	Yes	
§63.9(a)(1) through (4)	Notification requirements and general information	Yes	
§63.9(b)(1)	Initial notification applicability	Yes	
§63.9(b)(2)	Notification for affected source with initial startup before effective date of standard	Yes	
§63.9(b)(3)	Reserved	No	
§63.9(b)(4)(i)	Notification for a new or reconstructed major affected source with initial startup after effective date for which an application for approval of construction or reconstruction is required	Yes	
§63.9(b)(4)(ii) through (iv)	Reserved	No	
§63.9(b)(4)(v)	Notification for a new or reconstructed major affected source with initial startup after effective date for which an application for approval of construction or reconstruction is required	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.9(b)(5)	Notification that you are subject to this subpart for new or reconstructed affected source with initial startup after effective date and for which an application for approval of construction or reconstruction is not required	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.9(c)	Request for compliance extension	Yes	
§63.9(d)	Notification of special compliance requirements for new source	Yes	

§63.9(e)	Notification of performance test	Yes	
§63.9(f)	Notification of opacity and visible emissions observations	No	Subpart WWWW of Part 63 does not contain opacity or visible emission standards.
§63.9(g)(1)	Additional notification requirements for sources using CMS	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.9(g)(2)	Notification of compliance with opacity emission standard	No	Subpart WWWW of Part 63 does not contain opacity emission standards.
§63.9(g)(3)	Notification that criterion to continue use of alternative to relative accuracy testing has been exceeded	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.9(h)(1) through (3)	Notification of compliance status	Yes	
§63.9(h)(4)	Reserved	No	
§63.9(h)(5) and (6)	Notification of compliance status	Yes	
§63.9(i)	Adjustment of submittal deadlines	Yes	
§63.9(j)	Change in information provided	Yes	
§63.10(a)	Applicability of recordkeeping and reporting	Yes	
§63.10(b)(1)	Records retention	Yes	
§63.10(b)(2)(i) through (v)	Records related to startup, shutdown, and malfunction	Yes	Only applies to facilities that use an add-on control device.
§63.10(b)(2)(vi) through (xi)	CMS records, data on performance tests, CMS performance evaluations, measurements necessary to determine conditions of performance tests, and performance evaluations	Yes	
§63.10(b)(2)(xii)	Record of waiver of recordkeeping and reporting	Yes	
§63.10(b)(2)(xiii)	Record for alternative to the relative accuracy test	Yes	
§63.10(b)(2)(xiv)	Records supporting initial notification and notification of compliance status	Yes	
§63.10(b)(3)	Records for applicability	Yes	

	determinations		
§63.10(c)(1)	CMS records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.10(c)(2) through (4)	Reserved	No	
§63.10(c)(5) through (8)	CMS records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.10(c)(9)	Reserved	No	
§63.10(c)(10) through (15)	CMS records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.10(d)(1)	General reporting requirements	Yes	
§63.10(d)(2)	Report of performance test results	Yes	
§63.10(d)(3)	Reporting results of opacity or visible emission observations	No	Subpart WWWW of Part 63 does not contain opacity or visible emission standards.
§63.10(d)(4)	Progress reports as part of extension of compliance	Yes	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	Yes	Only applies if you use an add-on control device.
§63.10(e)(1) through (3)	Additional reporting requirements for CMS	Yes	This section applies if you have an add-on control device and elect to use a CEM to demonstrate continuous compliance with an emission limit.
§63.10(e)(4)	Reporting COMS data	No	Subpart WWWW of Part 63 does not contain opacity standards.
§63.10(f)	Waiver for recordkeeping or reporting	Yes	
§63.11	Control device requirements	Yes	Only applies if you elect to use a flare as a control device.
§63.12	State authority and delegations	Yes	

§63.13	Addresses of State air pollution control agencies and EPA Regional Offices	Yes	
§63.14	Incorporations by reference	Yes	
§63.15	Availability of information and confidentiality	Yes	

Appendix A to Subpart WWWW of Part 63—Test Method for Determining Vapor Suppressant Effectiveness

1. Scope and Application

1.1 *Applicability.* If a facility is using vapor suppressants to reduce hazardous air pollutant (HAP) emissions, the organic HAP emission factor equations in Table 1 to this subpart require that the vapor suppressant effectiveness factor be determined. The vapor suppressant effectiveness factor is then used as one of the inputs into the appropriate organic HAP emission factor equation. The vapor suppressant effectiveness factor test is not intended to quantify overall volatile emissions from a resin, nor to be used as a stand-alone test for emissions determination. This test is designed to evaluate the performance of film forming vapor suppressant resin additives. The results of this test are used only in combination with the organic HAP emissions factor equations in Table 1 to this subpart to generate emission factors.

1.1.1 The open molding process consists of application of resin and reinforcements to the mold surface, followed by a manual rollout process to consolidate the laminate, and the curing stage where the laminate surface is not disturbed. Emission studies have shown that approximately 50 percent to 55 percent of the emissions occur while the resin is being applied to the mold. Vapor suppressants have little effect during this portion of the lamination process, but can have a significant effect during the curing stage. Therefore, if a suppressant is 100 percent effective, the overall emissions from the process would be reduced by 45 percent to 50 percent, representing the emissions generated during the curing stage. In actual practice, vapor suppressant effectiveness will be less than 100 percent and the test results determine the specific effectiveness in terms of the vapor suppressant effectiveness factor. This factor represents the effectiveness of a specific combination of suppressant additive and resin formulation.

1.1.2 A resin manufacturer may supply a molder with a vapor-suppressed resin, and employ this test to provide the molder with the vapor suppressant effectiveness factor for that combination of resin and vapor suppressant. The factor qualifies the effectiveness of the vapor suppressant when the resin is tested in the specific formulation supplied to the molder. The addition of fillers or other diluents by the molder may impact the effectiveness of the vapor suppressant. The formulation, including resin/glass ratio and filler content, used in the test should be similar to the formulation to be used in production. The premise of this method is to compare laminate samples made with vapor suppressant additive and made without the additive. The difference in emissions between the two yields the vapor suppressant effectiveness factor.

1.1.3 The method uses a mass balance determination to establish the relative loss of the volatile component from unsaturated polyester or vinyl ester resins, with and without vapor suppressant additives. The effectiveness of a specific vapor suppressant and resin mixture is determined by comparing the relative volatile weight losses from vapor suppressed and non-suppressed resins. The volatile species are not separately analyzed. While the species contained in the volatile component are not determined, an extended listing of potential monomer that may be contained in unsaturated polyester or vinyl ester resins is provided in Table 1.1. However, most polyester

and vinyl ester resin formulations presently used by the composites industry only contain styrene monomer.

Table 1.1—List of Monomers Potentially Present in Unsaturated Polyester/Vinyl Ester Resins

Monomer	CAS No.
Styrene	100–42–5.
Vinyl toluene	25013–15–4.
Methyl methacrylate	80–62–6.
Alpha methyl styrene	98–83–9.
Para methyl styrene	Vinyl toluene isomer.
Chlorostyrene	1331–28–8.
Diallyl phthalate	131–17–9.
Other volatile monomers	Various.

2. Summary of Method

2.1 Differences in specific resin and suppressant additive chemistry affect the performance of a vapor suppressant. The purpose of this method is to quantify the effectiveness of a specific combination of vapor suppressant and unsaturated polyester or vinyl ester resin as they are to be used in production. This comparative test quantifies the loss of volatiles from a fiberglass reinforced laminate during the roll-out and curing emission phases, for resins formulated with and without a suppressant additive. A criterion for this method is the testing of a non-vapor suppressed resin system and testing the same resin with a vapor suppressant. The two resins are as identical as possible with the exception of the addition of the suppressant to one. The exact formulation used for the test will be determined by the in-use production requirements. Each formulation of resin, glass, fillers, and additives is developed to meet particular customer and or performance specifications.

2.2 The result of this test is used as an input factor in the organic HAP emissions factor equations in Table 1 to this subpart, which allows these equations to predict emissions from a specific combination of resin and suppressant. This test does not provide an emission rate for the entire lamination process.

3. Definitions and Acronyms

3.1 Definitions

3.1.1 *Vapor suppressant.* An additive that inhibits the evaporation of volatile components in unsaturated polyester or vinyl ester resins.

3.1.2 *Unsaturated polyester resin.* A thermosetting resin commonly used in composites molding.

3.1.3 *Unsaturated vinyl ester resin.* A thermosetting resin used in composites molding for corrosion resistant and high performance applications.

3.1.4 *Laminate.* A combination of fiber reinforcement and a thermoset resin.

3.1.5 *Chopped strand mat.* Glass fiber reinforcement with random fiber orientation.

3.1.6 *Initiator.* A curing agent added to an unsaturated polyester or vinyl ester resin.

3.1.7 *Resin application roller.* A tool used to saturate and compact a wet laminate.

3.1.8 *Gel time.* The time from the addition of initiator to a resin to the state of resin gelation.

3.1.9 *Filled resin system.* A resin, which includes the addition of inert organic or inorganic materials to modify the resin properties, extend the volume and to lower the cost. Fillers include, but are not limited to; mineral particulates; microspheres; or organic particulates. This test is not intended to be used to determine the vapor suppressant effectiveness of a filler.

3.1.10 *Material safety data sheet.* Data supplied by the manufacturer of a chemical product, listing hazardous chemical components, safety precautions, and required personal protection equipment for a specific product.

3.1.11 *Tare(ed).* Reset a balance to zero after a container or object is placed on the balance; that is to subtract the weight of a container or object from the balance reading so as to weigh only the material placed in the container or on the object.

3.1.12 *Percent glass.* The specified glass fiber weight content in a laminate. It is usually determined by engineering requirements for the laminate.

3.2 Acronyms:

3.2.1 *VS* —vapor suppressed or vapor suppressant.

3.2.2 *NVS* —non-vapor suppressed.

3.2.3 *VSE* —vapor suppressant effectiveness.

3.2.4 *VSE Factor* —vapor suppressant effectiveness, factor used in the equations in Table 1 to this subpart.

3.2.5 *CSM* —chopped strand mat.

3.2.6 *MSDS* —material safety data sheet.

4. Interferences

There are no identified interferences which affect the results of this test.

5. Safety

Standard laboratory safety procedures should be used when conducting this test. Refer to specific MSDS for handling precautions.

6. Equipment and Supplies

Note: Mention of trade names or specific products or suppliers does not constitute an endorsement by the Environmental Protection Agency.

6.1 Required Equipment.

6.1.1 Balance enclosure.[1]

6.1.2 Two (2) laboratory balances—accurate to ±0.01g.[2]

6.1.3 Stop watch or balance data recording output to data logger with accuracy ±1 second.[3]

6.1.4 Thermometer—accurate to ±2.0 °F(±1.0 °C).[4]

6.1.5 A lipped pan large enough to hold the cut glass without coming into contact with the vertical sides, *e.g.* a pizza pan.[5]

6.1.6 Mylar film sufficient to cover the bottom of the pan.[6]

6.1.7 Tape to keep the Mylar from shifting in the bottom of the pan.[7]

6.1.8 Plastic tri-corner beakers of equivalent—250 ml to 400 ml capacity.[8]

6.1.9 Eye dropper or pipette.[9]

6.1.10 Disposable resin application roller,3/16&inch;–3/4&inch; diameter × 3&inch;–6&inch; roller length.[10]

6.1.11 Hygrometer or psychrometer[11] accurate to ±5 percent

6.1.12 Insulating board, (Teflon, cardboard, foam board etc.) to prevent the balance from becoming a heat sink.[12]

6.2 Optional Equipment.

6.2.1 Laboratory balance—accurate to ±.01g with digital output, such as an RS–232 bi-directional interface[13] for use with automatic data recording devices.

6.2.2 Computer with recording software configured to link to balance digital output. Must be programmed to record data at the minimum intervals required for manual data acquisition.

6.3 Supplies.

6.3.1 Chopped strand mat—1.5 oz/ft.[2] [14]

7. Reagents and Standards

7.1 *Initiator.* The initiator type, brand, and concentration will be specified by resin manufacturer, or as required by production operation.

7.2 Polyester or vinyl ester resin.

7.3 Vapor suppressant additive.

8. Sample Collection, Preservation, and Storage

This test method involves the immediate recording of data during the roll out and curing phases of the lamination process during each test run. Samples are neither collected, preserved, nor stored.

9. Quality Control

Careful attention to the prescribed test procedure, routing equipment calibration, and replicate testing are the quality control activities for this test method. Refer to the procedures in section 11. A minimum of six test runs of a resin system without a suppressant and six test runs of the same resin with a suppressant shall be performed for each resin and suppressant test combination.

10. Calibration and Standardization

10.1 The laboratory balances, stopwatch, hygrometer and thermometer shall be maintained in a state of calibration prior to testing and thereafter on a scheduled basis as determined by the testing laboratory. This shall be accomplished by using certified calibration standards.

10.2 Calibration records shall be maintained for a period of 3 years.

11. Test Procedure

11.1 Test Set-up.

11.1.1 The laboratory balance is located in an enclosure to prevent fluctuations in balance readings due to localized air movement. The front of enclosure is open to permit work activity, but positioned so that local airflow will not effect balance readings. The ambient temperature is determined by suspending the thermometer at a point inside the enclosure.

11.1.2 The bottom of the aluminum pan is covered with the Mylar film. The film is held in position with tape or by friction between the pan and the film.

11.1.3 The resin and pan are brought to room temperature. This test temperature must be between 70 °F and 80 °F. The testing temperature cannot vary more than ±2 °F during the measurement of test runs. Temperature shall be recorded at the same time weight is recorded on suppressed and non-suppressed test data sheets, shown in Table 17.1.

11.1.4 The relative humidity may not change more than ±15 percent during the test runs. This is determined by recording the relative humidity in the vicinity of the test chamber at the beginning and end of an individual test run. This data is recorded on the test data sheets shown in Table 17.1.

11.1.5 Two plies of nominal 1.5 oz/ft^2 chopped strand mat (CSM) are cut into a square or rectangle with the minimum surface area of 60 square inches (*i.e.* a square with a side dimension of 7.75 inches).

