



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: January 30, 2008
RE: Dow Corning, STI / 113-25781-00055
FROM: Matthew Stuckey, Deputy Branch 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, Suite N 501E, 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.dot12/3/07



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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(317) 232-8603
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January 30, 2008

Mr. Robert Crosby
Dow Corning, STI
P.O. Box 369
Kendallville, IN 46755

Re: Registration Notice-Only Change
No. R113-25781-00055

Dear Mr. Crosby:

Dow Corning, STI was issued a Registration No. R113-12767-00055 on December 1, 2000 for a stationary silicone rubber manufacturing facility located at 111 S Progress Drive, Kendallville, IN 46755. On December 26, 2007, the Office of Air Quality (OAQ) received an application from the source relating to construction and operation of a new pilot process to manufacture rubber compound. The new process will consist of one bag dump station, one weigh hopper, and two mixers (see attached calculations). The addition of these units to the registration is considered a notice-only change, since the potential emissions of regulated criteria pollutants and hazardous air pollutants are less than the ranges specified in 326 IAC 2-5.5-6(d)(10) and 326 IAC 2-5.5-6(d)(12), respectively. The uncontrolled/unlimited potential to emit of the entire source will continue to be within the threshold levels specified in 326 IAC 2-5.5-1(b)(1). No new state rules are applicable to this source. There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) or National Emission standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in this notice-only change. Additionally, the source requested that the registration be updated to indicate that the M-110 Compound Mixer, 1.5 MMBtu/hr boiler, and 0.938 MMBtu/hr space heater were removed from the source. Finally, the source requested that the registration be updated to clarify the existing emission unit descriptions. This change to the registration is considered a notice-only change pursuant to 326 IAC 2-5.5-6(d)(2).

In addition, IDEM has begun implementing a new procedure and will no longer list the name or title of the Authorized Individual (AI) in registrations. Pursuant to 326 IAC 2-5.5-6, the registration is hereby revised as follows, with deleted language as ~~strikeouts~~ and new language **bolded**:

- (a) Seven (7) sigma blade style mixers, each with a continuous nitrogen purge:
(1) Two (2) base mixers, identified as M-101 and M-102, with a combined maximum process rate of ~~589~~ **153** pounds per hour, venting through individual dump station baghouse filter systems and then exhausting at ambient temperatures to Stacks ~~9 M-101~~ and ~~40 M-102~~, respectively; and
(2) ~~2 five (5)~~ **Four (4)** compound mixers with a combined maximum process rate of ~~2089~~ **451.2** pounds per hour, venting through individual bag filters and then exhausting at ambient temperature: M-103 to Stack ~~5 M-103~~; M-104 to Stack ~~6 M-104~~; M-105 to Stack ~~7 M-105~~, and M-108 to Stack ~~4 M-108~~; and ~~M-110 to Stack 8~~; each with a maximum design flow rate of 5 dscm.
(b) One (1) natural gas-fired boiler, **identified as UT-106**, with a maximum heat input rate of 3.0 MMBtu/hr, **and exhausting to stack UT-106**.
(c) ~~One (1) natural gas-fired boiler with a maximum heat input rate of 1.5 MMBtu/hr.~~

