



# 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](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: December 18, 2008

RE: SABIC Innovative Plastics US LLC / 005-27100-00049

FROM: Matthew Stuckey, 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



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Mr. Joseph Tavenner  
SABIC Innovative Plastics US LLC  
945 South Marr Road  
Columbus, Indiana 47201

December 18, 2008

Re: Registration Notice-Only Change  
No. R005-27100-00049

Dear Mr. Tavenner:

SABIC Innovative Plastics US LLC was issued a Reregistration No. R005-15779-00049 on July 3, 2003 for a stationary custom plastic manufacturing plant located at 945 South Marr Road, Columbus, Indiana 47201. On October 30, 2008, the Office of Air Quality (OAQ) received an application from the source requesting the following:

- (1) The source requested that the registration be revised to correct a typographical error. The current registration lists the source name as SABIC Innovative Plastics US, LLC. However, there should be no comma between "US" and "LLC." This change to the registration is considered a notice-only change pursuant to 326 IAC 2-5.5-6(d)(1).
- (2) The source requested that the registration be revised to indicate changes in descriptive information concerning the source or emissions unit or units. The emission unit descriptions for Line 72, 73, and 74 should be amended to reflect that a fabric filter controls the grinders. In addition, the research and development line emission unit description should be amended to reflect that the line only consists of one development molding unit. Finally, the source has requested that the research and development coextrusion line emission unit description be amended to reflect that a dust collector controls the particulate emissions. These changes to the registration are considered a notice-only change pursuant to 326 IAC 2-5.5-6(d)(2).
- (3) The source requested that the maximum capacity for the three existing grinders be revised from 10 pounds per hour to 120 pounds per hour, each. As a result, the potential to emit PM increased from 0.1 tons per year to 1.18 tons per year and the potential to emit PM10 increased from 0.059 tons per year to 0.71 tons per year. In addition, the source requested that the potential to emit calculations be updated to reflect potential emissions from the pneumatic conveyance and gravity transfer of the ground material. These modifications to the registration are 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) (See Attachment A). 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.
- (4) The source identified two existing molding units located in the existing color lab that are not included in the registration. The molding units have a potential to emit 0.007 tons of VOC per year. Therefore, 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) (See Attachment A). 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.

- (5) The source requested to construct and operate a new bagging system that will consist of a pellet holding bin that will feed a bag filling station. Emissions from the bagging system will be uncontrolled and result from manually loading pellets into the holding bin and from filling the bags. As a result, the bagging system will have a potential to emit 0.26 tons of PM and PM10 per year. 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) (See Attachment A). 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.
- (6) The source requested that the potential to emit calculations for various emission units at the source be updated to reflect the correct maximum throughput capacities and emission factors. These updates did not require any revisions to the registration and are 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) (See Attachment A).

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**:

Entire Registration: SABIC Innovative Plastics US, LLC

...

(a) Four (4) long fiber filled extruded thermoplastic manufacturing lines, including:

...

(2) Line 72, constructed in 1995, having a maximum production rate of 1,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of ~~40~~ **120** pounds of backflow per hour, controlled with a **fabric** filter.

(3) Line 73, constructed in 1998, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of ~~40~~ **120** pounds of backflow per hour, controlled with a **fabric** filter.

(4) Line 74, constructed in 2000, having a maximum throughput of 1,700 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of ~~40~~ **120** pounds of backflow per hour, controlled with a **fabric** filter.

...

(f) ~~One (1) research and development line, constructed in 1998, consisting of a feeder, hopper, extruder, die block, cooling bath, pelletizer, and mold, with a maximum production capacity of 300 pounds of product per hour, with emissions of particulate matter controlled by a dust collector.~~ **One (1) development molding unit, constructed in 1998, with a maximum production capacity of 22.5 pounds of product per hour.**

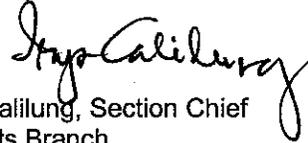
(k) One (1) R&D coextrusion line (identified as RD3), constructed in 2004, with a maximum production rate of 300 pounds of product per hour, **with emissions of particulate matter controlled by a dust collector.**

- ...
- (o) **Two (2) molding units, located in the color lab, identified as CL1 and CL2, constructed in 2002 and 2008, respectively. Each molding unit has a maximum throughput of 1.5 pounds of product per hour.**
  - (p) **One (1) bagger system, approved for construction in 2008, with a maximum capacity of 3,000 pounds of resin pellets per hour.**
- ...

