INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: June 1, 2006

RE: Sintering Technologies, Inc. / 031-22538-00017

FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires 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 of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from 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-AM.dot 03/23/06

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Indianapolis, Indiana 46204-2251
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June 1, 2006

Mr. Larry Kroger
Sintering Technologies, Inc.
1024 Barachel Lane
Greensburg, Indiana 47240

Dear Mr. Kroger:

Re: Exempt Construction and Operation
Status, 031-22538-00017

The application received on January 13, 2006 from Sintering Technologies, Inc., manufacturing automotive parts out of sintered powder metal, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following emission units located at 1024 Barachel Lane, Greensburg, Indiana 47240, remain exempt from air pollution permit requirements:

(a) Powder Mix Room consisting of four (4) double cone mixers, two (2) sifters, one (1) weighing carousel, and one (1) powder invertor. The double cone mixers have a maximum rated capacity of 250, 500, 1,000, and 1,000 kilograms. An OptiFlow Cartridge Filter Dust Collector, constructed in June 2000, controls PM emissions generated in the Powder Mix Room, and exhausting to one (1) stack, identified as S6;

(b) Hopper operations with two (2) baghouses, constructed in 1988, designated as PCD_1 and PCD_2, with emissions exhausting to two (2) stacks, identified as S13 and S14;

(c) Following twenty three (23) compaction presses for manufacturing automotive parts, and controlled with 7 dust collectors, PCD3 through PCD9 (5 Farr dust collectors and 2 AGET Dustkops):

Press Number	Maximum Capacity, tons	Stack ID	Control Device ID (Mfg)
P1	175	S15	PCD3 (Farr)
P2	100	S15	PCD3 (Farr)
P3	100	S16	PCD4 (Farr)
P4	100	S16	PCD4 (Farr)
P5	100	S16	PCD4 (Farr)
P6	100	S16	PCD4 (Farr)
P7	100	General Building Ventilation	PCD5 (Farr)
P8	500	General Building Ventilation	PCD5 (Farr)
P9	200	General Building Ventilation	PCD5 (Farr)

P10	800	General Building Ventilation	Uncontrolled
P11	40	General Building Ventilation	PCD6 (AGET)
P12	40	General Building Ventilation	PCD6 (AGET)
P13	40	General Building Ventilation	PCD6 (AGET)
P14	60	General Building Ventilation	PCD6 (AGET)
P15	60	General Building Ventilation	PCD6 (AGET)
P16	100	S17	PCD7 (Farr)
P17	100	S17	PCD7 (Farr)
P18	100	S18	PCD8 (Farr)
P19	100	S18	PCD8 (Farr)
P20	100	S18	PCD8 (Farr)
P21	800	General Building Ventilation	PCD9 (AGET)
P22	500	General Building Ventilation	Uncontrolled
P23	200	General Building Ventilation	Uncontrolled

(d) Eighteen (18) electric sintering furnaces, constructed in 1988, and two (2) electric sintering furnaces, constructed in 2002, which have 26 natural gas fired flame curtains each having a maximum heat input capacity of 0.25 MMBtu/hr, with emissions exhausting to four (4) stacks, identified as S1, S2, S3, and S4;

(e) Seven (7) lathes, constructed from 1990 to 1994, and seven (7) lathes, constructed from 2001 to 2006, with a total maximum coolant usage of 110 gallons per month, with emissions exhausting through genral building ventilation;

(f) One (1) fifteen gallon per hour evaporator designated as Evaporator No. 1, constructed in 1996, fired by natural gas with a maximum heat input rate of 0.195 MMBtu/hr, with emissions exhausting to one (1) stack identified as S11;

(g) One (1) 63 gallon per hour evaporator designated as Evaporator No. 2, constructed in 1996, fired by natural gas with a maximum heat input rate of 0.750 MMBtu/hr, with emissions exhausting to one (1) stack, identified as S11;

(h) Three (3) electric steam treat operations, constructed in 1988, with a maximum heat input of 200 kilowatt (KW) each, with emissions exhausting to three (3) stacks, identified as S7, S8, and S9; and

(i) Two (2) natural gas-fired boilers, constructed in 1988, each has a maximum heat input capacity of 1.05 MMBtu/hr, with emissions exhausting to one (1) stack, identified as S10.