- ~~(d) One (1) natural gas fired space heater with a maximum heat input rate of 0.938 MMBtu/hr.~~
- (ec) One (1) outdoor silo for storage of fumed silica products, **identified as MH-127**, with a capacity of 39,000 pounds, including one (1) diaphragm pump with a dilute phase transfer loading rate of 7,200 lb/hr, with PM emissions controlled by baghouse 11 and exhausted to a bin vent stack identified as Stack 44 **MH-127**.
- (fd) One (1) PRISM silicone rubber manufacturing operation, identified as PRISM, with emissions controlled by a vent condenser, identified as HX-103, and a baghouse, identified as DC-103, with emissions exhausting to stack DC-103.
- (ge) One (1) 3.4 MMBtu/hr natural gas fired steam boiler, identified as UT-126, with emission exhausted through Stack UT-126.
- (hf) One (1) 5 micron silica storage silo (MH-140) with capacity of 100,000 lbs including one (1) pneumatic transporter with a maximum rate of 3,000 lbs/hr with PM emissions controlled with a bin vent **and exhausting to stack MH-140**.
- (hg) One (1) 10 micron silica storage silo (MH-142) with a capacity of 100,000 lbs including one (1) pneumatic transporter with a maximum rate of 3,000 lbs/hr, with PM emission controlled with a bin vent **and exhausting to stack MH-142**.
- (jh) ~~Five (5)~~ **Three (3)** weigh hoppers, **identified as MH-103, MH-104, and MH-105**, equipped with bin vents that vent to the atmosphere.
- (ki) Two (2) compounding mixers (M-106 and M-107) equipped with **one (1)** weigh hoppers (**MH-106 and MH-107**), **each**. Both the mixers and the weigh hoppers are equipped with bin vents that emit into the atmosphere through Stack M-106, M-107, MH-106, and MH-107.
- (j) **One (1) rubber compound manufacturing process, consisting of the following emission units:**
- (1) **One (1) bag dump station, identified as MH-402, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a bin vent, and exhausting to the atmosphere through Stack MH-402.**
 - (2) **One (1) weigh hopper, identified as MH-403, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a bin vent, and exhausting to the atmosphere through Stack MH-403.**
 - (3) **One (1) 600L mixer, identified as M-404, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a pulse filter, and exhausting to the atmosphere through Stack MH-404.**
 - (4) **One (1) 110L mixer, identified as M-405, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a bin vent, and exhausting to the atmosphere through Stack MH-405.**

Upon further review, IDEM, OAQ has decided to make the following changes to the permit. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

1. All occurrences of IDEM's mailing addresses have been updated in the permit. Any occurrences of P.O. Box 6015 in the permit have been removed, any occurrences of the zip code 46206-6015 or 46204 have been revised to **46204-2251**, and all addresses have been revised to include a mail code (MC) as follows:

Asbestos Section:	MC 61-52 IGCN 1003
Compliance Branch:	MC 61-53 IGCN 1003
Permits Branch:	MC 61-53 IGCN 1003
Technical Support and Modeling Section:	MC 61-50 IGCN 1003

2. The following condition (326 IAC 5-1-2) was incorrectly listed twice in the registration.

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 Exemptions), 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) minute (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.

~~Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), 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) minute (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.~~

3. The following new condition has been included in this registration:

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.

4. The 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) allowable particulate matter emission rates have been updated and revised to clarify the allowable particulate matter emission rates for the emission units at the source.

~~326 IAC 6-3-2 (Process Operations)~~

~~Pursuant to CP-10553-00055, issued on March 8, 1999, the particulate matter (PM) from the silicone manufacturing shall be limited by the following:~~

~~Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:~~

$$\del E = 4.10 P^{0.67} \text{ where } E = \text{rate of emission in pounds per hour and } P = \text{process weight rate in tons per hour}$$

~~Allowable PM Emission Based on 326 IAC 6-3-2~~

Process	Allowable PM Emission (Pounds Per Hour)
Silos	
Previous Permitted Equipment*	9.67
New Equipment	12.05
Weigh Hoppers	
New Equipment	1.88
Compound Mixers	
Previous Equipment*	4.22
New Equipment	3.18
Base Mixers*	1.81
PRISM*	6.08

Allowable emissions are determined from the applicability of rule 326 IAC 6-2.

*From TSD Permit 113-10553-00055.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the following emission units and control devices shall not exceed the particulate emission rate when operating at the stated process weight rates calculated using the following equations:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process weight rate (tons per hour)	Allowable particulate emission rate (pounds per hour)
M-101 and M-102	0.077	0.73
MH-103, MH-104, MH-105, MH-106, and MH-107	0.085	0.79
MH-127*	3.6	9.67
MH-140 and MH-142**	5.0	12.05
HX-103*	1.80	6.08

*From TSD Permit No: 113-10553-00055

**From TSD Permit No: 113-12767-00055

The control equipment shall be in operation at all times the five (5) weight hoppers (MH-103 through MH-107), outdoor silo (MH-127), 5 micron silica silo (MH-140), 10 micron silica silo (MH-142), and the Prism silicone rubber manufacturing operation (HX-103) are in operation, in order to comply with this limit.