The source shall continue to operate according to 326 IAC 2-5.5. Please find enclosed the revised registration. A copy of the registration is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. 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](http://www.idem.in.gov)

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,



Iryn Calilung, Section Chief  
Permits Branch  
Office of Air Quality

IC/BMW

Attachment: Revised Registration and Attachment A (Emission Calculations)

cc: File - Bartholomew County  
Bartholomew County Health Department  
Air Compliance Section  
Compliance Data Section  
Permits Administrative and Development  
Billing, Licensing and Training Section



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## REGISTRATION OFFICE OF AIR QUALITY

**SABIC Innovative Plastics US LLC**  
**945 South Marr Road**  
**Columbus, Indiana 47201**

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 005-15779-00049	
Original signed by: Paul Dubenetzky, Chief Permits Branch Office of Air Quality	Issuance Date: July 3, 2003

First Registration Revision No. 005-17704-00049, issued on August 5, 2003  
First Registration Notice-Only Change No. 005-17886-00049, issued on October 8, 2003  
Second Registration Revision No. 005-18797-00049, issued on May 28, 2004  
Third Registration Revision No. 005-19868-00049, issued on November 4, 2004  
Fourth Registration Revision No. 005-23292-00049, issued on December 4, 2006  
Second Registration Notice-Only Change No. 005-24985-00049, issued on July 19, 2007  
Third Registration Notice-Only Change No. 005-25229-00049, issued on September 10, 2007  
Fourth Registration Notice-Only Change No. 005-25552-00049, issued on December 11, 2007

Fifth Registration Notice-Only Change No. 005-27100-00049	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date:  December 18, 2008

## SECTION A

## SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

### A.1 General Information

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The Registrant owns and operates a stationary custom plastic manufacturing plant.

Source Address:	945 South Marr Road, Columbus, Indiana 47201
Mailing Address:	945 South Marr Road, Columbus, Indiana 47201
General Source Phone Number:	(812) 372-9197
SIC Code:	3087
County Location:	Bartholomew County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

### A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) Four (4) long fiber filled extruded thermoplastic manufacturing lines, including:
  - (1) Line 71, constructed in 1994 and modified in 2006, having a maximum production rate of 1,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector.
  - (2) Line 72, constructed in 1995, having a maximum production rate of 1,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of 120 pounds of backflow per hour, controlled with a fabric filter.
  - (3) Line 73, constructed in 1998, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of 120 pounds of backflow per hour, controlled with a fabric filter.
  - (4) Line 74, constructed in 2000, having a maximum throughput of 1,700 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of 120 pounds of backflow per hour, controlled with a fabric filter.
- (b) Six (6) short fiber filled extruded thermoplastic manufacturing lines, including:
  - (1) Line 81, constructed in 1989, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector.
  - (2) Line 82, constructed in 1989, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector.
  - (3) Line 84, constructed in 2002, having a maximum production rate of 200 pounds per hour, with emissions of particulate matter controlled using a dust collector.