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity limitations), opacity shall meet the following:

(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.

(2) Pursuant to 326 IAC 6-2-4 (PM Emission Limit for Indirect Heating Units), the two (2) 1.05 MMBtu/hr boilers shall each not emit PM greater than 0.6 lb/MMBtu.

(3) Any change or modification which may increase the potential to emit PM or PM10 to 5 tons per year or more from the equipment covered in this approval shall make the source subject to 326 IAC 2-5.5-1 and must be approved by the Office of Air Quality (OAQ) before such change may occur.

This exemption is a revision to all previous exemptions issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Origin signed by

Nisha Sizemore
Branch Chief
Office of Air Quality

KSR/EVP

cc: File - Decatur County
Decatur County Health Department
Air Compliance – Jennifer Schick
Permit Tracking
Compliance Data Section

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	**Sintering Technologies, Inc.**
Source Location:	**1024 Barachel Lane, Greensburg, Indiana 47240**
County:	**Decatur**
SIC Code:	**3399**
Operation Permit No.:	**031-17712-00017**
Operation Permit Issuance Date:	**September 3, 2005**
Permit Revision No.:	**031-22538**
Permit Reviewer:	**Surya Ramaswamy/EVP**

The Office of Air Quality (OAQ) has reviewed an application from Sintering Technologies, Inc. to update the source's most recent Letter of Exemption, 031-17712-00017, issued by IDEM on September 3, 2003. The source manufactures various automobile parts out of sintered powder metal with the capability to process a maximum of 7,600 pounds per hour of sintered metal.

Permitted Emission Units and Pollution Control Equipment

The following permitted emission units and pollution control devices are included in the Letter of Exemption, 031-17712-00017:

(a) Hopper operations with two (2) baghouses, constructed in 1988, designated as PCD_1 and PCD_2, with emissions exhausting to two (2) stacks, identified as S13 and S14;

(b) One (1) fifteen gallon per hour evaporator designated as Evaporator No. 1, constructed in 1996, fired by natural gas with a maximum heat input rate of 0.195 MMBtu/hr, with emissions exhausting to one (1) stack, identified as S11.

(c) One (1) 63 gallon per hour evaporator designated as Evaporator No. 2, constructed in 1996, fired by natural gas with a maximum heat input rate of 0.750 MMBtu/hr, with emissions exhausting to one (1) stack, identified as S11;

(d) Three (3) electric steam treat operations, constructed in 1988, with a maximum heat input of 200 kilowatt (KW) each, with emissions exhausting to three (3) stacks, identified as S7, S8, and S9; and

(e) Two (2) natural gas-fired boilers, constructed in 1988, each has a maximum heat input capacity of 1.05 MMBtu/hr, with emissions exhausting to one (1) stack, identified as S10.

Modified Emission Units and Pollution Control Equipment

The source is requesting to update the Letter of Exemption, 031-17712-00017 to include the following emission units:

(a) Powder Mix Room consisting of four (4) double cone mixers, two (2) sifters, one (1) weighing carousel, and one (1) powder invertor. The double cone mixers have a maximum rated capacity of 250, 500, 1,000, and 1,000 kilograms. An OptiFlow Cartridge Filter Dust Collector, constructed in June 2000, controls PM emissions generated in the Powder Mix Room, and exhausting to one (1) stack, identified as S6.

(b) Following twenty three (23) compaction presses for manufacturing automotive parts, and controlled with 7 dust collectors, PCD3 through PCD9 (5 Farr dust collectors and 2 AGET Dustkops):