11.1.6 The appropriate resin application roller is readily available.

11.2 Resin Gel Time/Initiator Percentage

11.2.1 Previous testing has indicated that resin gel time influences the emissions from composite production. The testing indicated that longer the gel times led to higher emissions. There are a number of factors that influence gel time including initiator type, initiator brand, initiator level, temperature and resin additives. Under actual usage conditions a molder will adjust the initiator to meet a gel time requirement. In this test procedure, the vapor suppressed and non-vapor

suppressed resin systems will be adjusted to the same gel time by selecting the appropriate initiator level for each.

11.2.2 All test runs within a test will be processed in a manner that produces the same resin gel time ±2 minutes. To facilitate the resin mixing procedure, master batches of resin and resin plus vapor suppressant of resin are prepared. These resin master batches will have all of the required ingredients except initiator; this includes filler for filled systems. The gel times for the tests are conducted using the master batch and adjustments to meet gel time requirements shall be made to the master batch before emission testing is conducted. Test temperatures must be maintained within the required range, during gel time testing. Further gel time testing is not required after the non-vapor suppressed and vapor suppressed master batches are established with gel times within ±2 minutes. A sufficient quantity of each resin should be prepared to allow for additional test specimens in the event one or more test fails to meet the data acceptance criteria discussed in Section 11.5 and shown in Table 17.2.

11.2.3 The specific brand of initiator and the nominal percentage level recommended by the resin manufacturer will be indicated on the resin certificate of analysis[15] ; or, if a unique gel time is required in a production laminate, initiator brand and percentage will be determined by that specific requirement.

11.2.4 Examples:

11.2.4.1 The resin for a test run is specified as having a 15-minute cup gel time at 77 °F using Brand X initiator at 1.5 percent by weight. The non-suppressed control resin has a 15-minute gel time. The suppressed resin has a gel time of 17-minutes. An initiator level of 1.5 percent would be selected for the both the non-suppressed and the suppressed test samples.

11.2.4.2 Based on a specific production requirement, a resin is processed in production using 2.25 percent of Brand Y initiator, which produces a 20-minute gel time. This initiator at level of 2.25 percent produces a 20 minute gel time for the non-suppressed control resin, but yields a 25-minute gel time for the suppressed resin sample. The suppressed resin is retested at 2.50 percent initiator and produces a 21-minute gel time. The initiator levels of 2.25 percent and 2.50 percent respectively would yield gel times within ±2 minutes.

11.3 Test Run Procedure for Unfilled Resin (see the data sheet shown in Table 17.1).

11.3.1 The insulating board is placed on the balance.

11.3.2 The aluminum pan with attached Mylar film is placed on the balance, and the balance is tared (weight reading set to zero with the plate on the balance.)

11.3.3 Place two plies of 1.5 oz. CSM on the balance and record the weight (glass weight).

11.3.4 The resin beaker and stirring rod are put on the second balance and tared.

11.3.5 The required resin weight and initiator weight are calculated (refer to calculation formulas in 12.2).

11.3.6 The disposable resin application roller is placed on the edge of the plate.

11.3.7 The balance is tared, with the aluminum pan, Mylar film, glass mat, and resin application roller on the balance pan.

11.3.8 Resin is weighed into a beaker, as calculated, using the second balance. The mixing stick should be tared with the beaker weight.

11.3.9 Initiator is weighed into the resin, as calculated, using an eyedropper or a pipette, and the combination is mixed.

11.3.10 Initiated resin is poured on chopped strand mat in a pe-determined pattern (see Figure 11.6).

11.3.11 A stopwatch is started from zero.

11.3.12 The initial laminate weight is recorded.

11.3.13 The plate is removed from balance to enable roll-out of the laminate.

11.3.14 The wet laminate is rolled with the resin application roller to completely distribute the resin, saturate the chopped strand mat, and eliminate air voids. Roll-out time should be in the range of 2 to 3[16] minutes and vary less than ±10 percent of the average time required for the complete set of six suppressed and six non-suppressed runs.

11.3.15 Record the rollout end time (time from start to completion of rollout).

11.3.16 Place the resin application roller on the edge of the plate when rollout is completed.

11.3.17 Place the plate back on the balance pan. Immediately record the weight.

11.3.18 For the first test in a series of six tests, weight is recorded every 5-minute interval (suppressed and non-suppressed). The end of the test occurs when three consecutive equal weights are recorded or a weight gain is observed (the last weight before the increased weight is the end of test weight). For the remaining five tests in the series, after the initial weights are taken, the next weight is recorded 30 minutes before the end of the test, as suggested by the results from the first test. It is likely that the time to reach the end point of a suppressed resin test will be shorter than the time required to complete a non-suppressed test. Therefore, the time to start taking data manually may be different for suppressed and non-suppressed resins.

11.4 Test Run Procedures for Filled Resin Systems[17] Note that the procedure for filled systems differs from the procedure for unfilled systems. With filled systems, resin is applied to one ply of the CSM and the second ply is placed on top of the resin.

11.4.1 The insulating board is placed on the balance.

11.4.2 The aluminum pan with attached Mylar film is placed on the balance, and the balance is tared (weight reading set to zero with the plate on the balance.)

11.4.3 Place two plies of 1.5 oz. CSM on the balance and record the weight (glass weight).

11.4.4 Remove the top ply of fiberglass and record its weight (weight of 1st layer of glass).

11.4.5 The required resin weight and initiator weight are calculated (refer to calculation formulas in 12.2). Calculate the weight of filled resin and initiator based on the 2 layers of fiberglass.

11.4.6 The resin beaker and stirring rod are put on the second balance and tared.

11.4.7 A disposable resin application roller is placed on the edge of the plate.

11.4.8 The balance is tared, with the aluminum pan, Mylar film, glass mat, and resin application roller on the balance pan.

11.4.9 Resin is weighed into the beaker, as calculated, using the second balance. The mixing stick should be tared with the beaker weight.

11.4.10 Initiator is weighed into the resin, as calculated, using an eyedropper or a pipette, and the combination is mixed.

11.4.11 Initiated resin is poured on the single ply of CSM in a pre-determined pattern. Refer to Figure 11.6.

11.4.12 A stopwatch is started from zero.

11.4.13 Record the weight of the resin ans single ply of CSM (L_1). The initial laminate weight equals L_1plus the weight of second glass layer.

11.4.14 Replace the second layer of fiberglass.

11.4.15 Remove the plate from the balance to allow roll-out of the laminate.

11.4.16 Roll the wet laminate with the resin application roller to completely distribute the resin, saturate the chopped strand mat, and eliminate air voids. Roll-out time should be in the range of 2 to 3[16] minutes and vary less than ±10 percent of the average time required for the complete set of six suppressed and six non-suppressed runs.

11.4.17 Record the roll-out end time (time from start to completion of rollout).

11.4.18 Place the resin application roller on the edge of the plate when rollout is completed.

11.4.19 Place the plate back on the balance pan. The initial weight is recorded immediately.

11.4.20 For the first test run in a series of six, weight is recorded at every 5-minute interval (suppressed and non-suppressed). The end of the test occurs when three consecutive equal weights are recorded or a weight gain is observed (the last weight before the increased weight is the end of test weight). For the remaining five tests in the series, after the initial weights are taken, the next weight is recorded 30 minutes before the end of the test, as suggested by the results from the first test. It is likely that the time to reach the end point of a suppressed resin test will be shorter than the time required to complete a non-suppressed test. Therefore, the time to start taking data manually may be different for suppressed and non-suppressed resins.

11.5 Data Acceptance Criteria:

11.5.1 A test set is designed as twelve individual test runs using the same resin, initiator, and gel time, six of the test runs use the resin non-vapor suppressed and the other six use it vapor suppressed.

11.5.2 If a test run falls outside any of the time, temperature, weight or humidity variation requirements, it must be discarded and run again.

11.5.3 The laminate roll out time for each individual test run must vary less than ±10 percent of the average time required for the complete set of six suppressed and six non-suppressed runs.

11.5.4 Test temperature for each test run must be maintained within ±2 °F and the average must be between 70° and 80 °F. Refer to 11.1.3.

11.5.5 The difference in the amount of resin for each run must be within ±10 percent of the average weight for the complete set of six suppressed and six non-suppressed runs.

11.5.6 The relative humidity from each test run must be within ±15 percent of the average humidity for the complete set of six suppressed and six non-suppressed tests. Refer to 11.1.4

11.5.7 The glass content for each test set must be within ±10 percent of the average resin-to-/glass ratio for the complete set of six suppressed and six non-suppressed runs. Refer to 12.2).

11.5.8 The filler content for each test of a test set must be within ±5 percent of the average filler content for the complete set of six suppressed and six non-suppressed runs. Refer to 12.2.

11.6 Resin Application Pour Pattern:

11.6.1 To facilitate the distribution of resin across the chopped strand mat, and to provide consistency from test to test, a uniform pour pattern should be used. A typical pour pattern is shown below:

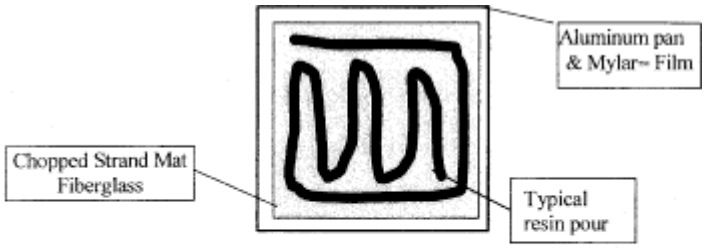


Figure 11.6 Resin Distribution Diagram

11.6.2 The resin is to be evenly distributed across the entire surface of the chopped strand mat using the resin application roller to achieve a wet look across the surface of the laminate. Pushing excess resin off the reinforcement and onto the Mylar sheet should be avoided. No resin is to be pushed more than1/2inch beyond the edge of the glass mat. If excess resin is pushed further from the glass mat, it will void the test run. As part of this process, typical visible air voids are to be eliminated by the rollout process. If the pour pattern is different from the above, it must be recorded and attached to test data sheet 17.1.

12. Data Analysis and Calculations

12.1 Data Analysis:

This test method requires a simple mass balance calculation, no special data analysis is necessary.

12.2 Calculations:

12.2.1 The target glass content (percent) for unfilled resin systems is determined from the specific production parameters being evaluated. In absence of any specific production requirements the target may be set at the tester's discretion.

12.2.2 Glass content determination (expressed as a per cent):

% Glass = Glass wt(g)/(Glass wt(g) + Resin weight (g))

12.2.3 Weight of resin required:

Resin weight required = (Glass wt (g)/% glass)—Glass wt (g)

12.2.4 Filled resin formulation determination for filled resin systems (*e.g.* >30 percent filler by weight for a particulate filler, or >1 percent by weight for a lightweight filler, such as hollow microspheres):

% Resin content = resin

weight(g)/(resin weight(g) + glass

weight(g) + filler weight(g))

% Glass content = glass

weight(g)/(resin weight(g) + glass

weight(g) + filler weight(g))

Filler content = filler

weight(g)/(resin weight(g) + glass

weight(g) + filler weight(g))

12.2.5 Initiator weight determination:

Initiator weight (g) = Resin weight(g) × Initiator %

12.2.6 Emission weight loss determination:

Emissions weight loss (g) = Initial resin weight (g)−Final resin weight (g)

12.2.7 % Emission weight loss:

% Emission Weight Loss = (Emission weight loss (g) Initial resin weight (g) × 100

12.2.8 Average % Emission Weight Loss (assuming six test runs):

$$Average\ \%\ \text{Emission Weight Loss} = \sum_{i}^{N=6} (\%\ \text{Emission Weight Loss}_i)/6$$

12.2.9 VSE Factor calculation:

VSE Factor = 1 −(Average % VS Emission Weight Loss/Average NVS Emission Weight Loss)

Table 12.1—Example Calculation

Test #	% VS weight loss	% NVS weight loss
1	6.87	10.86
2	6.76	11.23
3	5.80	12.02
4	5.34	11.70
5	6.11	11.91
6	6.61	10.63
Average Weight Loss	6.25	11.39
VSE Factor		0.4

VSE Factor = 0.45

VSE Factor is used as input into the appropriate equation in Table 1 to this subpart.

Example from Table 1 to this subpart:

Manual Resin Application, 35 percent HAP resin, VSE Factor of 0.45

HAP Emissions with vapor suppresants = ((0.286 × %HAP)−0.0529) × 2000 × (1 –(0.5 × VSE factor))

HAP Emissions with vapor suppresants = ((0.286 × .35)−0.0529) × 2000 × (1−(0.5 × .45))

HAP Emissions with vapor suppresants = 73 pounds of HAP emissions per ton of resin.

13. Method Performance

13.1 Bias:

The bias of this test method has not been determined.

13.2 Precision Testing

13.2.1 Subsequent to the initial development of this test protocol by the Composites Fabricators Association, a series of tests were conducted in three different laboratory facilities. The purpose of this round robin testing was to verify the precision of the test method in various laboratories. Each laboratory received a sample of an orthophthalic polyester resin from the same production batch, containing 48 per cent styrene by weight. Each testing site was also provided with the same vapor suppressant additive. The suppressant manufacturer specified the percentage level of suppressant additive. The resin manufacturer specified the type and level of initiator required to produce a 20 minute gel time. The target glass content was 30 percent by weight.

13.2.2 Each laboratory independently conducted the VSE test according to this method. A summary of the results is included in Table 13.1.

Table 13.1—Round Robin Testing Results

	Test Lab 1		**Test Lab 2**		**Test Lab 3**	
	NVS	**VS**	**NVS**	**S**	**NVS**	**VS**
Average percent WT Loss	4.24	1.15	4.69	1.84	5.73	1.61
Standard Deviation	0.095	0.060	0.002	0.002	0.020	0.003
VSE Factor		0.730		0.607		0.720

13.3 Comparison to EPA Reference Methods This test has no corresponding EPA reference method.

14. Pollution Prevention

The sample size used in this method produces a negligible emission of HAP, and has an insignificant impact upon the atmosphere.

15. Waste Management

The spent and waste materials generated during this test are disposed according to required facility procedures, and waste management recommendations on the corresponding material safety data sheets.

16. References and footnotes

16.1 Footnotes:

[1] Balance Enclosure—The purpose of the balance enclosure is to prevent localized airflow from adversely affecting the laboratory balance. The enclosure may be a simple three-sided box with a top and an open face. The configuration of the enclosure is secondary to the purpose of providing a stable and steady balance reading, free from the effects of airflow, for accurate measurements. The enclosure can be fabricated locally. A typical enclosure is shown in Figure 17.1.