- (4) Line 90, constructed in January 2003, having a maximum production rate of 1,800 pounds per hour, with emissions of particulate matter controlled by a dust collector.
  - (5) Line 91, constructed in 1994, having a maximum production rate of 2,000 pounds per hour, with emissions of particulate matter controlled by a dust collector.
  - (6) Line 92, constructed in 1999, having a maximum production rate of 3,000 pounds of product per hour, with emissions of particulate matter controlled by a dust collector.
- (c) Pneumatic conveyance systems used to transfer raw material, intermediates, and finished products between silos, storage bins and hoppers. Each system uses a series of cyclones, filters and dust collectors, which collect the transferred material and in some cases, prevent dust from entering the vacuum pumps.
  - (d) One (1) color pigment blending room, constructed in 2002, having a maximum production rate of 237 pounds per hour. Emissions of particulate matter are controlled using a dust collector.
  - (e) One (1) molding room, constructed in 1994, consisting of two (2) molding units, identified as QC1 and QC2. Each molding unit has a maximum throughput of 1.5 pounds of product per hour.
  - (f) One (1) development molding unit, constructed in 1998, with a maximum production capacity of 22.5 pounds of product per hour.
  - (g) One (1) natural gas fired makeup air unit with a maximum heat input capacity of 1.458 MMBtu per hour for the long-fiber product research and development lab constructed in January 2003.
  - (h) Two (2) natural gas-fired pyrolysis cleaning ovens, identified as Units G1, and F, having a maximum heat input capacity of 0.37 and 1.5 MMBtu per hour, respectively. These ovens were constructed in 1994 and 1997, respectively.
  - (i) Natural gas-fired heaters having a combined heat input capacity of 28.08 MMBtu per hour.
  - (j) A cold cleaner used to perform non-halogenated organic solvent degreasing (mineral spirits) of parts in the maintenance shop that does not exceed 145 gallons per 12 months and that is not subject to 326 IAC 20-6. The cold cleaner is an offline system, batch type, which uses a cold spray, and is equipped with drain and remote reservoir with insignificant exposure to outside air.
  - (k) One (1) R&D coextrusion line (identified as RD3), constructed in 2004, with a maximum production rate of 300 pounds of product per hour, with emissions of particulate matter controlled by a dust collector.
  - (l) One (1) natural gas-fired rooftop unit, constructed in 2004, with a maximum heat input capacity of 0.80 MMBtu per hour, for the Gate 1 Office Area.
  - (m) One (1) central vacuum system, constructed in 2004, consisting of two units (identified as CV1 and CV2). CV1 consists of a turbine providing vacuum suction through a vessel containing cartridge filters. CV2 consists of a turbine providing vacuum suction through an initial hopper for removal of pellets and a second hopper containing a bag filter.



## **SECTION B GENERAL CONDITIONS**

### **B.1 Definitions [326 IAC 2-1.1-1]**

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Terms in this registration 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 2-1.1-1) shall prevail.

### **B.2 Effective Date of Registration [IC 13-15-5-3]**

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Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

### **B.3 Registration Revocation [326 IAC 2-1.1-9]**

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Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM, the fact that continuance of this registration is not consistent with purposes of this article.

### **B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of permits established prior to Registration No. 005-15779-00049 and issued pursuant to permitting programs approved into the state implementation plan have been either:
  - (1) incorporated as originally stated,
  - (2) revised, or
  - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

### **B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]**

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Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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



## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

### Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

#### C.1 Opacity [326 IAC 5-1]

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, unless otherwise stated in this registration:

- (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.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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).