The source shall continue to operate according to 326 IAC 2-5.5. Please find enclosed the revised registration.

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 Brian Williams, at (800) 451-6027, press 0 and ask for Brian Williams or extension 4-5375, or dial (317) 234-5375.

Sincerely,

Original signed by
Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

IC/BMW

Attachment: Revised Registration and Calculation Tables

cc: File - Noble County
Noble County Health Department
Air Compliance Section
IDEM Northern Regional Office
Permit Tracking
Compliance Data Section
Permits Administrative and Development
Billing, Licensing and Training Section



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January 30, 2008

Mr. Robert Crosby
Dow Corning, STI
P.O. Box 369
Kendallville, IN 46755

Re: Notice-Only Change No. R113-25781-00055
Registered Construction and Operation Status

Dear Mr. Crosby:

Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following stationary silicone rubber manufacturing facility located at 111 S Progress Drive, Kendallville, IN 46755, is classified as registered:

- (a) Seven (7) sigma blade style mixers, each with a continuous nitrogen purge:
 - (1) Two (2) base mixers, identified as M-101 and M-102, with a combined maximum process rate of 153 pounds per hour, venting through individual dump station baghouse filter systems and then exhausting at ambient temperatures to Stacks M-101 and M-102, respectively; and
 - (2) Four (4) compound mixers with a combined maximum process rate of 451.2 pounds per hour, venting through individual bag filters and then exhausting at ambient temperature: M-103 to Stack M-103; M-104 to Stack M-104; M-105 to Stack M-105, and M-108 to Stack M-108; each with a maximum design flow rate of 5 dscm.
- (b) One (1) natural gas-fired boiler, identified as UT-106, with a maximum heat input rate of 3.0 MMBtu/hr, and exhausting to stack UT-106.
- (c) One (1) outdoor silo for storage of fumed silica products, identified as MH-127, with a capacity of 39,000 pounds, including one (1) diaphragm pump with a dilute phase transfer loading rate of 7,200 lb/hr, with PM emissions controlled by baghouse 11 and exhausted to a bin vent stack identified as Stack MH-127.
- (d) One (1) PRISM silicone rubber manufacturing operation, identified as PRISM, with emissions controlled by a vent condenser, identified as HX-103, and a baghouse, identified as DC-103, with emissions exhausting to stack DC-103.
- (e) One (1) 3.4 MMBtu/hr natural gas fired steam boiler, identified as UT-126, with emission exhausted through Stack UT-126.
- (f) One (1) 5 micron silica storage silo (MH-140) with capacity of 100,000 lbs including one (1) pneumatic transporter with a maximum rate of 3,000 lbs/hr with PM emissions controlled with a bin vent and exhausting to stack MH-140.

- (g) One (1) 10 micron silica storage silo (MH-142) with a capacity of 100,000 lbs including one (1) pneumatic transporter with a maximum rate of 3,000 lbs/hr, with PM emission controlled with a bin vent and exhausting to stack MH-142.
- (h) Three (3) weigh hoppers, identified as MH-103, MH-104, and MH-105, equipped with bin vents that vent to the atmosphere.
- (i) Two (2) compounding mixers (M-106 and M-107) equipped with one (1) weigh hopper (MH-106 and MH-107), each. Both the mixers and the weight hoppers are equipped with bin vents that emit into the atmosphere through Stack M-106, M-107, MH-106, and MH-107.
- (j) One (1) rubber compound manufacturing process, consisting of the following emission units:
 - (1) One (1) bag dump station, identified as MH-402, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a bin vent, and exhausting to the atmosphere through Stack MH-402.
 - (2) One (1) weigh hopper, identified as MH-403, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a bin vent, and exhausting to the atmosphere through Stack MH-403.
 - (3) One (1) 600L mixer, identified as M-404, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a pulse filter, and exhausting to the atmosphere through Stack MH-404.
 - (4) One (1) 110L mixer, identified as M-405, with a maximum capacity of 0.086 tons of rubber per hour, with particulate controlled by a bin vent, and exhausting to the atmosphere through Stack MH-405.

The following conditions shall be applicable:

1. 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 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.
2. 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.
3. 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)
Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from UT-106 and UT-126 shall be limited to 0.6 pounds per MMBtu heat input.