[2] Laboratory Balance—Ohaus Precision Standard Series P/N TS400D or equivalent—Paul N. Gardner Co. 316 NE 1st St. Pompano Beach, FL 33060 or other suppliers.

[3] Stop Watch—Local supply.

[4] Thermometer—Mercury thermometer—ASTM No. 21C or equivalent; Digital thermometer—P/N TH–33033 or equivalent—Paul N. Gardner Co. 316 NE 1st St. Pompano Beach, FL 33060 or other suppliers.

[5] Aluminum Pan—Local supply.

[6] Mylar—Local supply.

[7] Double Sided Tape—3M Double Stick Tape or equivalent, local supply.

[8] Laboratory Beakers—250 to 400ml capacity—Local laboratory supply.

[9] Eye Dropper or Pipette—Local laboratory supply.

[10] Disposable Resin Application Roller Source—Wire Handle Roller P/N 205–050–300 or Plastic Handle Roller P/N 215–050–300 or equivalent; ES Manufacturing Inc., 2500 26st Ave. North, St. Petersburg, FL 33713, *www.esmfg.com,* or other source. Refer to Figure 17.3.

[11] Hygrometer or Psychrometer—Model# THWD–1, or equivalent—Part # 975765 by Amprobe Instrument, 630 Merrick Road, P.O. Box 329, Lynbrook, NY 11563, 516–593–5600

[12] Insulating Board (Teflon, cardboard, foam board etc.)—Local supply.

[13] Laboratory Balance With Digital Output—Ohaus Precision Standard Series P/N TS120S or equivalent—Paul N. Gardner Co. 316 NE 1st St. Pompano Beach, FL 33060 or other suppliers.

[14] Chopped Strand Mat—1.5 oz/ft^2 Sources: Owens Corning Fiberglas—Fiberglas M–723; PPG Industries—ABM HTX; Vetrotex America—M–127 or equivalent.

[15] Certificate of Analysis: Resin gel time, as recorded on the resin certificate of analysis, is measured using a laboratory standard gel time procedure. This procedure typically uses a 100 gram cup sample at 77 °F (25 °C), a specific type of initiator and a specified percentage.

[16] Roll-out times may vary with resin viscosity or resin additive. The important aspect of this step is to produce the same roll-out time for both the suppressed and non-suppressed samples.

[17] While this test can be used with filled resin systems, the test is not designed to determine the effect of the filler on emissions, but rather to measure the effect of the suppressant additive in the resin system. When evaluating a filled system both the non-vapor suppressed and vapor suppressed samples should be formulated with the same type and level of filler.

16.2 References

1. Phase 1—Baseline Study Hand Lay-up, CFA, 1996

2. CFA Vapor Suppressant Effectiveness Test Development, 4/3/98, correspondence with Dr. Madeleine Strum, EPA, OAQPS

3. CFA Vapor Suppressant Effectiveness Screening Tests, 4/4/98

4. Styrene Suppressant Systems Study, Reichhold Chemical, 11/30/98

5. Evaluation of the CFA's New Proposed Vapor Suppressant Effectiveness Test, Technical Service Request #: ED–01–98, BYK Chemie, 6/3/98

6. Second Evaluation of the CFA's New Proposed Vapor Suppressant Effectiveness Test, Technical Service Request #: ED–02–98, BYK Chemie, 1/26/99

17. Data Sheets and Figures

17.1 This data sheet, or a similar data sheet, is used to record the test data for filled, unfilled, suppressed and non-suppressed tests. If additional time is required, the data sheet may be extended.

Table 17.1 Test Data Sheet

Test Number			Test Type		
			VS (_____)		NVS (____)
Resin			Filled (____)		Unfilled (___)
Initiator				Initiator, %	_____
Vapor Suppressant				VS, %	_____
Weight of 2 layers of glass, g	_____	Weight of 1st glass layer, g	_____	Weight of 2nd glass layer, g	_____
Initial Resin Weight, (g)			Time (Min.)	Weight g	Temp °F
Glass content, (%)			55		
Initial Temperature °F:			60		
Initial Humidity %			65		
Resin Initiator Level, %			70		
Resin gel time, (min.)			75		
Resin filler content, %			80		
Roll out time, (min.)			85		
Time, (min.)	Weight, g	Temp, °F	90		

Initial			95		
			100		
0			105		
5			110		
10			115		
15			120		
20			125		
25			130		
30			135		
35			140		
40			145		
45			150		
50			155		
Final Time, min.	Final Weight, g.		Final Temp, °F	Final Humidity, %	

17.2 Data Acceptance Criteria Worksheet:

The following worksheet is used to determine the quality of collected data (*i.e.* insure the data collected all meets acceptance criteria)

Table 17.2—Data Acceptance Criteria Worksheet

Test No.	Temperature			Laminate roll out time, min	Relative humidity, %		Resin weight, (g)	Glass content, %	Resin distribution	Meets criteria Y/N
	Min	Max	Delta		Initial	Final				
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

11										
12										
Average										
Criteria	±2 °F	±10% of Average	±15 of Average	±15 of Average	±10% of Avg.	±10% of Avg.	< 1/2 inch off mat	All Y		

17.3 VSE Factor Calculation

Table 17.3—Calculations Worksheet

Vapor suppressed		**Non-vapor suppressed**	
Test #	**% Weight loss**	**Test #**	**% Weight loss**
Average Weight Loss			
VSE Factor			

VSE Factor = 1—(% Average Weight $Loss_{VS}$/ % Average Weight $Loss_{NVS}$)

17.4 Figures

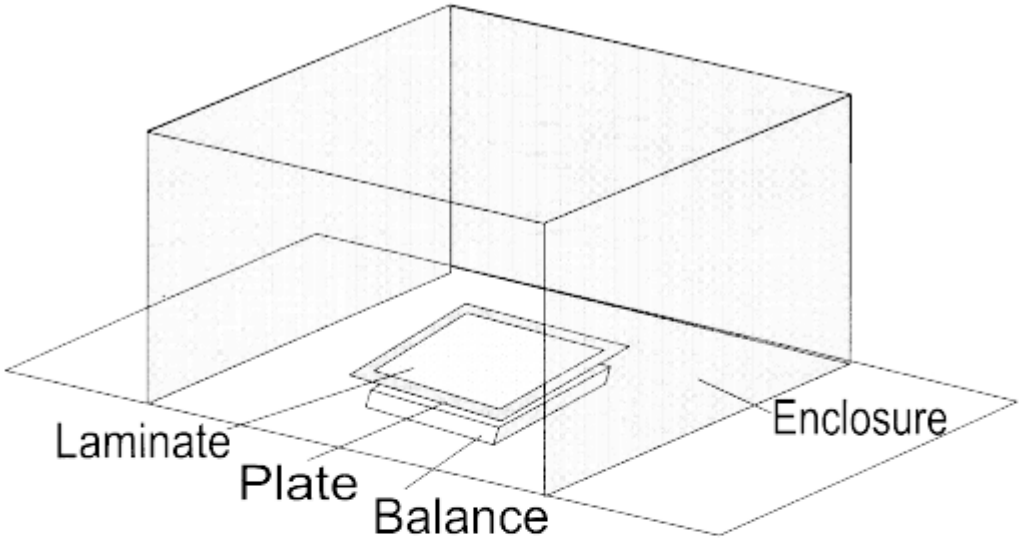


Figure 17.1. Typical Balance Enclosure

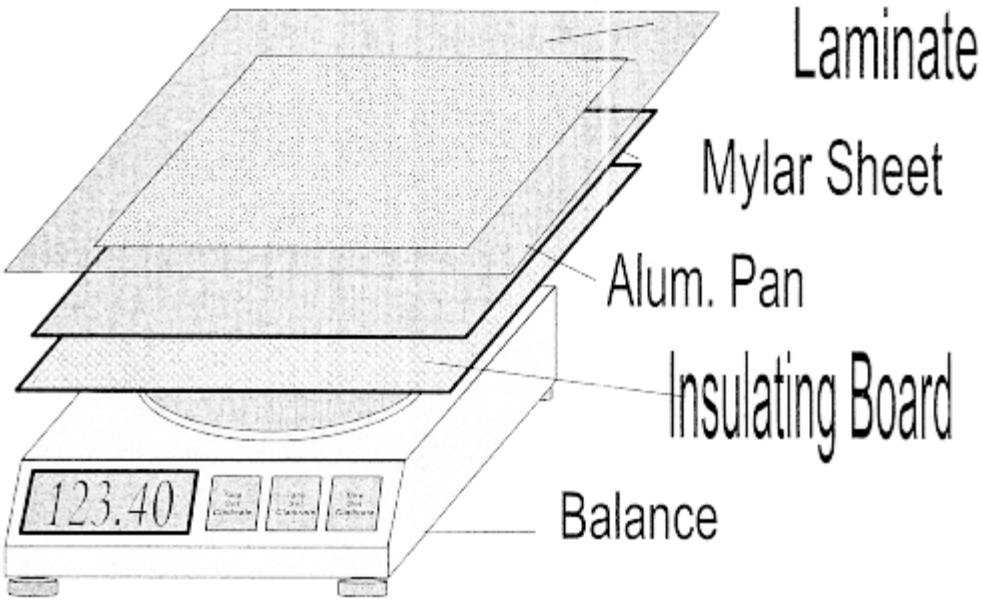
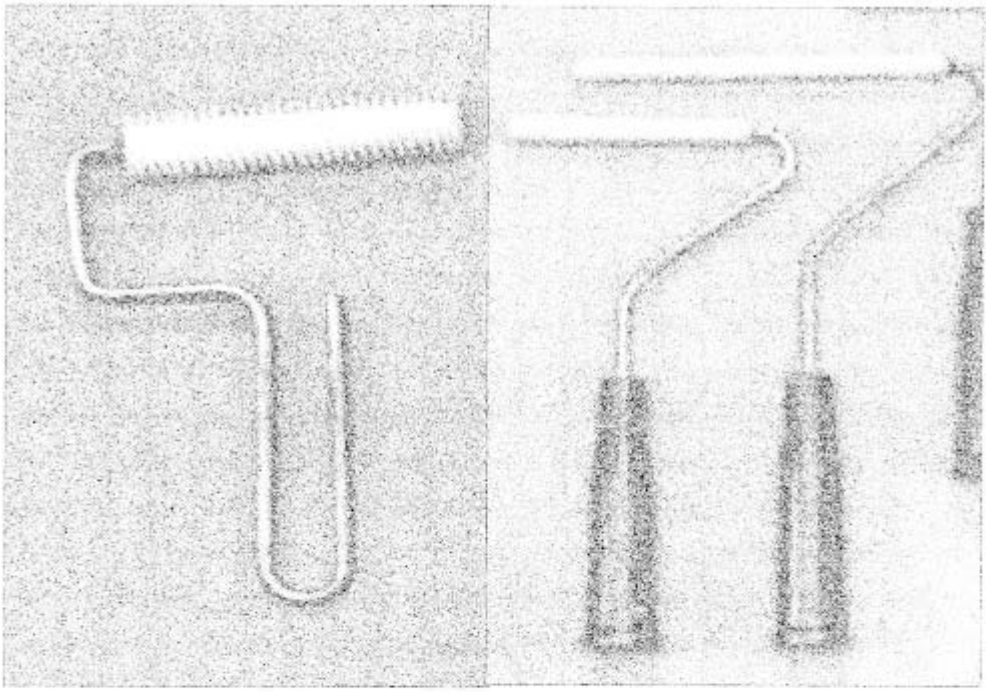


Figure 17.2. Scale, Plate, Insulating Board, Mylar, Laminate Order



FRP Rollers

Figure 17.5. Typical FRP Rollers

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a
Part 70 Significant Source Modification and Permit Renewal

Source Description and Location

Source Name:	Arrowhead Plastic Engineering, Inc.
Source Location:	2909 South Hoyt Avenue, Muncie, Indiana 47302
County:	Delaware
SIC Code:	3089
Significant Source Modification No.:	035-29436-00046
Permit Renewal No.:	T035-29415-00046
Permit Reviewer:	Mehul Sura

Public Notice Information

On December 20, 2010, the Office of Air Quality (OAQ) had a notice published in the *Muncie Star Press*, Muncie, Indiana, stating that IDEM had received an application from Arrowhead Plastic Engineering, Inc., located at 2909 South Hoyt Avenue, Muncie, Indiana 47302 for a significant source modification and renewal of its Part 70 Operating Permit. The notice also stated that OAQ proposed to issue this significant source modification and renewal and provided information on how the public could review the proposed significant source modification, renewal and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this significant source modification should be issued as proposed.

On December 28, 2010, Arrowhead Plastic Engineering, Inc. submitted a comment on the proposed source modification and permit renewal which is listed below. The comment is followed by an IDEM response.

Comment 1: Controlled spraying was developed to help operators reduce styrene emissions. The training portion of American Composites Manufacturers Association (ACMA) Controlled Spraying Handbook (Version 3.2c – March 2004) clearly demonstrates that it was developed for hand-spraying. We feel that Controlled Spraying is ideal for facilities like ours and we should be allowed to utilize the emission factors related to the practice.

Response 1: No changes have been made in the proposed permit. The reasons are described below.

The controlled spray method described in the ACMA manual includes the following elements:

a) Operation of the spray gun at the lowest fluid tip pressure, which produces an acceptable spray pattern.

b) Operator training that teaches proper spray gun handling techniques.

c) The use of close containment mold flanges to minimize overspray off the mold.

There are no requirements in the permit to include operation of the manual spray gun at an acceptable fluid tip pressure and the use of close containment mold flanges. Although the source can set the spray gun at the lowest fluid tip pressure, it would need extensive record keeping to log when the spray gun is set at the lowest tip pressure.