## SECTION D.1

## OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) Four (4) long fiber filled extruded thermoplastic manufacturing lines, including:
  - (1) Line 71, constructed in 1994 and modified in 2006, having a maximum production rate of 1,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector.
  - (2) Line 72, constructed in 1995, having a maximum production rate of 1,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of 120 pounds of backflow per hour, controlled with a fabric filter.
  - (3) Line 73, constructed in 1998, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of 120 pounds of backflow per hour, controlled with a fabric filter.
  - (4) Line 74, constructed in 2000, having a maximum throughput of 1,700 pounds of product per hour, with emissions of particulate matter controlled using a dust collector, equipped with a grinder having a maximum capacity of 120 pounds of backflow per hour, controlled with a fabric filter.
- (b) Six (6) short fiber filled extruded thermoplastic manufacturing lines, including:
  - (1) Line 81, constructed in 1989, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector.
  - (2) Line 82, constructed in 1989, having a maximum production rate of 2,000 pounds of product per hour, with emissions of particulate matter controlled using a dust collector.
  - (3) Line 84, constructed in 2002, having a maximum production rate of 200 pounds per hour, with emissions of particulate matter controlled using a dust collector.
  - (4) Line 90, constructed in January 2003, having a maximum production rate of 1,800 pounds per hour, with emissions of particulate matter controlled by a dust collector.
  - (5) Line 91, constructed in 1994, having a maximum production rate of 2,000 pounds per hour, with emissions of particulate matter controlled by a dust collector.
  - (6) Line 92, constructed in 1999, having a maximum production rate of 3,000 pounds of product per hour, with emissions of particulate matter controlled by a dust collector.
- (c) Pneumatic conveyance systems used to transfer raw material, intermediates, and finished products between silos, storage bins and hoppers. Each system uses a series of cyclones, filters and dust collectors, which collect the transferred material and in some cases, prevent dust from entering the vacuum pumps.
- (d) One (1) color pigment blending room, constructed in 2002, having a maximum production rate of 237 pounds per hour. Emissions of particulate matter are controlled using a dust collector.

(k) One (1) R&D coextrusion line (identified as RD3), constructed in 2004, with a maximum production rate of 300 pounds of product per hour, with emissions of particulate matter controlled by a dust collector.

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

**Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]**

**D.1.1 Particulate [326 IAC 6-3-2]**

- (a) Pursuant to 326 IAC 6-3-1(b)(14) (Particulate Emission Limitations for Manufacturing Processes), the long fiber filled extruded thermoplastic manufacturing lines (Lines 71, 72, 73, and 74), short fiber filled extruded thermoplastic manufacturing lines (Lines 81, 82, 84, 90, and 91), pneumatic conveyance systems, color pigment blending room, and the R&D coextrusion line are exempt from the requirements of 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) because the potential particulate emissions are less than 0.551 pounds per hour, each, when operating at the maximum process weight rate.
- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emission rate from the short fiber filled extruded thermoplastic manufacturing line (Line 92) shall not exceed 5.38 pounds per hour when operating at a process weight rate of 1.5 tons per hour.

The pound per hour limitation was calculated with the following equation:

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

$$E = 4.10 P^{0.67}$$

Where E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour

## SECTION D.2

## OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (h) Two (2) natural gas-fired pyrolysis cleaning ovens, identified as Units G1, and F, having a maximum heat input capacity of 0.37 and 1.5 MMBtu per hour, respectively. These ovens were constructed in 1994 and 1997, respectively.
- (n) One (1) natural gas-fired pyrolysis cleaning oven (identified as Unit G3), constructed in 2004, having a maximum heat input capacity of 0.55 MMBtu per hour. Emissions from this oven are exhausted to the atmosphere through stack G3.

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

### Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

#### D.2.1 Incinerators [326 IAC 4-2-2]

Each of the pyrolysis cleaning ovens (identified as units G1, G3, and F) has a maximum solid waste capacity of less than 100 pounds per hour. Pursuant to 326 IAC 4-2 (Incinerators), each of these three incinerator units shall:

- (a) Consist of primary and secondary chambers or the equivalent;
- (b) Be equipped with a primary burner unless burning wood products;
- (c) Comply with 326 IAC 5-1 and 326 IAC 2;
- (d) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in 326 IAC 4-2-2(c); and
- (e) Not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air.
- (f) If any of the requirements of (d)(1) through (d)(5) above are not met, the Permittee shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.

The Permittee operating the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.

#### D.2.2 Carbon Monoxide Emission Limits [326 IAC 9-1-2]

Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the Permittee shall not operate the pyrolysis cleaning ovens (identified as units G1, G3, and F) unless the waste gas stream is burned in one of the following:

- (a) Direct-flame afterburner; or
- (b) Secondary chamber.