Press Number	Maximum Capacity in tons	Stack ID	Control Device ID (Mfg)
P1	175	S15	PCD3 (Farr)
P2	100	S15	PCD3 (Farr)
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P4	100	S16	PCD4 (Farr)
P5	100	S16	PCD4 (Farr)
P6	100	S16	PCD4 (Farr)
P7	100	General Building Ventilation	PCD5 (Farr)
P8	500	General Building Ventilation	PCD5 (Farr)
P9	200	General Building Ventilation	PCD5 (Farr)
P10	800	General Building Ventilation	Uncontrolled
P11	40	General Building Ventilation	PCD6 (AGET)
P12	40	General Building Ventilation	PCD6 (AGET)
P13	40	General Building Ventilation	PCD6 (AGET)
P14	60	General Building Ventilation	PCD6 (AGET)
P15	60	General Building Ventilation	PCD6 (AGET)
P16	100	S17	PCD7 (Farr)
P17	100	S17	PCD7 (Farr)
P18	100	S18	PCD8 (Farr)
P19	100	S18	PCD8 (Farr)
P20	100	S18	PCD8 (Farr)
P21	800	General Building Ventilation	PCD9 (AGET)
P22	500	General Building Ventilation	Uncontrolled
P23	200	General Building Ventilation	Uncontrolled

(c) Eighteen (18) electric sintering furnaces, constructed in 1988, and two (2) electric sintering furnaces, constructed in 2002, which have 26 natural gas fired flame curtains each having a maximum heat input capacity of 0.25 MMBtu/hr, with emissions exhausting to four (4) stacks, identified as S1, S2, S3, and S4.

(d) Seven (7) lathes, constructed from 1990 to 1994, and seven (7) lathes, constructed from 2001 to 2006, with a total maximum coolant usage of 110 gallons per month, with emissions exhausting through genral building ventilation.

Description of the Process:

(a) Raw Materials Receiving and Mixing:
The following raw materials are stored and mixed at a rate of 7,600 pounds per hour (lbs /hr): Kobelco kompa 300MD, ferro-phosphorus, copper, nickel, graphite, stearate, bronze, distaloy, kenolube, enstatite, and magna sulfide. Baghouses are installed to control particulate while dumping in hoppers.

(b) Powder Metal Conveying:
Powder is conveyed from the Mixing/Powder Room to the Compacting Presses via covered 1000 kilogram (2,200 lb) hoppers or carboys. The powder can be mixed on site or comes in already premixed. Currently, the source processes 20% of the powder already premixed. All powder transfers are via gravity.

(c) Production Press Operation:
The Pressing Operation (powder compaction) utilizes mechanical presses to compact the mixed powder that flows into press tooling/dies to form a near net shape like timing gear, sprocket, pulley, valve guide or a valve seat "green" compact, that is then sent to the sintering operation for diffusion bonding.

(d) Sintering Operation: The Sintering Ovens/Furnaces, with a maximum temperature of 1200^{o}C, hardens the part by diffusion bonding the individual iron particles.

(e) Lathe Process:
The Lathing Process is a secondary step to the manufacturing process and takes place after the parts are sintered/hardened. Lathing is not done to all parts. It is generally performed on parts that require a very tight dimensional or surface finish tolerance. The amount of metal removed is small, and generally consists of taking a finishing pass on the outside diameter (OD) or the inside diameter (ID) of parts. This process seldom uses coolant since the amount of metal removed is small. Parts are placed into the chucks, manually where the metal removal process is done.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) Exemption 031-4144-00017, issued on January 5, 1995;

(b) Exemption 031-11922-00017, issued on April 17, 2000; and

(c) Exemption 031-17712-00017, issued on September 3, 2003

All conditions from previous approvals were incorporated into this permit.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation 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.

A complete application for the purposes of this review was received on January 13, 2006.

Emission Calculations

(a) Sintering Furnaces: See Page 3 and 4 of TSD Appendix A for detailed emission calculations.

These ovens harden the parts by sintering (diffusion bonding) the individual iron particles. There is no emission from this process.

(b) Lathes Emissions: There are no emissions from lathes operation, as the coolant used does not contain VOC and HAPs. They emit negligible PM/PM_{10} emissions.

(c) Evaporators No. 1 and No. 2 Combustion Emissions: See page 5 and 6 TSD Appendix A for detailed emission calculations.

Potential to Emit of the Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, inclulding air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential to Emit (tons/yr)
PM	2.03
PM-10	2.27
SO_2	0.03
VOC	0.23
CO	3.51
NO_x	4.18

HAPs	Potential to Emit (tons/yr)
Single HAP	0.07 (Hexane)
Total	0.08

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than the levels listed in 326 IAC 2-1.1-3(d)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption will be issued.

County Attainment Status

The source is located in Decatur County.