4. 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the following emission units and control devices shall not exceed the particulate emission rate when operating at the stated process weight rates calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process weight rate (tons per hour)	Allowable particulate emission rate (pounds per hour)
M-101 and M-102	0.077	0.73
MH-103, MH-104, MH-105, MH-106, and MH-107	0.085	0.79
MH-127*	3.6	9.67
MH-140 and MH-142**	5.0	12.05
HX-103*	1.80	6.08

*From TSD Permit No: 113-10553-00055
**From TSD Permit No: 113-12767-00055

The control equipment shall be in operation at all times the five (5) weight hoppers (MH-103 through MH-107), outdoor silo (MH-127), 5 micron silica silo (MH-140), 10 micron silica silo (MH-142), and the Prism silicone rubber manufacturing operation (HX-103) are in operation, in order to comply with this limit.

This source remains a registered source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

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,

Original signed by
Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

IC/BMW

cc: File - Noble County
Noble County Health Department
Air Compliance Section
IDEM Northern Regional Office
Permit Tracking
Compliance Data Section
Permits Administrative and Development
Billing, Licensing and Training Section

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Dow Corning, STI
Address:	111 South Progress Drive East, Kendallville, IN 46755
Phone #:	(260) 343-2380
Registration #:	113-25871-00055

Certification by the Authorized Individual

I hereby certify that Dow Corning, STI is still in operation and is in compliance with the requirements of Registration R113-25871-00055.

Name (typed):

Title:

Signature:

Phone Number:

Date:

**Appendix A: Emissions Calculations
Summary of Emissions**

**Company Name: Dow Corning, STI
Address City IN Zip: 111 S Progress Drive, Kendallville, IN 46755
Permit Number: 113-25781-00055
Reviewer: Brian Williams**

Uncontrolled Potential to Emit of New Units (tons/yr)								
Process	PM	PM10	SO₂	NOx	VOC	CO	Total HAPs	Single HAP
MH-402 Bag Dump Station	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00
MH-403 Weigh Hopper	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00
M-404 600L Mixer	0.674	0.674	0.00	0.00	8.03	0.00	6.35	6.35
M-405 110L Mixer	0.004	0.004	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.03	2.03	0.00	0.00	8.03	0.00	6.35	6.35

Potential to Emit of Entire Source after Issuance (tons/yr)								
Process	PM	PM10	SO₂	NOx	VOC	CO	Total HAPs	Single HAP
M-101 Base Mixer	3.35	2.61	0.0	0.0	0.0	0.0	0.0	0.0
M-102 Base Mixer	3.35	2.61	0.0	0.0	0.0	0.0	0.0	0.0
M-103 Compound Mixer	0.29	0.29	0.0	0.0	0.0	0.0	0.0	0.0
M-104 Compound Mixer	0.07	0.07	0.0	0.0	0.0	0.0	0.0	0.0
M-105 Compound Mixer	0.29	0.29	0.0	0.0	0.0	0.0	0.0	0.0
M-108 Compound Mixer	0.07	0.07	0.0	0.0	0.0	0.0	0.0	0.0
M-106 Compound Mixer	0.88	0.88	0.0	0.0	0.0	0.0	0.0	0.0
M-107 Compound Mixer	0.88	0.88	0.0	0.0	0.0	0.0	0.0	0.0
MH-103 Weigh Hopper*	0.11	0.11	0.0	0.0	0.0	0.0	0.0	0.0
MH-104 Weigh Hopper*	0.11	0.11	0.0	0.0	0.0	0.0	0.0	0.0
MH-105 Weigh Hopper*	0.11	0.11	0.0	0.0	0.0	0.0	0.0	0.0
MH-106 Weigh Hopper*	0.11	0.11	0.0	0.0	0.0	0.0	0.0	0.0
MH-107 Weigh Hopper*	0.11	0.11	0.0	0.0	0.0	0.0	0.0	0.0
Outside Silo*	0.16	0.16	0.0	0.0	0.0	0.0	0.0	0.0
5 micron silica silo*	0.05	0.05	0.0	0.0	0.0	0.0	0.0	0.0
10 micron silica silo*	0.05	0.05	0.0	0.0	0.0	0.0	0.0	0.0
Prism*	0.08	0.08	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Combustion	0.05	0.21	0.02	2.80	0.15	2.35	0.053	0.05 Hexane
Plant Atmosphere*	0.792	0.75	0.0	0.0	0.0	0.0	0.0	0.0
MH-402 Bag Dump Station	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00
MH-403 Weigh Hopper	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00
M-404 600L Mixer	0.674	0.674	0.00	0.00	8.03	0.00	6.35	6.35 Methanol
M-405 110L Mixer	0.004	0.004	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.93	11.58	0.02	2.80	8.18	2.35	6.40	6.35 Methanol