## SECTION D.3

## OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (j) A cold cleaner used to perform non-halogenated organic solvent degreasing (mineral spirits) of parts in the maintenance shop that does not exceed 145 gallons per 12 months and that is not subject to 326 IAC 20-6. The cold cleaner is an offline system, batch type, which uses a cold spray, and is equipped with drain and remote reservoir with insignificant exposure to outside air.

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

### Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

#### D.3.1 Organic Solvent Degreasing Operations [326 IAC 8-3-1]

Pursuant to 326 IAC 8-3-1 (Organic Solvent Degreasing Operations), the cold cleaning degreaser is subject to the requirements of 326 IAC 8-3-2 (Cold Cleaner Operations), because it was constructed in 1998, after the applicability date of January 1, 1980. Pursuant to this rule, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE BRANCH**

**REGISTRATION  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

<b>Company Name:</b>	SABIC Innovative Plastics US LLC
<b>Address:</b>	945 South Marr Road
<b>City:</b>	Columbus, Indiana 47201
<b>Phone Number:</b>	(812) 372-9197
<b>Registration No.:</b>	005-15779-00049

I hereby certify that SABIC Innovative Plastics US LLC  
is :

still in operation.

I hereby certify that SABIC Innovative Plastics US LLC  
is :

no longer in operation.

in compliance with the requirements  
of Registration No. 005-15779-00049.

not in compliance with the requirements  
of Registration No. 005-15779-00049.

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Phone Number:</b>
<b>Date:</b>

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

<b>Noncompliance:</b>

**Attachment A: Emission Calculations  
Plastic Grinding PM/PM10 Emissions**

Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Permit Number: 005-27100-00049  
Reviewer: Brian Williams

Line	Backflow Generated (lb/hr)	% Grinding*	PM Emission Factor (lb/ton)**	PM10 Emission Factor (lb/ton)**	Uncontrolled Potential PM Emissions (tons/yr)	Uncontrolled Potential PM10 Emissions (tons/yr)	Control Efficiency (%)	Controlled Potential PM Emissions (tons/yr)	Controlled Potential PM10 Emissions (tons/yr)
72	120	75%	2.00	1.20	0.39	0.237	99.90%	3.94E-04	2.37E-04
73	120	75%	2.00	1.20	0.39	0.237	99.90%	3.94E-04	2.37E-04
74	120	75%	2.00	1.20	0.39	0.237	99.90%	3.94E-04	2.37E-04
<b>Total</b>					<b>1.18</b>	<b>0.71</b>		<b>1.18E-03</b>	<b>7.10E-04</b>

**Methodology**

\*Twenty-five percent of the backflow generated is ungrindable due to excess particle size or contamination.

\*\*Source indicates that the material being grinded comes off in large chunks of material. However, there are no AP-42 emission factors for plastic grinding.

Therefore, PM/PM10 emission factors were obtained for Wood Waste Storage Bin Loadout (SCC 30703002) using EPA's WebFire, since the large chunks of material are similar in size to wood waste.

Uncontrolled Emissions (tons/yr) = Backflow Generated (lb/hr) x % Grinding % Emission Factor (lb/ton) x 8760 hrs/yr x 1 ton/2000 lbs x 1 ton/2000 lbs

Controlled Emissions (tons/yr) = Backflow Generated (lb/hr) x % Grinding % Emission Factor (lb/ton) x 8760 hrs/yr x 1 ton/2000 lbs x 1 ton/2000 lbs x (1- % Control Efficiency)

**Attachment A: Emission Calculations  
Pneumatic Conveyance and Gravity Transfer  
PM/PM10 Emissions**

**Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Permit Number: 005-27100-00049  
Reviewer: Brian Williams**

**Pneumatic Conveyance from Grinder to Metal Separator\***

Line	Throughput (lb/hr)	Emission Factor (lb/ton)**	Control Efficiency %	PM/PM10 Emissions (lb/hr)	PM/PM10 Emissions (ton/yr)	Integral Control Device**
72	120	0.04	99.90%	2.40E-06	1.05E-05	yes
73	120	0.04	99.90%	2.40E-06	1.05E-05	yes
74	120	0.04	99.90%	2.40E-06	1.05E-05	yes
<b>Total</b>					<b>3.15E-05</b>	