Pollutant	Status
PM-10	Attainment
PM-2.5	Attainment
SO_2	Attainment
NO_2	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 emissions and NOx are considered when evaluating the rule applicability relating to ozone. Decatur County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NOx were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability - Entire source section.

(b) Decatur County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability - Entire source section.

(c) Decatur County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability - Entire source section.

(d) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)
This existing source, including the emissions from this permit 031-22538-00017, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons per year.

The exemption issued to the source is being revised in this approval.

Federal Rule Applicability

(a) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 63, Subpart Dc), are not included in this review for the Boiler 1 and 2, each with a maximum heat input capacity of 1.05 MMBtu per hour, because the boiler's capacity is less than the rule applicability threshold of 10 MMBtu per hour.

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63.7485, Subpart DDDDD) are not included in this review for the Boiler 1 and 2 because the source is not a major source of HAP as defined in 40 CFR 63.2 or 40 CFR 63.761.

(c) The requirements of the National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries (40 CFR 63.7681, Subpart EEEEE) are not included in this review because the source is not a major source of HAP as defined in 40 CFR 63.2 or 40 CFR 63.761.

(d) There are no other New Source Performance Standard (NSPS) (326 IAC 12 and 40 CFR Part 61) included in the exemption for this source.

(e) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in the exemption for this source.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))
This source is not subject to this rule because potential uncontrolled emissions of all criteria pollutants are less than 250 tons per year. This source is also not one of the 28 listed source categories. Therefore, this source is not subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)).

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential emissions from each emission units are less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake or Porter counties, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

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

State Rule Applicability – Individual Facilities

(a) 326 IAC 8 (Volatile Organic Sources) There are no provisions in Article 326 IAC 8 that are applicable to this sintered powder metal process for automotive parts production plant. The source also uses the “mop water” to clean the floor of the plant, containing 0.0044% of VOC by weight; and two (2) evaporating units, identified as Evaporator No.1 and Evaporator No.2, for reducing mop water waste volume. The potential VOC emissions from the source are 0.23 tons per year, therefore, the operation is not subject to any 326 IAC 8 rule.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Metal Powder Handling, Mixing, and Presses are exempt from this rule, since their PM emissions are less than 0.551 pound per hour.

(c) 326 IAC 6-2 (Particulate Emission Limit for Indirect Heating Units)
The two (2) natural gas-fired boilers rated at 1.05 MMBtu/hr are subject to 326 IAC 6-2-4- for indirect heating facilities constructed after September 21, 1983. This rule mandates PM emission limit determined using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

= 0.899 lb/MMBtu, since this calculated limit is greater than 0.6 lb/MMBtu, the lesser between the two limits shall apply

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

The two boilers, each rated at 1.05 MMBtu/hr are in compliance with 326 IAC 6-2-4 as shown in the calculations below:

0.01 ton of PM/yr * 2000 lb/ton * hr/1.05 MMBtu * yr/8760 hrs = 0.002 lb/MMBtu < 0.6 lb/MMBtu

Proposed Changes

The following changes were made to the Exemption 031-17712-00017.

The application received on ~~July 14, 2003~~ **January 13, 2006** from Sintering Technologies, Inc., ~~an automotive parts~~ manufacturing **automotive parts** out of sintered powder metal, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following emission units located at 1024 Barachel Lane, Greensburg, Indiana 47240, remain exempt from air pollution permit requirements:

(a) ~~Three (3) double cone mixers, one (1) is rated at a maximum of 250 kilogram; one (1) at 500 kilogram; and one (1) at 1,000 kilogram; and a vacuum system to pick up powder metal spills on the floor.~~

Powder Mix Room consisting of four (4) double cone mixers, two (2) sifters, one (1) weighing carousel, and one (1) powder invertor. The double cone mixers have a maximum rated capacity of 250, 500, 1,000, and 1,000 kilograms. An OptiFlow Cartridge Filter Dust Collector, constructed in June 2000, controls PM emissions generated in the Powder Mix Room, and exhausting to one (1) stack, identified as S6.

(b) Hopper operations with two (2) baghouses, **constructed in 1988,** designated as PCD_1 and PCD_2**, with emissions exhausting to two (2) stacks, identified as S13 and S14;**

(c) ~~Thirteen (13) presses, with maximum capacity ranging from 40 tons to 880 tons, with three (3) baghouses, designated as PCD3, PCD4, and PCD5 to control the PM emissions~~.