Moreover, whether or not the source is implementing a controlled spray technique as described in the ACMA manual would be based on an evaluation by the inspector which only occurs occasionally during routine inspections. Evaluation of controlled spray effectiveness is subjective because the evaluation of controlled spray could vary from one inspector to another.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source Modification and Part 70 Operating Permit Renewal

Source Background and Description

Source Name:	Arrowhead Plastic Engineering, Inc.
Source Location:	2909 South Hoyt Avenue, Muncie, Indiana 47302
County:	Delaware
SIC Code:	3089
Significant Source Modification No.:	035-29436-00046
Permit Renewal No.:	T035-29415-00046
Permit Reviewer:	Mehul Sura

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Arrowhead Plastic Engineering, Inc. relating to the operation of a fiberglass parts manufacturing source. On June 29, 2010, Arrowhead Plastic Engineering, Inc. submitted an application to the OAQ requesting to renew its operating permit and reevaluate its existing 326 IAC 8-1-6 BACT determination. Arrowhead Plastic Engineering, Inc. was issued its first Part 70 Operating Permit Renewal T035-19802-00046 on April 3, 2006.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

(a) One (1) Gel coat/Resin molding booth, identified as EU-01A, constructed in 1987, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 1.

(b) One (1) Gel coat/Resin molding booth, identified EU-01B, constructed in 1985, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 2.

(c) Two (2) Gel coat/Resin molding booths, identified as EU-01C and EU-01G, constructed in 1994 and 1985, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 4.

(e) One (1) Gel coat/Resin molding booth, identified as EU-01E, constructed in 1985, equipped with dry filters and with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat.

(f) One (1) Gel coat/Resin molding booth, identified as EU-01F, constructed in 1977, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat equipped with dry filters and venting to Stacks 5 and 6.

(g) Three (3) Gel coat/Resin molding booths, identified as EU-01H, EU-01I, and EU-01J, constructed in 1988, 1988, and 1977, respectively, each with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat and equipped with dry filters. Booth EU-01I is venting to Stack SV 8a and 8b, booth EU-01H is venting to stack SV9a and 9b, and booth EU-01J is venting to Stack SV10.

(h) One (1) Gel coat/Resin molding booth, identified as EU-01L, constructed in 1994, with maximum capacity of 150 pounds per hour (lb/hr) of resin/gel coat, equipped with dry filters and venting to Stack 13.

Open molding booths listed above use mechanical atomized, mechanical non-atomized, manual and Gel coat application processes.

(i) One (1) Resin transfer molding (RTM), identified as, EU-01D, constructed in 1984, equipped with dry filters, with maximum capacity of molding 300 lb/hr of resin.

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit

There are no unpermitted emission units operating at this source during this review process.

Emission Units and Pollution Control Equipment Removed From the Source

No emission unit or Pollution Control Equipment has been removed from the source since issuance of the Part 70 Permit T035-19802-00046, issued on April 3, 2006.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.

(1) One (1) natural gas fired make-up unit rated at 2.754 MMBtu/hr.

(2) Twelve (12) natural gas fired furnaces, with each one rated at 0.125 MMBtu/hr.

(3) Three (3) natural gas fired furnaces, with each one rated at 0.10 MMBtu/hr.

(4) One (1) natural gas fired furnace rated at 0.12 MMBtu/hr.

(5) One (1) natural gas fired furnace rated at 0.06 MMBtu/hr.

(b) Combustion source flame safety purging on startup.

(c) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.

(d) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.

(e) Cleaners and solvents characterized as follows:

(1) Having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 degrees C (100 ^{O}F) or;

(2) Having a vapor pressure equal to or less than 0.7 kPA; 5mm Hg; or 0.1 psi measured at 20 ^{O}C (68 ^{O}F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.

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

(g) Closed loop heating and cooling systems.

(h) Infrared cure equipment.

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

(j) Water based adhesives that are less than or equal to 5% by volume of VOCs, excluding HAPs.

(k) 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.

(l) 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.

(m) Other categories with emissions below insignificant thresholds (i.e. less than 5 pounds per hour particulates and less than 3 pounds per hour VOC).

(1) Main grinding booth potential to emit equals 0.22 pounds per hour of PM/PM_{10} and 5.18 pounds per day of PM/PM_{10}.

(2) Secondary grinding area potential to emit equals 0.07 pounds per hour of PM/PM_{10} and 1.70 pounds per day of PM/PM_{10}.

Note: This grinding area was identified as Thermal Care grinding area in the previous approvals.

Proposed Modification

On June 29, 2010, the Office of Air Quality (OAQ) received an application from Arrowhead Plastic Engineering, Inc., located at 2909 South Hoyt Avenue, Muncie, Indiana, requesting changes in the 326 IAC 8-1-6 BACT requirements specified in the permit for booths EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I. These BACT requirements were established in CP No. 035-8244-00046, issued on November 12, 1998. Arrowhead Plastic Engineering, Inc. has requested the following changes in these BACT requirements:

(a) Add flexibility to use resin and gel coat, both, at all the BACT-subject booths (several BACT-subject booths were permitted to use either resin or gel coat, but not both).

(b) Remove the restriction which requires hand lay-up application for 30-40% products.

(c) Add flexibility to utilize non-atomized spray gun for resin/fiberglass spray application.

(d) Increase throughput capacity of each BACT-subject booth (for details of revised throughput capacity, please refer to emission unit descriptions in 'Permitted Emission Units and Pollution Control Equipment' section of the TSD).

The existing 326 IAC 8-1-6 VOC BACT requirements for EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I will be revised to include the proposed modification.

Existing Approvals

Since the issuance of the first Part 70 Operating Permit Renewal No. T035-19802-00046 on April 3, 2006, no additional approvals have been issued to the source.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

County Attainment Status

The source is located in Delaware County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Attainment effective January 3, 2006, for the Muncie area, including Delaware County, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(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. Delaware County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5
Delaware County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM_{10} emissions as a surrogate for $PM_{2.5}$ emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants
Delaware County has been classified as attainment or unclassifiable in Indiana for all other 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 of the twenty-eight (28) listed source categories under 326 IAC 2-2 and 326 IAC 2-3, 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 and Emission Offset applicability.

Unrestricted Potential Emissions

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC and PM10,each, is greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met the following:

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)					
Emission Unit	PM (3)	PM10 (3)	SO_2	NOx	VOC	CO
EU-01A	12.08	12.08	-	-	<16(1)	-
EU-01B	12.08	12.08	-	-	<16(1)	-
EU-01C	12.08	12.08	-	-	<16(1)	-
EU-01D	12.08	12.08	-	-	<16(1)	-
EU-01E	12.08	12.08	-	-	<16(1)	-

	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)					
Emission Unit	PM (3)	PM10 (3)	SO_2	NOx	VOC	CO
EU-01F	12.08	12.08	-	-	216.5	-
EU-01G	12.08	12.08	-	-	<16(1)	-
EU-01H	12.08	12.08	-	-	<16(1)	-
EU-01I	12.08	12.08	-	-	<16(1)	-
EU-01J	12.08	12.08	-	-	216.5	-
EU-01L	12.08	12.08	-	-	216.5	-
Insignificant Activities (4)	5.63	1.88	0.01	2.07	0.95	1.74
Total PTE of Entire Source	**126.57**	**126.57**	**0.01**	**2.07**	**249.95(2)**	**1.74**
PSD Major Source Thresholds	**250**	**250**	**250**	**250**	**250**	**250**

(1) VOC PTE is based on the proposed 326 IAC 8-1-6 BACT limit (for details of this BACT limit, please refer to Appendix B – Best Available Control Technology (BACT) Analysis of this TSD).

(2) VOC PTE is based on the existing PSD minor limit (specified below) in the permit (EU-01L has been added in this existing PSD minor limit through this renewal). The Permittee shall continue to comply with this limit.

The total VOC emissions from EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I, EU-01J, and EU-01L shall not exceed 249 tons per twelve (12) consecutive month period.

Compliance with the above limit in conjunction with VOC emissions from the insignificant activities at the source shall limit the VOC emissions from the entire source to less than 250 tons per twelve (12) consecutive month period and render 326 IAC 2-2 not applicable.

(3) PTE of PM/PM10 is based on controls. The permittee is required to operate dry filters under federally enforceable standard 326 IAC 6-3-2(d) for all the resin/gel coat operations (for details, please refer to 326 IAC 6-3 applicability under 'State Rule Applicability - Entire Source' section of this TSD).

(4) Insignificant Activities include the natural gas combustion unit, grinding, and thermal curing operations.

This existing stationary source is not major for PSD because the emissions of each regulated pollutant are less than 250 tons per year, and it is not in one of the twenty-eight (28) listed source categories.

Permit Level Determination – Part 70

This modification is subject to 326 IAC 2-7-10.5(f)(2) (significant source modification) because this modification involves a BACT reopening under 326 IAC 8-1-6.

Permit Level Determination – PSD

This modification to an existing minor stationary source is not major because the emissions increase is less than the PSD major source thresholds. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

None of the VOC emitting emission units at the source is equipped with VOC add-on control. Therefore, CAM requirements do not apply for VOC.

The following table is used to identify the CAM applicability for PM10 for each emission unit:

Emission Unit	Control Device Used (Y/N)	Emission Limitation (Y/N)	Type of Limit	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
EU-01A	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01B	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01C	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01D	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01E	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01F	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01G	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01H	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01I	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01J	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N
EU-01L	Y	Y	326 IAC 6-3	241.5	12.08	100	Y	N

The CAM for PM10 is as follows:

Emission Unit	Control	Parameter	Frequency
EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G,EU-01H, EU-01I, EU-01J, and EU-01L	Dry filters	filter inspection	Daily
		overspray observation	Weekly
		overspray on the rooftops and the nearby ground	Monthly

New Source Performance Standards (NSPS):

There are no NSPS (326 IAC 12 and 40 CFR Part 60) included in the permit due to the proposed modification and renewal for this source.

National Emission Standards for Hazardous Air Pollutants (NESHAPs):

(a) Subpart WWWW—National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production

This source performs reinforced plastic composites production and is a major source of HAPs. Therefore, this source is subject to this NESHAP (which is incorporated by reference as 326 IAC 20-56).

Under this NESHAP, EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I, EU-01J, and EU-01L are considered an existing affected source because the construction of the source commenced prior to August 2, 2001 and the source is not reconstructed.

Non applicable portions of this NESHAP will not be included in the permit. This source is subject to the following portions of Subpart WWWW.

(a) 40 CFR 63.5785(a)

(b) 40 CFR 63.5790

(c) 40 CFR 63.5795

(d) 40 CFR 63.5796

(e) 40 CFR 63.5797

(f) 40 CFR 63.5798

(g) 40 CFR 63.5799

(h) 40 CFR 63.5800

(i) 40 CFR 63.5805 (b)

(j) 40 CFR 63.5810 (a) (b) and (d)

(k) 40 CFR 63.5835(a) and (c)

(l) 40 CFR 63.5840

(m) 40 CFR 63.5860(a)

(n) 40 CFR 63.5895(b) (c) and (d)

(o) 40 CFR 63.5900(a) (2) (3) (4), (b), (c) and (e)

(p) 40 CFR 63.5905

(q) 40 CFR 63.5910(a), (b), (c), (d), (e), (g) and (h)

(r) 40 CFR 63.5915(a), (c) and (d)

(s) 40 CFR 63.5920

(t) 40 CFR 63.5925

(u) 40 CFR 63.5930

(v) 40 CFR 63.5935

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facilities described in this section except when otherwise specified in 40 CFR 63, Subpart WWWW.

(b) Subpart T—National Emissions Standards for Halogenated Solvent Cleaning
The insignificant degreasing operation is not subject to the requirements this NESHAP because halogenated solvents are not being used and the parts are degreased using towels wipes.

(c) There are no other NESHAPs (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit due to the proposed modification and renewal for this source.

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

326 IAC 1-5-2 (Emergency Reduction Plans)
The source is subject to 326 IAC 1-5-2.

326 IAC 2-6 (Emission Reporting)
This source is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7, Part 70. This source is located in Delaware county. The potential to emit of each criteria pollutant is less than 250 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(2), triennial reporting is required.

An emission statement shall be submitted in accordance with the compliance schedule in 326 IAC 2-6-3(b)(2). First emission statement is due by July 1, 2011 and successive emission statements are due every three (3) years thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(2).

326 IAC 6-4 (Fugitive Dust Emissions)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), fugitive dust shall not be visible crossing the boundary or property line of a source. Observances of visible emissions crossing property lines may be refuted by factual data expressed in 326 IAC 6-4-2(1), (2) or (3).

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This rule does not apply to the source because the source-wide fugitive particulate emissions are less than 25 tons per year.

326 IAC 2-2 (Prevention of Significant Deterioration)
The potential to emit of each criteria pollutant is less than 250 tons per year (for details, please refer 'Potential to Emit After Issuance' section of this TSD). Therefore, this rule does not apply.

326 IAC 2-3 (Emission Offset)
This rule no longer applies to the source because Delaware county is now attainment for all criteria pollutants.

326 IAC 2-4.1 (New Source Toxics Control)
Each of the of the emission units at this source is subject to NESHAP, Subpart WWWW or has potential emissions of single HAP and combined HAPs less than 10 and 25 tons per year, respectively. Therefore the requirements of 326 IAC 2-4.1 do not apply to any emission units at the source.

326 IAC 20-25 (Emissions Standards for Reinforced Plastics Composites Fabricating)
This rule has been repealed.

326 IAC 20-56 (Reinforced Plastic Composites Production)
This rule applies to this source because this source is subject to 40 CFR 63, Subpart WWWW.

Pursuant to 326 IAC 20-56-2, the Permittee shall comply with the following requirements:

(a) Each owner or operator shall train all new and existing personnel, including contract personnel, who are involved in resin and gel coat spraying and applications that could result in excess emissions if performed improperly according to the following schedule:

(1) All personnel hired shall be trained within thirty (30) days of hiring.

(2) To ensure training goals listed in paragraph (b) below are maintained, all personnel shall be given refresher training annually.

(3) Personnel who have been trained by another owner or operator subject to this rule are exempt from paragraph (a)(1), if written documentation that the employee's training is current is provided to the new employer.

(b) The lesson plans shall cover, for the initial and refresher training, at a minimum, all of the following topics:

(1) Appropriate application techniques.

(2) Appropriate equipment cleaning procedures.

(3) Appropriate equipment setup and adjustment to minimize material usage and overspray.

(c) The owner or operator shall maintain the following training records on site and make them available for inspection and review:

(1) A copy of the current training program.

(2) A list of the following:

(A) All current personnel, by name, that are required to be trained.

(B) The date the person was trained or date of most recent refresher training, whichever is later.

(d) Records of prior training programs and former personnel are not required to be maintained.

326 IAC 8-6 (Organic Solvent Emission Limitations)
This rule does not apply to this source because it was constructed before October 7, 1974, the applicability date for this rule.