**Gravity Transfer from Metal Separator to Loadout\***

Line	Throughput (lb/hr)	Emission Factor (lb/ton)**	Control Efficiency %	PM/PM10 Emissions (lb/hr)	PM/PM10 Emissions (ton/yr)	Integral Control Device**
72	120	0.003	99.90%	1.80E-07	7.88E-07	yes
73	120	0.003	99.90%	1.80E-07	7.88E-07	yes
74	120	0.003	99.90%	1.80E-07	7.88E-07	yes
<b>Total</b>					<b>2.37E-06</b>	

\*Material that is ground is pneumatically conveyed from the grinder to a metal separator. The material will then be gravity transferred from the metal separator to loadout, where the material will be recycled back into the long fiber line process.

\*\*Emissions from the grinding process are controlled by a fabric filter. Emissions from the pneumatic conveyance to the metal separator are controlled by a second fabric filter that is considered integral to the process because the material that is collected by the filters becomes the product stream and after the material is collected, it is recycled back into the process.

\*\*\* Emission factor for pellet conveyance is based on sieve analysis tests conducted by GE (SABIC's parent company) using polycarbonate pellets. The emission factors derived from this data represent the most conservative estimate of PM/PM10 emissions. Baghouse collection data from the plant shows that 0.05 lbs of particulate material is collected from the transfer of 6,928.5 pounds of pellets (0.014 lbs of particulate per ton of material processed) using the pneumatic conveyance system. Note that the 0.04 lbs/ton emission factor is used for both pneumatic and gravity transfer. The source believes the PTE for gravity transfer of pellets is 0.003 lbs/ton of material transferred. This 0.0003 lbs/ton emission factor was calculated by multiplying the pneumatic transfer emission factor 0.04 lbs/ton by 0.0075 (the ratio of the emission factor for gravity transfer of fine materials (0.19 lbs/ton) and the emission factor for pneumatic transfer of fine materials (25.6 lbs/ton).

**Methodology**

PM/PM10 Emissions (lb/hr) = Throughput (lb/hr) \* EF (lb/ton) \* 1/2000 (ton/lb) \* (1-% Control Efficiency)

PM/PM10 Emissions (ton/yr) = Throughput (lb/hr) \* EF (lb/ton) \* 1/2000 (ton/lb) \* (1-% Control Efficiency) \* 8760 (hr/yr)

**Attachment A: Emission Calculations  
Bagger System  
PM/PM10 Emissions**

**Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Permit Number: 005-27100-00049  
Reviewer: Brian Williams**

Emission Unit	Material Handled	PM/PM10 Emission Factor (lb/ton)*	Throughput (lb/hr)	Potential PM/PM10 Emissions (ton/yr)
Bagger	Resin Pellets	0.04	3000	<b>0.26</b>

\*See page 2 for more information

**Methodology**

PM/PM10 Emissions (ton/yr) = EF (lb/ton) \* Throughput (lb/hr) \* 1/2000 (ton/lb) \* 1/2000 (ton/lb) \* 8760 (hr/yr)

**Attachment A: Emissions Calculations  
VOC Emissions from Polymer Melting Processes**

**Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Registration: 005-27100-00049  
Reviewer: Brian Williams**

<b>Emission Unit</b>	<b>Emission Factor (lb/ton)*</b>	<b>Maximum Throughput (tons/hour)</b>	<b>VOC Emissions (tons/year)</b>
<b>Long Fiber Lines</b>			
Line 71**	1.000	0.015	0.066
Line 71**	0.404	0.485	0.858
Line 72	0.404	0.5	0.885
Line 73	0.404	1.0	1.770
Line 74	0.404	0.85	1.504
<b>Total</b>			<b>5.08</b>
<b>Short Fiber Lines</b>			
Line 81	0.354	1.0	1.551
Line 82	0.354	1.0	1.551
Line 84	0.354	0.1	0.155
Line 90	0.354	0.9	1.395
Line 91	0.354	1.0	1.551
Line 92	0.354	1.5	2.326
<b>Total</b>			<b>8.53</b>
<b>R&amp;D Line</b>			
R&D Line	1.000	0.15	0.657
<b>Total</b>			<b>0.657</b>
<b>Molding Lines</b>			
QC Molder 1	1.000	0.00075	0.00329
QC Molder 2	1.000	0.00075	0.00329
Development Molder	1.000	0.01125	0.0493
CL Molder 1	1.000	0.00075	0.0033
CL Molder 2	1.000	0.00075	0.0033
<b>Total</b>			<b>0.06</b>