Following twenty three (23) compaction presses for manufacturing automotive parts, and controlled with 7 dust collectors, PCD3 through PCD9 (5 Farr dust collectors and 2 AGET Dustkops):

Press Number	Maximum Capacity, tons	Stack ID	Control Device ID (Mfg)
P1	175	S15	PCD3 (Farr)
P2	100	S15	PCD3 (Farr)
P3	100	S16	PCD4 (Farr)
P4	100	S16	PCD4 (Farr)
P5	100	S16	PCD4 (Farr)
P6	100	S16	PCD4 (Farr)
P7	100	General Building Ventilation	PCD5 (Farr)
P8	500	General Building Ventilation	PCD5 (Farr)
P9	200	General Building Ventilation	PCD5 (Farr)
P10	800	General Building Ventilation	Uncontrolled
P11	40	General Building Ventilation	PCD6 (AGET)
P12	40	General Building Ventilation	PCD6 (AGET)
P13	40	General Building Ventilation	PCD6 (AGET)
P14	60	General Building Ventilation	PCD6 (AGET)
P15	60	General Building Ventilation	PCD6 (AGET)
P16	100	S17	PCD7 (Farr)
P17	100	S17	PCD7 (Farr)
P18	100	S18	PCD8 (Farr)
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P20	100	S18	PCD8 (Farr)
P21	800	General Building Ventilation	PCD9 (AGET)
P22	500	General Building Ventilation	Uncontrolled
P23	200	General Building Ventilation	Uncontrolled

(d) ~~Thirteen (13) natural gas fired sintering furnaces, identified as SF-1 through SF-13 with a total heat input capacity of 3.54 million British thermal units (mmBtu/hr).~~

~~(e) Five (5) electric sintering furnaces, with two sizes, three 18 inch and two 36 inch belt ovens/furnaces. The 18- inch furnaces are totally electric with a total capacity of 210 KW, and the 36-inch furnaces have a total capacity of 575 KW, with a natural gas fired pre heat section at 0.25 mmBtu/hr heat input capacity.~~

Eighteen (18) electric sintering furnaces, constructed in 1988, and two (2) electric sintering furnaces, constructed in 2002, which have 26 natural gas fired flame curtains each having a maximum heat input capacity of 0.25 MMBtu/hr, with emissions exhausting to four (4) stacks, identified as S1, S2, S3, and S4;

~~(f)~~**(e)** ~~Six (6) lathes operation, with a total maximum coolant usage of 55 gallon per month~~.

Seven (7) lathes, constructed from 1990 to 1994, and seven (7) lathes, constructed from 2001 to 2006, with a total maximum coolant usage of 110 gallons per month, with emissions exhausting through genral building ventilation;

~~(g)~~**(f)** One (1) fifteen gallon per hour evaporator designated as Evaporator No. 1, **constructed in 1996,** fired by natural gas with a maximum heat input rate of 0.195 MMBtu/hr**, with emissions exhausting to one (1) stack identified as S11;**

~~(h)~~**(g)** One (1) 63 gallon per hour evaporator designated as Evaporator No. 2, **constructed in 1996,** fired by natural gas with a maximum heat input rate of 0.750 MMBtu/hr**, with emissions exhausting to one (1) stack, identified as S11;**

~~(i)~~**(h)** Three (3) electric steam treat operations**, constructed in 1988**, with a maximum heat input of 200 kilowatt (KW) each**, with emissions exhausting to three (3) stacks, identified as S7, S8, and S9; and**

~~(j)~~**(i)** Two (2) natural gas-fired boilers**, constructed in 1988,** each has a maximum heat input capacity of 1.05 MMBtu/hr**, with emissions exhausting to one (1) stack, identified as S10**.

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary ~~Exemption~~ **Alternative Opacity limitation**), opacity shall meet the following:

(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 ~~in a 6-hour period~~ as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor) in a six (6) hour period.

(2) Pursuant to 326 IAC 6-2-4 (PM Emission Limit for Indirect Heating Units), the two (2) 1.05 MMBtu/hr boilers shall each not emit PM greater than 0.6 lb/MMBtu.