*Potential to Emit obtained from TSD Permit No: 113-12767-00055

Appendix A: Emissions Calculations

**Pilot Process
PM/PM10 Emissions**

Company Name: Dow Corning, STI
Address City IN Zip: 111 S Progress Drive, Kendallville, IN 46755
Permit Number: 113-25781-00055
Reviewer: Brian Williams

Process	Material Usage (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	Uncontrolled PM Emissions (lb/hr)	Uncontrolled PM10 Emissions (lb/hr)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10 Emissions (tons/yr)	Control Efficiency %	Controlled PM Emissions (lb/hr)	Controlled PM10 Emissions (lb/hr)	Controlled PM Emissions (tons/yr)	Controlled PM10 Emissions (tons/yr)
MH-402 Bag Dump Station*	0.086	1.79	1.79	0.154	0.154	0.67	0.67	99.50%	0.0008	0.0008	0.0034	0.0034
MH-403 Weigh Hopper*	0.086	1.79	1.79	0.154	0.154	0.67	0.67	99.50%	0.0008	0.0008	0.0034	0.0034
M-404 600L Mixer*	0.086	1.79	1.79	0.154	0.154	0.67	0.67	99.90%	1.54E-04	1.54E-04	6.74E-04	6.74E-04
M-405 110L Mixer**	0.086	0.011	0.011	0.001	0.001	0.004	0.004	99.50%	4.73E-06	4.73E-06	2.07E-05	2.07E-05
Total						2.03	2.03				0.0074	0.0074

Methodology

*PM/PM10 Emission Factor from AP 42, Chapter 11.23, Table 11.23.3, SCC 3-03-023-45 (3.2 lb/ton)

*PM/PM10 Emission Factor = 3.2 (lb/ton) * 0.08 (tons of powder/batch) * 1/0.143 (tons of rubber/batch) = 1.79 (lb/ton)

**PM/PM10 Emission Factor from AP 42, Chapter 9.9.1, Table 9.9.1-1, SCC 3-02-005-40 (0.025 lb/ton)

**PM/PM10 Emission Factor = 0.025 (lb/ton) * 0.06 (tons of guar gum/batch) * 1/0.143 (tons of rubber/batch) = 0.011 (lb/ton)

Uncontrolled PM/PM10 Emissions (lb/hr) = material usage (tons/hr) * PM/PM10 Emission Factor (lb/ton)

Uncontrolled PM/PM10 Emissions (tons/yr) = material usage (tons/hr) * PM/PM10 Emission Factor (lb/ton) * 1/2000 (ton/lbs) * 8760 (hrs/yr)

Controlled PM/PM10 Emissions (lb/hr) = Uncontrolled PM/PM10 emissions (lb/hr) * (1 - % Control Efficiency)

Controlled PM/PM10 Emissions (tons/yr) = Uncontrolled PM/PM10 emissions (tons/yr) * (1 - % Control Efficiency)

**Appendix A: Emissions Calculations
Pilot Process
VOC/HAPs Emissions**

**Company Name: Dow Corning, STI
Address City IN Zip: 111 S Progress Drive, Kendallville, IN 46755
Permit Number: 113-25781-00055
Reviewer: Brian Williams**

Process	Material Usage (tons/hr)	VOC Emission Factor (lbs/ton)	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)	Methanol Emission Factor (lbs/ton)	Methanol Emissions (lbs/hr)	Methanol Emissions (tons/yr)
M-404 600L Mixer	0.086	21.309	1.83	8.03	16.863	1.45	6.35