\* - The emission factor 0.354 lbs of VOC/ton of product is from Table 5, Test Run 2 of the "Journal of the Air & Waste Management Association," Volume 49, January 1999, page 55. The emission factor 0.404 lbs of VOC/ton of product is from Table 5, Test Run 6 of the "Journal of the Air & Waste Management Association," Volume 49, January 1999, Page 55. For the QC Molders, Ultem is sometimes used as the base resin for some products. For this resin, a conservative VOC emission factor of 1 lb of VOC/ton of product has been used since no emission factor could be found. This product has a higher VOC content than the other resins used at this facility.

\*\* Emission factors are from the Journal of the Air & Waste Management Association; January 1999 Volume 49.

**Methodology:**

PTE (tons/yr) = Emission Factor (lb/ton) \* Throughput (lbs/hour) \* 8760 hr/yr \* 1ton/2000\*1ton/2000 lbs.

**Attachment A: Emission Calculations  
HAP Emissions**

**Company Name:** SABIC Innovative Plastics US LLC  
**Address City IN Zip:** 945 South Marr Road, Columbus, IN 47201  
**Registration:** 005-27100-00049  
**Reviewer:** Brian Williams

HAP	Emission Rate* (lbs/lb processed)	Total Processed (tons/yr)	HAP Emissions (lbs/yr)	HAP Emissions (tons/yr)
Acetaldehyde	8.00E-08	64,706	10.35	0.005
Acrolein	1.00E-08	64,706	1.29	0.001
Acrylic Acid	8.00E-08	64,706	10.35	0.005
Formaldehyde	9.00E-08	64,706	11.65	0.006
Methylethylketone	4.00E-08	64,706	5.18	0.003
Propionaldehyde	2.00E-08	64,706	2.59	0.001
<b>Total HAP Emissions (tons/yr)</b>			<b>41.41</b>	<b>0.021</b>

\* - Emission Factors are from Table 5 in "Development of Emission Factors for Polypropylene Processing" published in the *Journal of Air & Waste Management Association*, Volume 49, January 1999.

**Methodology:**

HAP Emissions (tons/yr) = Emission Rate (lbs/lb) \* Amount of Polypropylene Processed (lbs/yr) \* 1 ton/2000lbs

**Attachment A: Emissions Calculations  
Particulate Emissions**

Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Permit Number: 005-27100-00049  
Reviewer: Brian Williams