(3) Any change or modification which may increase the potential to emit PM or PM10 to 5 tons per year or more from the equipment covered in this approval shall make the source subject to 326 IAC 2-5.5-1 and must be approved by the Office of Air Quality (OAQ) before such change may occur.

This exemption is a revision to all previous exemptions issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Conclusion

The operation of this sintered powder metal process for automotive components shall be subject to the conditions of the attached **Exemption 031-22538-00017.**

Appendix A: Emissions Calculations
Emissions from Metal Powder Processes
Company Name: Sintering Technologies, Inc.
Address City IN Zip: 1024 Barachel Lane, Greensburg, Indiana 47240
Permit Number: 031-22538-00017
Plt ID: 031-00017
Reviewer: Surya Ramaswamy/EVP
Date: 01/26/06

Uncontrolled Potential Emissions (tons/year)

	Emissions Generating Activity					
Pollutant	Metal Powder Processes	Sintering furnaces	Evaporators	Lathe Operation*	Boilers	**TOTAL**
PM	1.95	0.05	0.01	Negligible	0.02	2.03
PM10	1.95	0.22	0.03	Negligible	0.07	2.27
SO2	0.00	0.02	0.00	0.00	0.01	0.03
NOx	0.00	2.85	0.41	0.00	0.92	4.18
VOC	0.00	0.16	0.02	0.00	0.05	0.23
CO	0.00	2.39	0.35	0.00	0.77	3.51
vorst case single HAI	0.00	0.04 (Hexane)	0.01 (Hexane)	0.00	0.02 (Hexane)	0.07 (Hexane)
total HAPs	0.00	0.05	0.01	0.00	0.02	0.08

Total emissions based on rated capacity at 8,760 hours/year.

Controlled Potential Emissions (tons/year)

	Emissions Generating Activity					
Pollutant	Metal Powder Processes	Sintering furnaces	Evaporators	Lathe Operation*	Boilers	**TOTAL**
PM	0.02	0.05	0.01	Negligible	0.02	0.10
PM10	0.02	0.22	0.03	Negligible	0.07	0.34
SO2	0.00	0.02	0.00	0.00	0.01	0.03
NOx	0.00	2.85	0.41	0.00	0.92	4.18
VOC	0.00	0.16	0.02	0.00	0.05	0.23
CO	0.00	2.39	0.35	0.00	0.77	3.51
vorst case single HAI	0.00	0.04 (Hexane)	0.01 (Hexane)	0.00	0.02 (Hexane)	0.07 (Hexane)
total HAPs	0.00	0.05	0.01	0.00	0.02	0.08

Total emissions based on rated capacity at 8,760 hours/year, after control.

*Based on the information provided by the source, there is no PM emissions from the lathe machine while shaving the metal from the parts and negligible PM/PM10 emissions from the dry lathe operations.

Appendix A: Emissions Calculations
Emissions from Metal Powder Processes

Company Name: Sintering Technologies, Inc.
Address City IN Zip: 1024 Barachel Lane, Greensburg, Indiana 47240
Permit Number: 031-22538-00017
Plt ID: 031-00017
Reviewer: Surya Ramaswamy/EVP
Date: 01/26/06

Description of Metal Powder Processes

a) Powder Mix Room: Consists of four (4) double cone mixers with maximum rated capacities of 250kg, 500kg, 1000kg and 1000kg; two (2) sifters; one (1) weighing carousel; and one (1) powder invertor. The Powder Mix Room is controlled with one (1) OptiFlow Cartridge Filter Dust Collector

b) Twenty three (23) compacting presses with maximum capacity ranging from 40 to 880 tons controlled by two (2) fabric filter baghouse systems and three (3) dust collectors.