State Rule Applicability – Individual Facilities

326 IAC 8-1-6 (New facilities; general reduction requirements)

(a) Based on the detailed BACT analysis in Appendix B, the existing 326 IAC 8-1-6 VOC BACT requirements for EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I have been revised as follows (deleted language appears as strikethroughs and new language appears in **bold)**:

D.1.2 Best Available Control Technology (BACT) and Volatile Organic Compounds (VOCs) [326 IAC 8-1-6]

~~Pursuant to 326 IAC 8-1-6 and CP No. 035-8244-00046, issued on November 12, 1998, the Best Available Control Technology (BACT) shall consist of the following for the one (1) Gel coat/Resin booth, identified as EU-01A, one(1) Resin lay-up booth, identified as Blue Bird EU-01B, two (2) Gel Coat booths, identified as EU-01C and EU-01G, one (1) Resin transfer molding (RTM), identified as EU-01D, one (1) mold repair, identified as EU-01E, two (2) chop booths, identified as EU-01H and EU-01I:~~

Pursuant to 326 IAC 8-1-6 and CP No. 035-8244-00046, issued on November 12, 1998, and revised through SSM No. 035-29415-00046, the BACT for the EU-01A, EU-01B, EU-01C, EU-01G, EU-01D, EU-01E, EU-01H and EU-01I shall be as follows:

(a) ~~Use of resins, gel coats and solvents shall be limited such that the potential to emit (PTE) volatile organic compounds from resins, gel coats and solvents only shall be limited to 179.5 tons per twelve (12) consecutive months. Compliance with this limit shall be determined based on the emission factors approved by IDEM, OAQ: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, July 2002.~~
The VOC emissions from each booth shall not exceed 16 tons per twelve (12) consecutive month period.

(b) Compliance with all applicable requirements of 40 CFR 63, Subpart WWWW (for details of these requirements, please refer NESHAP, Subpart WWWW appliacbilty in 'Federal Rule Applicability' section of the TSD).

(c) Compliance with the requirements of 326 IAC 20-56-2 (Reinforced Plastic Composites Production) (for details of these requirements, please refer 326 IAC 20-56 (Reinforced Plastic Composites Production) appliacbilty in 'State Rule Applicability - Entire Source' section of the TSD).

(~~b~~**d**) Acetone **or other non-VOC containing materials** shall be utilized for cleaning purposes.

(c) Lower styrene content resins shall be utilized from the lamination areas for hand lay up operations.

~~(d) Air assisted airless spray equipment shall be used for the lamination and gel coat applications to reduce material usage. Hand lay up shall be~~

~~used for approximately 30-40% of the products produced, and air atomized cup guns shall be used for repairs of gel coat in the Final Finish area.~~

~~(e) Resin Transfer Molding (RTM) process shall be used for one part, which is the production of firemen's helmet.~~

~~(f) The application equipment operators shall be instructed and trained on the methods and practices utilized to minimize the overspray emitted on the floor and onto the air filters.~~

~~(g) The overspray shall be minimized by spraying as close as practical into the molds.~~

~~(he) Storage containers used to store VOC and/or HAPs containing material shall be kept tightly covered when not in use, and~~

~~(if) Other solvent containers used to transport solvent from drums to work stations be closed containers having soft gasketed spring-loaded closures.~~

~~The source shall comply with the Best Available Control Technology (BACT) requirements under 326 IAC 8-1-6 by satisfying the conditions described above.~~

(b) The potential uncontrolled VOC emissions from EU-01L were less than 25 tons per year when it was installed in 1994. The potentail uncontrolled VOC emissions from EU-01L is now greater than 25 tons per year due to the proposed modification; however, this emission unit has 326 IAC 20-56 (Reinforced Plastic Composites Production) requirements specified in the permit. Therefore, EU-01L is not subject to 326 IAC 8-1-6.

(c) EU-01F is not subject to 326 IAC 8-1-6 because it was constructed before 1980. There are no limitations and standards specified in 326 IAC 8 for this type of operation.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) for surface coating

(a) Pursuant to 326 IAC 6-3-2(d), particulate from EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I and EU-01J and EU-01L shall be controlled by dry particulate filters, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

(b) Pursuant to 326 IAC 6-3-1(b)(14), the insignificant activities including main grinding booth and Secondary grinding grinding are exempt from the requirements of 326 IAC 6-3-2 because each of these operations has potential emissions less than 0.551 pounds per hour.

(c) Pursuant to 326 IAC 6-3-1(b)(9), the welding operations listed under insignificant activities are exempt from the requirements of 326 IAC 6-3-2, because each welding operation consumes less than 625 pounds of rod or wire per day.

326 IAC 8-3 (Organic Solvent Degreasing Operations)

The degreasing operation at this source is not subject to this rule because VOC emissions from this operation are less than 15 pounds per day.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate

compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance determination requirement applicable to this source is as follows:

(a) In order to comply with the PSD minor limit specified in 'Potential to Emit After Issuance' section of this TSD and 326 IAC 8-1-6 BACT limit (16 tpy for each BACT BACT-subject booth) specfied in Appendix B of this TSD, the Permittee shall determine VOC content and usage of the resin, gel coat and mold cleaning material using methods specified in 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the “as supplied” and “as applied” VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

(b) In order to comply with the PSD minor limit specified in 'Permit Level Determination – PSD' section of this TSD and 326 IAC 8-1-6 BACT limit (16 tpy for each BACT BACT-subject booth) specfied in Appendix B of this TSD, the VOC emissions shall be determined as follows:

VOC emissions from each of the booths from EU-01A, EU-01B, EU-01C, EU-01E, EU-01F, EU-01G,EU-01H, EU-01I and EU-01J shall be determined as follows:

$$\text{VOC emissions (tons/month)} = \sum_{i=1}^{i=n} ((A_i * B_i) / 2000) * (UEF_i / 2000) + D$$

here: n = no. of coatings used during the month
A_i = Density (lb/gal resin or gel)
Bi = Gallons of resin or gel used per month
UEFi = Unified Emission Factor (UEF) for Open Molding of Composites (lb monomer/ton resin or gel)
i = type of resin or gel
2000 = conversion factor (lbs/ton)
D = VOC input due to solvent usage (tons/month)

'Controlled Spray Method' vs. 'Without Controlled Spray Method'

The Permitee intends to use 'Controlled Spray Method' for some period during production. The VOC emissions from 'Controlled Spray Method' are lower than the VOC emissions from 'Without Controlled Spray Method'. The Permittee did not provide IDEM for review the details on how the 'Controlled Spray Method' would be achieved. Therefore, it is impractical for IDEM to enforce the requirement of using 'Controlled Spray Method'. The Permittee may voluntarily use 'Controlled Spray Method'; however, for any spray application method, the VOC/HAPs emission factors used in the above equation shall be applied as described (i) and (ii) below.

(i) Resin Application
The emission factor representing 'Mechanical Atomized' application in the UEF table shall be used for any atomized resin spray application method.

(ii) Gel Coat Application
The emission factor representing 'Gel Coat Application' in the UEF table shall be used for any atomized gel coat spray application method.

Non-atomized application method
The Permittee also intends to use non-atomized resin and gel coat application method. The VOC/HAP emission factors used in the above equation shall be applied as described (i) and (ii) below when using non-atomized application method.

(i) Resin Application
The emission factor representing 'Mechanical Non-Atomized' application in the UEF table shall be used for non-atomized resin application method.

(ii) Gel Coat Application
The emission factor representing 'Gel Coat Non-Atomized' application in the UEF table shall be used for non-atomized gel coat application method.

VOC emissions from EU-01D shall be determined as follows:

$$\text{VOC emissions (tons/month)} = \sum_{i=1}^{i=n} ((A_i * B_i * C_i) * (EF / 2000)) + \text{VOC input due to Catalyst Usage (tons/month) * Flash Off value} + \text{VOC input due to release agent (tons/month)}$$

here: n = number of coatings used during the month
Ai = Density (lb /gal resin or gel)
Bi = Weight % monomer
Ci = Gallons of resin or gel used per month
EF = Emission Factor for Close Molding of Composites
(3 lb monomer emitted/100 lb monomer used)
2000 = conversion factor (lbs/ton)
Flash Off value=0.06

The compliance monitoring requirements applicable to this source are as follows:

Emission Unit	Control	Parameter	Frequency
EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01F, EU-01G,EU-01H, EU-01I, EU-01J, and EU-01L	Dry filters	filter inspection	Daily
		overspray observation	Weekly
		overspray on the rooftops and the nearby ground	Monthly

The above compliance monitoring is required to ensure that the filters operate properly in order to comply with 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) and 326 IAC 2-7 (Part 70).

Appendices

Appendix A - Emission Calculations

Appendix B - 326 IAC 8-1-6 BACT analysis

Appendix C - Cost Analysis for Regenerative Thermal Oxidizer, Zeolite Concentrator with Catalytic Oxidizer and Recuperative Thermal Oxidizer

Recommendation

The staff recommends to the Commissioner that the Significant Source Modification and Part 70 Operating Permit Renewal be approved. This recommendation is based on the following facts and conditions:

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 June 29, 2010. Additional information was received on September 9, 2010.

Conclusion

The operation of this fiberglass parts manufacturing source shall be subject to the conditions of the attached Part 70 Significant Source Modification No. 035-29436-00046 and Operating Permit Renewal No. 035-29415-00046.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Mehul Sura at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-6868 or toll free at 1-800-451-6027 extension 3-6868.

(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's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emissions Calculations
Potential Uncontrolled (tons/year) Summary
Company Name: Arrowhead Plastic Engineering, Inc.
Address City IN Zip: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Permit Renewal No.: T035-29415-00046
Significant Source Modification No.: T035-29436-00046
Permit Reviewer: Mehul Sura
Date: 10/6/2010

Potential Uncontrolled (tons/year)

Emission Unit	PM	PM10	SO_2	NOx	VOC	CO	Single HAP (styrene)	Total HAPs
EU-01A	241.5	241.5		-	216.5	-	216.5	216.5
EU-01B	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01C	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01E	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01F	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01G	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01H	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01I	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01J	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01L	241.5	241.5	-	-	216.5	-	216.5	216.5
EU-01D	-	-	-	-	62.0	-	62.0	62.0
Insignificant Activities	5.6	1.9	0.0	2.1	1.0	1.7	-	-
Total	**2421.1**	**2417.3**	**0.0**	**2.1**	**2227.6**	**1.7**	**2226.7**	**2226.7**

Appendix A: Emissions Calculations
VOC/HAPs and Particulate
From Gel and Resin Coating Operations
Reinforced Plastics and Composites Fiberglass Processes

Company Name: Arrowhead Plastic Engineering, Inc.
Address City IN Zip: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Permit Renewal No.: T035-29415-00046
Significant Source Modification No.: T035-29436-00046
Permit Reviewer: Mehul Sura
Date: 10/6/2010

Resin Application at each of the following open molding operations: EU-01A, EU-01B, EU-01C, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I, EU-01J and EU-01L

Application Type	System Name	Material Product Name	Material type	Maximum rated capacity (lbs/hr)	% VOC	UEF emission factor (lbs /ton)	VOC PTE (tpy)	PM PTE (tpy)	Transfer Efficiency	Controlled PM (tpy)
Mechanical Atomized	INDy X /INDy X 2/ LPA 2	Tooling Neutral - 945-X-200	Styrene	150	44%	268	88.0	91.98	75%	4.6
Mechanical Atomized	INDy X /INDy X 2/ LPA 2	Max guard Caterpiller yellow	MMA	150	9%	135	44.3	149.47	75%	7.5
Manual		FRP-NC Frekote Release	release agent	0.135	100%	NA	0.6	0.00	100%	0
Mechanical Atomized	G300-6	Luperox	catalyst	1.56	98%	0.37	2.48	0.03	75%	0.002
Worst-case PTE							**135.4**	**241.5**		**12.07**

Gel coat Application at each of the following open molding operations: EU-01A, EU-01B, EU-01C, EU-01E, EU-01F, EU-01G, EU-01H, EU-01I, EU-01J and EU-01L

Application Type	System Name	Material Product Name	Material type	Maximum rated capacity (lbs/hr)	% Styrene	UEF emission factor (lbs /ton)	PTE (tpy)	PM PTE (tpy)	Transfer Efficiency	Controlled PM (tpy)
Gel coat Application	INDy X external mix gun	Tooling Neutral - 945-X-200	styrene	150	44%	522	171.5	91.98	75%	4.6
Gel coat Application	INDy X 2 color external mix gun	Tooling Neutral - 945-X-200	styrene	150	44%	522	171.5	91.98	75%	4.6
Gel coat Application	LPA 2	Tooling Neutral - 945-X-200	styrene	150	44%	522	171.5	91.98	75%	4.6
Gel coat Application	G300-6	Tooling Neutral - 945-X-200	styrene	51.97	44%	522	171.5	31.87	75%	1.6
Gel coat Application	INDy X /INDy X 2/ LPA 2	Max guard Caterpiller yellow	Methyl Methacrylate	150	9%	135	44.3	149.47	75%	7.5
Gel coat Application	G300-6	Max guard Caterpiller yellow	Methyl Methacrylate	51.97	9%	135	44.3	51.79	75%	2.6
Mechanical Atomized	INDy X /INDy X 2/ LPA 2	Luperox	catalyst	4.5	98%	0.37	0.1	0.10	75%	0.005
Mechanical Atomized	G300-6	Luperox	catalyst	1.56	98%	0.37	0.0	0.03	75%	0.002
Manual		FRP-NC Frekote Release	release agent	0.13	100%	NA	0.6	0.00	75%	0.0
							216.5	**241.5**		**12.08**

Chop booths: EU-01H, EU-01I, and EU-01J

Application Type	System Name	Material Product Name	Material type	Maximum rated capacity (lbs/hr)	% VOC	UEF emission factor (lbs /ton)	VOC PTE (tpy)	PM PTE (tpy)	Transfer Efficiency	Controlled PM (tpy)
Mechanical Non-atomized	Magnum Venus FIT System	Aropol 7241T-15 Tooling resin	styrene	600	50	124	162.9	0.00	100%	0.0
Manual		Aropol 7241T-15 Tooling resin	styrene	65	50	180	25.6	0.00	100%	0.0
Mechanical Non-atomized	Magnum Venus FIT System	Luperox	catalyst	12	98	0.12	0.0	0.00	100%	0.0
Manual		Luperox	catalyst	1.3	98	0.18	0.0	0.00	100%	0.0
Manual		Bondo Duraglas	filler - Bondo	0.11	20	-	-			
							162.9	**0.0**		
Worst-case PTE							**216.5**	**241.5**		**12.1**

Booth EU-01D - Resin Transfer Molding (RTM)

Application Type	System Name	Material Product Name	Material	Maximum rated capacity (lbs/hr)	% VOC	AP-42 emission factor (%)	PTE (tpy)
RTM	Glascraft RTM system	Aropol 7241T-15 Tooling resin	styrene	300	50	3%	19.71
RTM	Glascraft RTM system	Luperox	catalyst	9	98	0.06%	0.39
manual		FRP-NC Frekote Release	release agent	0.13	100	NA	0.57
RTM	Glascraft RTM system	Luperox	catalyst	9	98	0.06%	0.39
manual		FRP-NC Frekote Release	release agent	0.13	100	NA	0.57
							20.7
						Facility has 3 RTM systems that can run simultaneously	62.0

METHODOLOGY
Calculation are based on highest styrene containing resin and gel coat material.
Emission Factors for open molding Resin and Gel coat operations are from the, "CFA Unified Emission Factors for Open Molding of Composites, revised on 10/13/2009".
Emission factors for Resin Transfer Molding operations are from AP 42 - 4.4 Polyester Resin Plastic Products Fabrication.
Emission from catalyst is determined by finding vapor pressure ratio of catalyst VOC to styrene and then multiplying this ratio with UEF emission factor.