Methodology

VOC/HAP Emission Factors provided by source based on testing at the facility

VOC Emissions (tons/yr) = material usage (tons/hr) * VOC emission factor (lbs/ton) * 1/2000 (ton/lbs) * 8760 (hrs/yr)

HAP Emissions (tons/yr) = material usage (tons/hr) * HAP emission factor (lbs/ton) * 1/2000 (ton/lbs) * 8760 (hrs/yr)

**Appendix A: Emissions Calculations
Existing Mixers
PM/PM10 Emissions**

Company Name: Dow Corning, STI
Address City IN Zip: 111 S Progress Drive, Kendallville, IN 46755
Permit Number: 113-25781-00055
Reviewer: Brian Williams

Potential to Emit of Existing Mixers (tons/year)												
Process	Material Usage (lbs/hr)	PM Emission Factor (lb PM/lb)	PM10 Emission Factor (lb PM/lb)	Uncontrolled PM Emissions (lb/hr)	Uncontrolled PM10 Emissions (lb/hr)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10 Emissions (tons/yr)	Control Efficiency %	Controlled PM Emissions (lb/hr)	Controlled PM10 Emissions (lb/hr)	Controlled PM Emissions (tons/yr)	Controlled PM10 Emissions (tons/yr)
M-101 Base Mixer	76.5	0.01	0.0078	0.765	0.597	3.35	2.61	0.00%	0.7650	0.5967	3.3507	2.6135
M-102 Base Mixer	76.5	0.01	0.0078	0.765	0.597	3.35	2.61	0.00%	0.7650	0.5967	3.3507	2.6135
M-103 Compound Mixer	112.8	5.87E-04	5.87E-04	0.066	0.066	0.29	0.29	99.50%	3.31E-04	3.31E-04	1.45E-03	1.45E-03
M-104 Compound Mixer	112.8	1.50E-04	1.50E-04	0.017	0.017	0.07	0.07	99.50%	8.46E-05	8.46E-05	3.71E-04	3.71E-04
M-105 Compound Mixer	112.8	5.87E-04	5.87E-04	0.066	0.066	0.29	0.29	99.50%	3.31E-04	3.31E-04	1.45E-03	1.45E-03
M-108 Compound Mixer	112.8	1.50E-04	1.50E-04	0.017	0.017	0.07	0.07	99.50%	8.46E-05	8.46E-05	3.71E-04	3.71E-04
M-106 Compound Mixer	342.5	5.84E-04	5.84E-04	0.200	0.200	0.88	0.88	99.50%	1.00E-03	1.00E-03	4.38E-03	4.38E-03
M-107 Compound Mixer	342.5	5.84E-04	5.84E-04	0.200	0.200	0.88	0.88	99.50%	1.00E-03	1.00E-03	4.38E-03	4.38E-03
Total						9.18	7.71				6.71	5.24

Methodology

PM/PM10 Emission Factors from TSD Permit No: 113-12767-00055

Uncontrolled PM/PM10 Emissions (lb/hr) = material usage (tons/hr) * PM/PM10 Emission Factor (lb/ton)

Uncontrolled PM/PM10 Emissions (tons/yr) = material usage (tons/hr) * PM/PM10 Emission Factor (lb/ton) * 1/2000 (ton/lbs) * 8760 (hrs/yr)

Controlled PM/PM10 Emissions (lb/hr) = Uncontrolled PM/PM10 emissions (lb/hr) * (1 - % Control Efficiency)

Controlled PM/PM10 Emissions (tons/yr) = Uncontrolled PM/PM10 emissions (tons/yr) * (1 - % Control Efficiency)

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

Company Name: Dow Corning, STI
Address City IN Zip: 111 S Progress Drive, Kendallville, IN 46755
Permit Number: 113-25781-00055
Reviewer: Brian Williams

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

6.4

56.1

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.1	0.2	0.02	2.8	0.2	2.4

*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

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	5.887E-05	3.364E-05	2.102E-03	5.046E-02	9.531E-05

Emission Factor in lb/MMcf	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.402E-05	3.084E-05	3.924E-05	1.065E-05	5.887E-05

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

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.