Uncontrolled Potential PM/PM10 Emissions

Established PM Emission Rate from 16 machines handling Metal Powd	**0.23 lb/hr**
PM Emission Rate from a machine handling Metal Powder	**0.014375 lb/hr**
No. of Machines Handling Metal Powder, After Modification	**31**
PM Emission Rate After Modification	**0.45 lb/hr**
PM/PM10 Emissions	**1.95 TPY**

Controlled Potential PM/PM10 Emissions

Control Efficiency	**99.00%**
PM/PM10 Emissions	**0.02 TPY**

Note:

As determined in Exemption 031-4144-00017, issued on January 5, 1995. The established PM emission rate were based on a mass balance on a similar process of Sintering Technologies, Inc. and determined that only 0.23 lb/hr powdered metal was available as airborne material. This equates to only about 0.05% of the spillage around the mixers and presses. The physical characteristics of the powdered iron do not promote the potential for airborne emission. The average size of the iron powder particle used is 180 microns and the bulk density is about 200 lbs/ft^3 .

Methodology:

Uncontrolled Potential PM/PM10 Emissions = PM Emission Rate x 8760 $\frac{\text{hours}}{\text{year}}$ x 0.005 $\frac{\text{Lbs}}{\text{Ton}}$

Controlled Potential PM/PM10 Emissions = Uncontrolled Potential PM/PM10 Emissions x (1-Control Efficeincy)

Appendix A: Emissions Calculations
Emission from Furnaces
Company Name: **Sintering Technologies, Inc.**
Address City IN Zip: **1024 Barachel Lane, Greensburg, Indiana 47240**
Permit Number: **031-22538-00017**
Plt ID: **031-00017**
Reviewer: **Surya Ramaswamy/EVP**
Date: **01/26/06**

	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
20 Sintering Furnances with 26 Natural Gas Fired Flame Curtains	6.500	
Total Heat Input	6.500	56.9

	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	0.05	0.22	0.02	2.85	0.16	2.39

*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

See next page for HAPs emissions calculations.

Appendix A: Emissions Calculations
Emission from Furnaces
HAPs Emissions
Company Name: Sintering Technologies, Inc.
Address City IN Zip: 1024 Barachel Lane, Greensburg, Indiana 47240
Permit Number: 031-22538-00017
Plt ID: 031-00017
Reviewer: Surya Ramaswamy/EVP
Date: 01/26/06

	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	5.979E-05	3.416E-05	2.135E-03	5.125E-02	9.680E-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	1.424E-05	3.132E-05	3.986E-05	1.082E-05	5.979E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Emission from Evaporators

Company Name: Sintering Technologies, Inc.
Address City IN Zip: 1024 Barachel Lane, Greensburg, Indiana 47240
Permit Number: 031-22538-00017
Plt ID: 031-00017
Reviewer: Surya Ramaswamy/EVP
Date: 01/26/06

	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
Evaporation No.1	0.195	
Evaporation No.2	0.750	
Total Heat Input	0.945	8.3

	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	0.01	0.03	0.00	0.41	0.02	0.35

*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

See next page for HAPs emissions calculations.

Appendix A: Emissions Calculations
Emission from Evaporators
HAPs Emissions
Company Name: Sintering Technologies, Inc.
Address City IN Zip: 1024 Barachel Lane, Greensburg, Indiana 47240
Permit Number: 031-22538-00017
Plt ID: 031-00017
Reviewer: Surya Ramaswamy/EVP
Date: 01/26/06

	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	8.692E-06	4.967E-06	3.104E-04	7.450E-03	1.407E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.070E-06	4.553E-06	5.795E-06	1.573E-06	8.692E-06

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Boilers

Company Name: **Sintering Technologies, Inc.**
Address City IN Zip: **1024 Barachel Lane, Greensburg, Indiana 47240**
Permit Number: **031-22538-00017**
Plt ID: **031-00017**
Reviewer: **Surya Ramaswamy/EVP**
Date: **01/26/06**

	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
Boiler No.1	1.050	
Boiler No.2	1.050	
Total Heat Input	2.100	18.4

	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	0.02	0.07	0.01	0.92	0.05	0.77

*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

See next page for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Boilers
HAPs Emissions

Company Name: Sintering Technologies, Inc.
Address City IN Zip: 1024 Barachel Lane, Greensburg, Indiana 47240
Permit Number: 031-22538-00017
Plt ID: 031-00017
Reviewer: Surya Ramaswamy/EVP
Date: 01/26/06

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.932E-05	1.104E-05	6.899E-04	1.656E-02	3.127E-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	4.599E-06	1.012E-05	1.288E-05	3.495E-06	1.932E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.