Open Molding
Potential VOC (tons/yr) for resins or gels = [Maximum usage (lb/hr) * UEF (lb styrene/ton material) * 8760 (hrs/yr) * 1 ton material/2000 lbs material]*1 ton material/2000 lbs material
Potential PM (ton/year) = Maximum Usage (lb/hr)*(1 - Weight % monomer or VOC) * (1 - transfer efficiency) * 8760 (hrs/yr) * (1 ton/2000 lb)

Close Molding
Potential VOC Pounds per Hour = Maximum usage (lb/hr) *Weight % of Monomer*Emission factor (weight % of starting monomer emitted)
Potential VOC Tons per Year = Potential VOC Pounds per Hour * (8760 hr/yr) * (1 ton / 2000 lbs)
PM Potential Tons per Year = Maximum Usage (lb/hour)*(1 - Weight % Volatiles/Monomer)*(1 - Transfer efficiency)*(8760 hr/yr)*(1 ton / 2000 lbs)

Appendix A: Emissions Calculations
Grinding Operations

Company Name: Arrowhead Plastic Engineering, Inc.
Address City IN Zip: 2909 South Hoyt Avenue, Muncie, Indiana 47302
Permit Renewal No.: T035-29415-00046
Significant Source Modification No.: T035-29436-00046
Permit Reviewer: Mehul Sura
Date: 10/6/2010

Insignificant Activity

Operation	Amount of Dust Generated	% PM *	% PM10 *	Potential PM Emissions	Potential PM10 Emissions
	(lb/hr)	(%)	(%)	(tons/yr)	(tons/yr)
Grinding	3.5	13.13	6.17	2.013	0.946
Thermal Care	4.5	15.80	1.57	3.114	0.309
			Total PM Emission Rate:	5.13	1.26

Methodology:

Potential emissions before controls (tons/yr) = (lb sawdust / hour) (8760 hr / yr) (ton / 2000 lb)
* Percent fraction of PM and PM10 is provided by the source based on the Sieve Analysis conducted on dust collected.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Arrowhead Plastic Engineering, Inc.**
Address City IN Zip: **2909 South Hoyt Avenue, Muncie, Indiana 47302**
Permit Renewal No.: **T035-29415-00046**
Significant Source Modification No.: **T035-29436-00046**
Permit Reviewer: **Mehul Sura**
Date: **10/6/2010**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
4.7	41.5

Facilities	**MMBtu/hr**
One (1) natural gas fired make up air unit rated at 2.754 MMBtu/hr.	2.754
Twelve (12) natural gas fired furnaces, with each one rated at 0.125 MMBtu/hr.	1.5
Three (3) natural gas fired furnaces, with each one rated at 0.10 MMBtu/hr.	0.3
One (1) natural gas fired furnace rated at 0.12 MMBtu/hr.	0.12
One (1) natural gas fired furnace rated at 0.06 MMBtu/hr.	0.06
Total	**4.734**

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.04	0.16	0.01	2.07	0.11	1.74

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

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/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

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	4.354E-05	2.488E-05	1.555E-03	3.732E-02	7.050E-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	1.037E-05	2.281E-05	2.903E-05	7.879E-06	4.354E-05

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Indiana Department of Environmental Management
Office of Air Quality

Appendix B – Best Available Control Technology (BACT) Analysis
Significant Source Modification No.: 035-29436-00046
Part 70 Operating Permit Renewal No.: T035-29415-00046

Source Background and Description

Source Name:	Arrowhead Plastic Engineering, Inc.
Source Location:	2909 South Hoyt Avenue, Muncie, Indiana 47302
County:	Delaware
SIC Code:	3089
Permit Renewal No.:	T035-29415-00046
Significant Source Modification No.:	T035-29436-00046
Permit Reviewer:	Mehul Sura

Proposed Expansion

On June 29, 2010, the Office of Air Quality (OAQ) received an application from Arrowhead Plastic Engineering, Inc. (located at 2909 South Hoyt Avenue, Muncie, Indiana 47302) requesting changes in the 326 IAC 8-1-6 BACT requirements specified in the permit for booths EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I (here in after referred to as BACT-subject booths). These BACT requirements were established in CP No. 035-8244-00046, issued on November 12, 1998. Arrowhead Plastic Engineering, Inc. has requested the following changes to these BACT requirements:

(a) Add flexibility to use resin and gel coat, both, at all the BACT-subject booths (several BACT-subject booths were permitted to use either resin or gel coat, but not both).

(b) Remove the restriction which requires hand lay-up application for 30-40% products.

(c) Add flexibility to utilize non-atomized spray gun for resin/fiberglass spray application.

(d) Increase throughput capacity of each BACT-subject booth (for details of revised throughput capacity, please refer to emission unit descriptions in 'Permitted Emission Units and Pollution Control Equipment' section of the TSD).

Requirement for VOC BACT

The existing 326 IAC 8-1-6 VOC BACT requirements for the BACT-subject booths have been revised to include the proposed expansion.

VOC Potential Emissions

Each BACT-subject booth has potential VOC emissions of 216.5 tons/year (for detailed emission calculations, please refer to TSD Appendix A).

Summary of the Best Available Control Technology (BACT) Process

BACT is a mass emission limitation based on the maximum degree of pollution reduction of emissions, which is achievable on a case-by-case basis. BACT analysis takes into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, work practices, and operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution, thereby protecting public health and the environment.

Federal guidance on BACT requires an evaluation that follows a “top down” process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by regulation or permit, or controls achieved in practice. The highest level of control is then evaluated for technical feasibility.

The five (5) basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially “available” control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies, and controls applied to similar source categories. There is no requirement in the State or Federal regulations to require innovative control to be used as BACT.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source-specific factors related to safe and successful use of the controls. Innovative control means a control that has not been demonstrated in a commercial application on similar units. Only available and proven control technologies are evaluated. A control technology is considered available when there are sufficient data indicating that the technology results in a reduction in emissions of regulated pollutants.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. The ranked alternatives are reviewed in terms of environmental, energy, and economic impacts specific to the proposed modification. If the analysis determines that the evaluated alternative is not appropriate as BACT due to any of the impacts, then the next most effective is evaluated. This process is repeated until a control alternative is chosen as BACT. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. For the technologies determined to be feasible, there may be several different limits that have been set as BACT for the same control technology. The permitting agency has to choose the most stringent limit as BACT unless the applicant demonstrates in a convincing manner why that limit is not feasible. The final BACT determination would be the technology with the most stringent corresponding limit that is economically feasible. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

The Office of Air Quality (OAQ) makes BACT determinations by following the five steps identified above.

Summary of Similar Sources

The table below summarizes existing sources with similar operations that are listed in the U.S. EPA RACT/BACT/LAER (RBLC) Clearinghouse database and other resources, such as other permitting agencies websites.

Company Name	RBLC ID/Permit #	Operation	Control Technology/Work Practice	Control Efficiency Requirement
Nelco Products, Inc.	CA-1111	Fiberglass Impregnation	Permanent total enclosure vented to thermal oxidizer	98%
Lasco Bathware: Clark, NV (bathware manufacturing facility)	NV-0043 / 75	Open Molding	VOC: Concentrators, Adsorption, and RTO to Desorb and Incinerate, 14.84 lb/hr	95%
Amerimax Building Products, Inc.: Allen, IN (fiberglass-reinforced panel manufacturing)	F003-22556-00340	Mold Release Application Area, Gel Coat Reciprocator, resin reciprocators	VOC: concentrator/catalytic oxidizer system; fiberglass-reinforced panel manufacturing shall be done in an enclosed area; 99 ton/yr; use of automated reciprocators	95%
Jacuzzi Whirlpool Bath: San Bernardino, CA (manufacture of showers and spas)	CA-1106 / 402868	Resin Manufacturing: Polyester Resin Operations - Hand and Spray Layup	VOC: Concentrator and catalytic oxidizer with 90% control, no emission limit (spray room vented to permanent total enclosure)	90%
Frontline Manufacturing, Inc.: Kosciusko, IN	085-28953-00077	Resin and Gel coat Application Booths	Compliance with 40 CFR 63, Subpart WWWW • Compliance with the Operator Training Requirements in 326 IAC 20-56-2	NA

Company Name	RBLC ID/Permit #	Operation	Control Technology/Work Practice	Control Efficiency Requirement
Frontline Manufacturing, Inc.: Kosciusko, IN	085-8900-00077	Resin and Gel coat Application Booths	• Maximum monomer content of 35 wt% resin and 37 wt% gel coat (monthly basis) • Optimized spray techniques • Total resin input limited to 535.71 tons per year, non vapor suppressed resin shall not exceed 5.6% flash off for SG1 • Total resin input limited to 115.65 tons per year, non vapor suppressed resin shall not exceed 14.7% flash off for SG3 • Total volatile organic HAP from SG1 and SG3 shall be less than 47 tons per year • Work practice standards	NA
Summit Fiberglass Inc: Elkhart, IN (fiber reinforced plastic composite parts manufacturing)	039-19809-00067	Fiberglass reinforced plastic component manufacturing operations	VOC: 39.5 ton/yr; gel coat maximum monomer content of 37%; non-atomized spray, HVLP, or equivalent	NA
Crane Composites, Inc. - South Plant: Elkhart, IN (fiberglass panel manufacturing)	039-18917-00002	Fiberglass Panel Manufacturing Lines	VOC: 249 ton/yr for A and B; 129.6 ton/yr for C; monomer content limits (36% for open molding production gel coat, 35% for open molding production resin, 40% for VIP production resin); non-atomized spray or equivalent; optimized spray techniques; work practices	NA
Better Way Partners, LLC: Elkhart, IN (fiberglass parts manufacturing)	039-17869-00141	Gel Coat Booth and Resin Booth	VOC: 228 ton/yr; maximum styrene content of 60%; work practice standards; operator training	NA
Better Way Partners, LLC: Elkhart, IN (fiberglass parts manufacturing)	039-17869-00141	Gel Coat Booths and Resin Booth	VOC: monomer content limits (resin: 35-60%, gel coat: 37-50%); work practice standards; operator training	NA

Step 1: Identify Potential Control Technologies

There are two categories of controls for VOCs: destruction processes and reclamation processes.

Destruction technologies reduce the VOC concentration by high temperature oxidation into carbon dioxide and water vapor. Reclamation is the capture of VOCs for reuse or disposal. There are also commercially available combinations of reclamation and destruction technologies.

Destruction Control Methods

The destruction of organic compounds usually requires temperatures ranging from 1200°F to 2200°F for direct thermal oxidizers or 600°F to 1200°F for catalytic systems. Combustion temperature depends on the chemical composition and the desired destruction efficiency. Carbon dioxide and water vapor are the typical products of complete combustion. Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 seconds are needed to obtain high destruction efficiencies.

Fume oxidizers typically need supplemental fuel. Concentrated VOC streams with high heat contents obviously require less supplementary fuel than more dilute streams. VOC streams sometimes have a heat content high enough to be self-sustaining, but a supplemental fuel-firing rate equal to about 5% of the total oxidizer heat input is usually needed to stabilize the burner flame. Natural gas is the most common fuel for VOC oxidizers, but fuel oil is an option in some circumstances.

Combustion control technologies include:

(1) Recuperative Thermal Oxidizer,

(2) Regenerative Thermal Oxidizer,

(3) Catalytic Oxidizer, and

(4) Flare.

Reclamation Control Methods

Organic compounds may be reclaimed by one of three possible methods:

(1) Adsorption,

(2) Absorption (scrubbing), or

(3) Refrigerated Condensation.

In general, the organic compounds are separated from the emission stream and reclaimed for reuse or disposal. Depending on the nature of the contaminant and the inlet concentration of the emission stream, recovery technologies can reach efficiencies of 98%.

Adsorption is a surface phenomenon where attraction between the carbon and the VOC molecules binds the pollutants to the carbon surface. Both carbon and VOC are chemically intact after adsorption. The VOCs may be removed, or desorbed, from the carbon and reclaimed or destroyed.

Absorption is a unit operation where components of a gas phase mixture (pollutants) are selectively transferred to a relatively nonvolatile liquid, usually water. Sometimes, organic liquids, such as mineral oil or non volatile hydrocarbons, are suitable absorption solvents. The choice of solvent depends on cost and the solubility of the pollutant in the solvent.

Refrigerated Condensation is the separation of VOCs from an emission stream through a phase change, by either increasing the system pressure or, more commonly, lowering the system temperature below the dew point of the VOC vapor. When condensers are used for air pollution control, they usually operate at the pressure of the emission stream, and typically require a refrigeration unit to obtain the temperature necessary to condense the VOCs from the emission stream.

Combination Control Methods

In some cases, a combination of control technologies offers the most efficient and cost effective VOC control.

The combination of carbon adsorption with recuperative thermal incineration is available from several vendors. This system concentrates the VOC stream by using carbon adsorption to remove low concentration VOCs in an emission stream and then uses a lower volume of hot air, commonly one-tenth the original flow, to desorb the pollutants. A recuperative incinerator for destroying pollutants in the concentrated stream is much smaller and has lower supplemental fuel requirements than an incinerator sized for the full emission stream volume.

Absorption systems can also be used to concentrate emission streams to reduce the size of destruction equipment. The concentration effect is not as extreme as with carbon adsorption, a concentrated exhaust stream one quarter the volume of the inlet stream seems to be the practical limit. Absorption concentrators are typically suited for batch processes or to equalize pollutant concentrations in a variable stream. The physical characteristics that drive the absorption of pollutants into a liquid also limit the opportunity to remove those pollutants from the liquid stream.

Step 2: Eliminate Technically Infeasible Options

Technical feasibility of the following available and proven control alternatives were evaluated for the resin/gel coat operation.

Table 1: VOC BACT Control Technology Analysis

Technology	Technically Feasible?	BACT Evaluation
Flares	No	Flaring is a volatile combustion control process for VOCs in which the VOCs are piped to a remote, usually elevated, location and burned in an open flame in the open air using a specially designed burner tip, auxiliary fuel, and steam or air to promote mixing for nearly complete (> 98%) VOC destruction. Low VOC concentration in exhaust gas from resin/gel coat operation cannot guarantee achieving high VOC destruction efficiency. Low heating value of the exhaust gas would result in extremely high natural gas usage. Since this add-on control device is not technically feasible to control the VOC emissions, this control option is being eliminated in this step (Step 2) of the BACT analysis.
Regenerative Thermal Oxidizer (RTO)	Yes	A RTO is an add-on control device which converts VOC into CO_2 and H_2O through oxidation of the VOC. RTO uses a direct contact heat exchanger. This direct contact heat exchanger consists of a bed of porous ceramic packing or other structured, high heat capacity media.
Absorbers (Wet scrubber)	No	Absorbers control VOC emissions by dissolving one or more soluble components of a gas mixture in a liquid in a wet scrubber, packed tower or bubble tower. Low VOC concentration in exhaust gas from resin/gel coat operation will result in poor solubility of VOC in absorber media. Since this add-on control device is not technically feasible to control the VOC emissions, this control option is being eliminated in this step (Step 2) of the BACT analysis.

Table 1: VOC BACT Control Technology Analysis		
Technology	**Technically Feasible?**	**BACT Evaluation**
Recuperative Thermal Oxidizer	Yes	A Recuperative Thermal Oxidizer is an add-on control device to control VOC emissions by introducing VOC laden gas stream into the oxidizer. Before entering the oxidizer, the VOC laden gas stream is pre-heated by exiting flue gas from the same system in a heat exchanger or recuperator. A burner in the oxidizer then heats the VOC laden gas stream to the required temperature of 1200° F, to complete the VOC oxidation process. The gas stream (flue gas) leaving the oxidizer is then passed through the heat exchanger where incoming VOC laden gas is preheated by the heat of the exiting flue gas. Finally, the flue gas is discharged into the atmosphere.
Catalytic Oxidizer (Recuperative and Regenerative type)	Yes	A Catalytic Oxidizer is an add-on control device to control VOC emissions by using a bed of catalyst that facilitates the oxidation of combustible gases. The catalyst increases the reaction rate and allows the conversion of VOC at lower temperature than a thermal oxidizer.
Refrigerated Condenser	No	A Refrigerated Condenser is an add-on control device to control VOC emissions with high VOC concentrations (usually greater than 5,000 ppmv). The VOC concentration in the exhaust from the resin/gel coat operation is very low. Since this add-on control device is not technically feasible to control the VOC emissions, this control option is being eliminated in this step (Step 2) of the BACT analysis.
Carbon Adsorbers	No	Carbon Adsorbers are add-on control devices to control VOC emissions by adsorption. VOC recovery from the exhaust from the resin/gel coat operation is not desired and the VOC concentration in the exhaust from the resin/gel coat operation is very low. Styrene could polymerize on the carbon and deactivate the carbon bed. Since this add-on control device is not technically feasible to control VOC emissions, this control option is being eliminated in this step (Step 2) of the BACT analysis.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Control Effectiveness		
Control Technology	**Rank**	**Destruction Efficiency**
Regenerative Thermal Oxidizer	1	99%
Catalytic Oxidizer	2	95%
Recuperative Thermal Oxidizer	3	95%

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for similar operations. All data in the table is based on the information obtained from the permit application submitted by Arrowhead Plastic Engineering, Inc., the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

COMPARABLE BACT DETERMINATIONS			
Company Name	**Operation**	**Add-on Control/Work Practice**	**Control Method**
Nelco Products, Inc.	Fiberglass Impregnation	Add-on Control	Thermal oxidizer
Lasco Bathware: Clark, NV (bathware manufacturing facility)	Open Molding	Add-on Control	Adsorption and RTO
Jacuzzi Whirlpool Bath: San Bernardino, CA (manufacture of showers and spas)	Resin Manufacturing: Polyester Resin Operations - Hand and Spray Layup	Add-on Control	Concentrator and catalytic oxidizer
Frontline Manufacturing, Inc.: Kosciusko, IN	Resin and Gel coat Application Booths	Work Practice • Compliance with 40 CFR 63, Subpart WWWW • Compliance with the Operator Training Requirements in 326 IAC 20-56-2	None
Frontline Manufacturing, Inc.: Kosciusko, IN	Resin and Gel coat Application Booths	Work Practice • Maximum monomer content of 35 wt% resin and 37 wt% gel coat (monthly basis) • Optimized spray techniques • Total resin input limited to 535.71 tons per year, non vapor suppressed resin shall not exceed 5.6% flash off for SG1 • Total resin input limited to 115.65 tons per year, non vapor suppressed resin shall not exceed 14.7% flash off for SG3 • Total volatile organic HAP from SG1 and SG3 shall be less than 47 tons per year • Work practice standards	None
Crane Composites, Inc. - South Plant: Elkhart, IN (fiberglass panel manufacturing)	Fiberglass Panel Manufacturing Lines	Work Practice VOC: 249 ton/yr for A and B; 129.6 ton/yr for C; monomer content limits (36% for open molding production gel coat, 35% for open molding production resin, 40% for VIP production resin); non-atomized spray or equivalent; optimized spray techniques; work practices	None

COMPARABLE BACT DETERMINATIONS			
Better Way Partners, LLC: Elkhart, IN (fiberglass parts manufacturing)	Gel Coat Booth and Resin Booth	Work Practice VOC: 228 ton/yr; maximum styrene content of 60%; work practice standards; operator training	None
Better Way Partners, LLC: Elkhart, IN (fiberglass parts manufacturing)	Gel Coat Booths and Resin Booth	Work Practice VOC: monomer content limits (resin: 35-60%, gel coat: 37-50%); work practice standards; operator training	None
PROPOSAL			
Arrowhead Plastic Engineering, Inc.	Gel Coat Booths and Resin Booths	Work Practice (a) The VOC emissions from each booth shall not exceed 16 tons per twelve (12) consecutive month period. (b) Compliance with all applicable requirements of 40 CFR 63, Subpart WWWW. (c) Compliance with the requirements of 326 IAC 20-56-2 (Reinforced Plastic Composites Production). (d) Acetone or other non-VOC containing materials shall be utilized for cleaning purposes. (e) Storage containers used to store VOC and/or HAP containing material shall be kept tightly covered when not in use. (f) Other storage containers used to transport solvent from drums to work stations be closed containers having soft gasketed spring-loaded closures.	None

Step 4: Evaluate the Most Effective Controls and Document the Results

Economic analysis:

Although each BACT-subject booth has potential VOC emissions of 216.5 tons/yr, the historic source-wide VOC emissions (baseline VOC emissions) are significantly lower than 216.5 tons/yr as shown in the following table:.

Year	source-wide VOC emissions (tons/yr)
2004	14
2003	12
2002	13
2001	10
2000	13

The information in the above table was derived from OAQ emission data.

The source has indicated that based on production demand, none of the BACT-subject booths would emit more than 16 tons/yr of VOC emissions. Therefore, the source has proposed 16 tons/yr VOC emission limit for each BACT-subject booth. The table below shows the annualized cost of technically feasible controls, based on the 16 tons/yr baseline VOC emissions (please refer to TSD Appendix C for the detailed cost analysis). This baseline VOC emission (16 tons/yr) will be included in the BACT as a practically enforceable limit.

Control Method	operating scenario	Control Efficiency	Expected Emission Rate (tons per year)	Emission Reduction (tons per year)	Total Annualized Cost ($)	cost per ton of VOC removed ($/ton of VOC)
Regenerative Thermal Oxidizer	One control per booth	95	0.8	15.20	266,660.6	17,543.5
Catalytic Oxidizer	One control per booth	95	0.8	15.20	394,600.8	25,960.58
Recuperative Thermal Oxidizer	One control per booth	95	0.8	15.20	609,617.1	40,106.39
Regenerative Thermal Oxidizer	One control per eight booths	99	7.2	136.80	1,389,042.4	10,153.8
Catalytic Oxidizer	One control per eight booths	95	6.4	121.60	1,232,018.9	10,131.73
Recuperative Thermal Oxidizer	One control per eight booths	95	6.4	121.60	1,249,890.3	10,278.70

All of the above control options have a high cost to remove VOC. Therefore, these options are not economically feasible to control VOC emissions from the resin/gel coat operations.

Energy Impact

Operation of resin and gel coat booths without VOC add-on control will eliminate the natural gas usage and electric energy for fans and other auxiliary equipment for add-on control.

Environmental Impact

The combined VOC/HAP PTE of the BACT-subject booths due to this BACT revision is 144 (16 x 8) tons/yr, which is 35.5 tons less than the existing combined VOC/HAP PTE (179.5 tons/yr) of BACT-subject booths. Thus, the VOC/HAP emissions are not increased due to this revised BACT.

Step 5: Select BACT

Although many other sources have resin and gel coat maximum monomer content BACT limit, this type of limit will not be added for Arrowhead Plastic Engineering, Inc. The reason is as follows:

Arrowhead Plastic Engineering, Inc. is a custom molder. The operating scenario and product material changes frequently. Moreover, each booth has 16 tons/yr VOC emission limit. Adding resin and gel coat maximum monomer content limit would be redundant to 16 tons/yr VOC emission limit.

Based on the control technology evaluation made in Step 4 above, IDEM has determined that VOC add-on control technology is not required.

The BACT for EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I shall be as follows:

(a) The VOC emissions from each booth shall not exceed 16 tons per twelve (12) consecutive month period.

(b) Compliance with all applicable requirements of 40 CFR 63, Subpart WWWW (for details of these requirements, please refer NESHAP, Subpart WWWW appliacbilty in 'Federal Rule Applicability' section of the TSD).

(c) Compliance with the requirements of 326 IAC 20-56-2 (Reinforced Plastic Composites Production) (for details of these requirements, please refer 326 IAC 20-56 (Reinforced Plastic Composites Production) appliacbilty in 'State Rule Applicability - Entire Source' section of the TSD).

(d) Acetone or other non-VOC containing materials shall be utilized for cleaning purposes.

(e) Storage containers used to store VOC and/or HAPs containing material shall be kept tightly covered when not in use, and

(f) Other solvent containers used to transport solvent from drums to work stations be closed containers having soft gasketed spring-loaded closures.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance determination requirements applicable to this BACT are specified in the TSD for EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I.

TSD Appendix C - Cost Analysis for Best Available Control Technology (BACT)

Emission Units: booths EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I
Source Name: Arrowhead Plastic Engineering, Inc.
Source Location: 2909 South Hoyt Avenue, Muncie, Indiana 47302
County: Delaware
Permit Renewal No.: T035-29436-00046
Significant Source Modification No.: T035-29436-00046
Permit Reviewer: Mehul Sura

		One control per booth		One control per eight booths		
		Regenerative Thermal Oxidizer	Zeolite Concentrator & Thermal Oxidizer	Regenerative Thermal Oxidizer	Zeolite Concentrator & Thermal Oxidizer	
	EPA Cost Control Manual Formula/Source supplied information					
Volumetric Throughput 'Q' =	a	20,000.0	20,000.0	180,000.0	180,000.0	SCFM
RTO Heat input	q	2.0	0.8	16.0	6.2	MMbtu/hr
Natural Gas Consumption =	=q*8760*10^6/1020	17,176,470.6	6,698,823.5	137,411,764.7	53,590,588.2	cubic feet/year
Fan Power =	c=1.17*10^-4*a*19/0.6	74.1	74.1	666.9	666.9	kw
Direct Costs						
Purchased equipment costs						
Incinerator + auxiliary equipment	vendor estimates supplied bythe source	370,000	430,000	2,250,000.0	2,400,000.0	$
Instrumentation	0.1A	-	-	-	-	$
Sales Tax	0.03A	11,100.0	12,900.0	67,500.0	72,000.0	$
Freight	0.05A	18,500.0	21,500.0	112,500.0	120,000.0	$
Purchased Equipment Costs	B	**399,600.0**	**464,400.0**	**2,225,000.0**	**2,225,001.0**	$
Direct installation costs						
Foundations & Supports	0.08B	31,968.0	37,152.0	178,000.0	178,000.1	$
Handling & erection	0.14B	55,944.0	65,016.0	311,500.0	311,500.1	$
Electrical	0.04B	15,984.0	18,576.0	89,000.0	89,000.0	$
Piping	0.02B	7,992.0	9,288.0	44,500.0	44,500.0	$
Insulation for Ductwork	0.01B	3,996.0	4,644.0	22,250.0	22,250.0	$
Painting	0.01B	3,996.0	4,644.0	22,250.0	22,250.0	$
Direct installation costs	C	**119,880.0**	**139,320.0**	**667,500.0**	**667,500.3**	$
Total Direct Cost	(B+C)	**519,480.0**	**603,720.0**	**2,892,500.0**	**2,892,501.3**	$
Indirect Costs						
Engineering	0.10B	39,960.0	46,440.0	222,500.0	222,500.1	$
Construction & field expenses	0.05B	19,980.0	23,220.0	111,250.0	111,250.1	$
Contractor fees	0.1B	39,960.0	46,440.0	222,500.0	222,500.1	$
Start-up	0.02B	7,992.0	9,288.0	44,500.0	44,500.0	$
Performance Test	0.01B	3,996.0	4,644.0	22,250.0	22,250.0	$
Contingencies	0.03B	11,988.0	13,932.0	66,750.0	66,750.0	$
Total Indirect Cost	D	**123,876.0**	**143,964.0**	**689,750.0**	**689,750.3**	$
TOTAL CAPITAL INVESTMENT	(B+C+D)	**643,356.0**	**747,684.0**	**3,582,250.0**	**3,582,251.6**	$
Direct Annual Costs						
Operating labor - Operator	E=0.5 (hr/shift)*3(shift/day)*365 (days/yr)*12.95($/hr)*1.289 (CPI)	8,639.0	8,639.0	8,639.0	8,639.0	$
Operating labor - Supervisor	F = 0.15E	1,295.9	1,295.9	1,295.9	1,295.9	$
Maintenance - Labor	G=0.5 (hr/shift)*3(shift/day)*365 (days/yr)*14.95($/hr)*1.289 (CPI)	9,997.0	9,997.0	9,997.0	9,997.0	$
Maintenance - Material	H=G	9,997.0	9,997.0	9,997.0	9,997.0	$
Utilities - Natural gas	I=Natural Gas Consumption (cubic feet/year)*0.00625	113,878.0	43,800.0	998,640.0	341,640.0	$
Utilities - Electricity	J=Energy Consumption (kW/hr)*8760*0.00625	38,297.8	38,297.8	344,680.6	344,680.6	$
Total Direct Annual Cost	K=E+F+G+H+I	**182,104.7**	**112,026.7**	**1,373,249.4**	**716,249.4**	$
Indirect Annual Costs						
Overhead	0.6(E+F+G+H)	17,957.3	17,957.3	17,957.3	17,957.3	$
Administrative Charges	0.02(B+C+D)	12,867.1	14,953.7	71,645.0	71,645.0	$
Property taxes	0.01(B+C+D)	6,433.6	7,476.8	35,822.5	35,822.5	$
Insurance	0.01(B+C+D)	6,433.6	7,476.8	35,822.5	35,822.5	$
Capital recovery	0.1428(B+C+D)	91,871.2	106,769.3	511,545.3	511,545.5	$
Total Indirect Annual Cost	L	**135,562.8**	**154,633.9**	**672,792.6**	**672,792.9**	$
TOTAL ANNUAL COST	(K+L)	**317,667.5**	**266,660.6**	**2,046,042.1**	**1,389,042.4**	$
Baseline Emission Rate		16.00	16.00	144.00	144.00	tons/year
Overall Control Efficiency		99%	95%	99%	95%	
VOC Removed	S	15.84	15.20	142.56	136.80	tons/year
Annualized Cost	=(K+L)/S	**20,054.8**	**17,543.5**	**14,352.1**	**10,153.8**	$/ton of VOC removed

Methodology:
Costs are CPI adjusted from 6/99 to 11/07 at a ratio of 1.289.
Natural gas cost of $ 0.00625 per cubic foot.
Electricity costs of $ 0.05615 per kilowatt hour.
Interest rate of 7% for 10 years.
Volumetric Throughput 'Q' (SCFM) information provided by the source.
Formulas are derived from EPA Cost Control Manual.

TSD Appendix B - Cost Analysis for Best Available Control Technology (BACT)

Emission Units: booths EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I
Source Name: Arrowhead Plastic Engineering, Inc.
Source Location: 2909 South Hoyt Avenue, Muncie, Indiana 47302
County: Delaware
Permit Renewal No.: T035-29436-00046
Significant Source Modification No.: T035-29436-00046
Permit Reviewer: Mehul Sura

		Recuperative Thermal Oxidizer	Recuperative Thermal Oxidizer	
		One control per booth	One control per eight booths	
	EPA Cost Control Manual Formula/Source supplied information			
Volumetric Throughput 'Q' =	a	18,230.0	145,840.0	SCFM
RTO Heat input	q	9.0	19.5	MMbtu/hr
Natural Gas Consumption =	=q*8760*10^6/1020	77,294,117.6	167,470,588.2	cubic feet/year
Fan Power =	c=1.17*10^-4*a*19/0.6	67.5	540.3	kw
Direct Costs				
equipment	A=21342*a^0.25	247,988.6	417,065.5	$
Instrumentation	0.1A	-	41,706.6	$
Sales Tax	0.03A	7,439.7	12,512.0	$
Freight	0.05A	12,399.4	20,853.3	$
	B = 1.18 A	**267,827.7**	**492,137.3**	$
				$
Foundations and Supports	0.08B	21,426.2	39,371.0	$
Handling & erection	0.14B	37,495.9	68,899.2	$
Electrical	0.04B	10,713.1	19,685.5	$
Piping	0.02B	5,356.6	9,842.7	$
Insulation for Ductwork	0.01B	2,678.3	4,921.4	$
Painting	0.01B	2,678.3	4,921.4	$
	C	**80,348.3**	**147,641.2**	$
Total Direct Cost	(B+C)	**348,176.0**	**639,778.5**	$
				$
Indirect Costs				
Engineering	0.10B	26,782.8	49,213.7	$
	0.05B	13,391.4	24,606.9	$
Contractor fees	0.1B	26,782.8	49,213.7	$
Start-up	0.02B	5,356.6	9,842.7	$
Performance Test	0.01B	2,678.3	4,921.4	$
Contingencies	0.03B	8,034.8	14,764.1	$
Total Indirect Cost	D	**83,026.6**	**152,562.6**	$
	(B+C+D)	**431,202.6**	**792,341.1**	$
Direct Annual Costs				$
Operating labor - Operator	E=0.5 (hr/shift)*3(shift/day)*365 (days/yr)*12.95($/hr)*1.289(CPI)	8,639.0	10,950.0	$
Operating labor - Supervisor	F = 0.15E	1,295.9	1,642.5	$
Maintenance - Labor	G=0.5 (hr/shift)*3(shift/day)*365 (days/yr)*14.95($/hr)*1.289(CPI)	9,997.0	12,045.0	$
Maintenance - Material	H=G	9,997.0	12,045.0	$
Utilities - Natural gas	I=Natural Gas Consumption (cubic feet/year)*0.00625	483,088.2	1,046,691.2	$
Utilities - Electricity	J=Energy Consumption (kW/hr)*8760*0.059	-	-	$
	K=E+F+G+H+I+J	**513,017.1**	**1,083,373.7**	$
Indirect Annual Costs				$
Overhead	0.6(E+F+G+H)	17,957.3	22,009.5	$
Administrative Charges	0.02(B+C+D)	8,624.1	15,846.8	$
Property taxes	0.01(B+C+D)	4,312.0	7,923.4	$
Insurance	0.01(B+C+D)	4,312.0	7,923.4	$
Capital recovery	0.14238(B+C+D)	61,394.6	112,813.5	$
Total Indirect Annual Cost	L	**96,600.0**	**166,516.7**	$
TOTAL ANNUAL COST	(K+L)	**609,617.1**	**1,249,890.3**	$
Baseline Emission Rate		16.00	128.00	tons/year
Overall Control Efficiency		95%	95%	
VOC Removed	S	15.20	121.60	tons/year
Annualized Cost	=(K+L)/S	**40,106.39**	**10,278.70**	$/ton of VOC removed

Methodology:
Costs are CPI adjusted from 6/99 to 11/07 at a ratio of 1.289.
Natural gas cost of $ 0.00625 per cubic foot.
Electricity costs of $ 0.05615 per kilowatt hour.
Interest rate of 7% for 10 years.
Volumetric Throughput 'Q' (SCFM) information provided by the source.
Formulas are derived from EPA Cost Control Manual.

TSD Appendix B - Cost Analysis for Best Available Control Technology (BACT)

Emission Units: booths EU-01A, EU-01B, EU-01C, EU-01D, EU-01E, EU-01G, EU-01H and EU-01I
Source Name: Arrowhead Plastic Engineering, Inc.
Source Location: 2909 South Hoyt Avenue, Muncie, Indiana 47302
County: Delaware
Permit Renewal No.: T035-29436-00046
Significant Source Modification No.: T035-29436-00046
Permit Reviewer: Mehul Sura

		Catalytic Thermal Oxidizer		
		One control per booth	One control per eight booths	
	EPA Cost Control Manual Formula			
Volumetric Throughput	a	18,230.0	145,840.0	SCFM
RTO Heat input	q	5.0	10.0	MMbtu/hr
Natural Gas	=q*8760*10^6/1020	42,941,176.5	85,882,352.9	cubic feet/year
Fan Power =	c=1.17*10^-4*a*19/0.6	67.5	540.3	kw
Direct Costs				
Purchased equipment costs				
Incinerator + auxiliary	A=1443*a^0.5527	326,740.6	1,031,195.4	$
Instrumentation	0.1A	32,674.1	103,119.5	$
Sales Tax	0.03A	9,802.2	30,935.9	$
Freight	0.05A	16,337.0	51,559.8	$
Purchased Equipment	B = 1.18 A	**385,553.9**	**1,216,810.5**	$
Direct installation				$
Foundations & Supports	0.08B	30,844.3	97,344.8	$
Handling & erection	0.14B	53,977.5	170,353.5	$
Electrical	0.04B	15,422.2	48,672.4	$
Piping	0.02B	7,711.1	24,336.2	$
Insulation for Ductwork	0.01B	3,855.5	12,168.1	$
Painting	0.01B	3,855.5	12,168.1	$
Direct installation costs	C	**115,666.2**	**365,043.2**	$
Total Direct Cost	(B+C)	**501,220.1**	**1,581,853.7**	$
				$
Indirect Costs				
Engineering	0.10B	38,555.4	121,681.1	$
Construction & field	0.05B	19,277.7	60,840.5	$
Contractor fees	0.1B	38,555.4	121,681.1	$
Start-up	0.02B	7,711.1	24,336.2	$
Performance Test	0.01B	3,855.5	12,168.1	$
Contingencies	0.03B	11,566.6	36,504.3	$
Total Indirect Cost	D	**119,521.7**	**377,211.3**	$
TOTAL CAPITAL	(B+C+D)	**620,741.8**	**1,959,065.0**	$
Direct Annual Costs				$
Operating labor - Operator	E=0.5 (hr/shift)*3(shift/day)*365 (days/yr)*12.95($/hr)*1.289(CPI)	10,950.0	10,950.0	$
Operating labor -	F = 0.15E	1,642.5	1,642.5	$
Maintenance - Labor	G=0.5 (hr/shift)*3(shift/day)*365 (days/yr)*14.95($/hr)*1.289(CPI)	12,045.0	12,045.0	$
Maintenance - Material	H=G	12,045.0	12,045.0	$
Utilities - Natural gas	I=Natural Gas Consumption (cubic feet/year)*0.00625	219,000.0	536,764.7	$
Utilities - Electricity	J=Energy Consumption (kW/hr)*8760*0.059	3,697.9	279,267.9	$
Total Direct Annual	K=E+F+G+H+I+J	**259,380.4**	**852,715.1**	$
Indirect Annual Costs				$
Overhead	0.6(E+F+G+H)	22,009.5	22,009.5	$
Administrative Charges	0.02(B+C+D)	12,414.8	39,181.3	$
Property taxes	0.01(B+C+D)	6,207.4	19,590.6	$
Insurance	0.01(B+C+D)	6,207.4	19,590.6	$
Capital recovery	0.1428(B+C+D)	88,381.2	278,931.7	$
Total Indirect Annual	L	**135,220.4**	**379,303.8**	$
TOTAL ANNUAL COST	(K+L)	**394,600.8**	**1,232,018.9**	$
Baseline Emission Rate		16.00	128.00	tons/year
Overall Control Efficiency		95%	95%	
VOC Removed	S	15.20	121.60	tons/year
Annualized Cost	=(K+L)/S	**25,960.58**	**10,131.73**	$/ton of VOC removed

Methodology:
Costs are CPI adjusted from 6/99 to 11/07 at a ratio of 1.289.
Natural gas cost of $ 0.00625 per cubic foot.
Electricity costs of $ 0.05615 per kilowatt hour.
Interest rate of 7% for 10 years.
Volumetric Throughput 'Q' (SCFM) information provided by the source.
Formulas are derived from EPA Cost Control Manual.
Catalyst replacement cost has not been included in the above analysis.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Monte Foist
Arrowhead Plastic Engineering, Inc.
2909 S. Hoyt Ave.
Muncie IN 47032

DATE: Jan. 26, 2011

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Significant Source Modification
035-29436-00046

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because 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.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Thomas W. Kishel President/CEO Arrowhead Plastic Engineering, Inc.
Courtney Shattuck Arrowhead Plastic Engineering, Inc.
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Jan. 26, 2011

TO: Muncie Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Arrowhead Plastic Engineering, Inc.
Permit Number: 035-29436-00046

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or 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.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	BMILLER 1/26/2011 Arrowhead Plastic Engineering, Inc 035-29436-00046 (final)			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Monte Foist Arrowhead Plastic Engineering, Inc 2909 South Hoyt Avenue Muncie IN 47032-3089 (Source CAATS) ***Via Confirm Delivery***									
2		Thomas W. Kishel President/CEO Arrowhead Plastic Engineering, Inc 2909 South Hoyt Avenue Muncie IN 47032-3089 *(RO CAATS)*									
3		Mr. Charles L. Berger Berger & Berger, Attorneys at Law 313 Main Street Evansville IN 47700 *(Affected Party)*									
4		Muncie City Council and Mayors Office 300 N. High St Muncie IN 47305 *(Local Official)*									
5		Delaware County Health Department 200 W Main St, County Bldg Room 207-309 Muncie IN 47305-2874 *(Health Department)*									
6		Delaware County Commissioners 100 West Main Street Muncie IN 47305 *(Local Official)*									
7		Muncie Public Library - Maring-Hunt Branch 2005 South High Street Muncie IN 47302 *(Library)*									
8		Mrs. Nicki Combs 4901 W. 400 S Muncie In 47302 *(Affected Party)*									
9		Courtney Shattuck Arrowhead Plastic Engineering, Inc. 1034 Falcon Court Indpendence KY 41051 *(Source ¿ addl contact)*									
10		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 *(Affected Party)*									
11											
12											
13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

FACSIMILIE OF PS Form 3877