Emission Unit		Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material) <sup>(1)(2)</sup>	PM/PM10 PTE (Tons/yr)	Integral Control Device
<b>Resin Pellet Receiving</b>	Large Silos	Resin Pellets	17,000	0.04	1.49	No
	Feed Bins	Resin Pellets	17,000	Negligible		Yes
<b>Subtotal</b>					<b>1.49</b>	
<b>Line 72</b>	Storage Bin	Resin Pellets	650	Negligible		Yes
	Mixer	Resin Pellets	650	0.04	5.69E-02	No
	Feeder	Resin Pellets	650	0.04	5.69E-02	No
	Feed Hopper	Resin Pellets	650	0.04	5.69E-02	No
	Classifier	Finished Product	1,000	0.04	8.76E-02	No
	Storage Bin	Finished Product	1,000	Negligible		Yes
	Feed Out	Finished Product	1,000	0.04	8.76E-02	No
	<b>Subtotal</b>					<b>0.346</b>
<b>Line 73</b>	Storage Bin	Resin Pellets	1,300	Negligible		Yes
	Mixer	Resin Pellets	1,300	0.04	1.14E-01	No
	Feeder	Resin Pellets	1,300	0.04	1.14E-01	No
	Feed Hopper	Resin Pellets	1,300	0.04	1.14E-01	No
	Deduster	Finished Product	2,000	0.04	1.75E-01	No
	Classifier	Finished Product	2,000	0.04	1.75E-01	No
	Storage Bin	Finished Product	2,000	Negligible		Yes
	Feed Out	Finished Product	2,000	0.04	1.75E-01	No
<b>Subtotal</b>					<b>0.87</b>	
<b>Line 74</b>	Storage Bin	Resin Pellets	1,105	Negligible		Yes
	Mixer	Resin Pellets	1,105	0.04	9.68E-02	No
	Feeder	Resin Pellets	1,105	0.04	9.68E-02	No
	Feed Hopper	Resin Pellets	1,105	0.04	9.68E-02	No
	Deduster	Finished Product	1,700	0.04	1.49E-01	No
	Classifier	Finished Product	1,700	0.04	1.49E-01	No
	Storage Bin	Finished Product	1,700	Negligible		Yes
	Feed Out	Finished Product	1,700	0.04	1.49E-01	No
<b>Subtotal</b>					<b>0.74</b>	
<b>Line 81</b>	Storage Bin	Resin Pellets	540	Negligible		Yes
	Mixer	Resin Pellets	540	0.04	4.73E-02	No
	Mixer	Additives	460	0.19	1.91E-01	No
	Feeder	Resin Pellets	540	0.04	4.73E-02	No
	Feeder	Additives	460	0.19	1.91E-01	No
	Feed Hopper	Resin Pellets	540	0.04	4.73E-02	No
	Feed Hopper	Additives	460	0.19	1.91E-01	No
	Classifier	Finished Product	1,000	0.04	8.76E-02	No
	Catch Bin	Finished Product	1,000	0.04	8.76E-02	No
	Storage Bin	Finished Product	1,000	Negligible		Yes
	Feed Out	Finished Product	1,000	0.04	8.76E-02	No
	<b>Subtotal</b>					<b>0.98</b>
<b>Line 82</b>	Storage Bin	Resin Pellets	540	Negligible		Yes
	Mixer	Resin Pellets	540	0.04	4.73E-02	No
	Mixer	Additives	460	0.19	1.91E-01	No
	Feeder	Resin Pellets	540	0.04	4.73E-02	No
	Feeder	Additives	460	0.19	1.91E-01	No
	Feed Bin	Resin Pellets	540	0.04	4.73E-02	No
	Feed Bin	Additives	460	0.19	1.91E-01	No
	Classifier	Finished Product	1,000	0.04	8.76E-02	No
	Catch Bin	Finished Product	1,000	0.04	8.76E-02	No
	vibratory conveyor	Finished Product	1,000	0.04	8.76E-02	No
	Metal separator	Finished Product	1,000	0.04	8.76E-02	No
	Deduster	Finished Product	1,000	Negligible		Yes
	Feed Out	Finished Product	1,000	0.04	8.76E-02	No
<b>Subtotal</b>					<b>1.15</b>	

See Page 7 for notes on emission factors and methodology.  
See Page 8 for Line 71 PM/PM10 potential to emit calculations.

**Attachment A: Emissions Calculations  
Particulate Emissions**

**Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Permit Number: 005-27100-00049  
Reviewer: Brian Williams**

Emission Unit		Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material)*	PM/PM10 PTE (Tons/yr)	Integral Control Device
<b>Line 84</b>	Mixer	Resin Pellets	108	Negligible		Yes
	Mixer	Additives	92	0.19	3.83E-02	No
	Feeder	Resin Pellets	108	0.04	9.46E-03	No
	Feeder	Additives	92	0.19	3.83E-02	No
	Feed Bin	Resin Pellets	108	0.04	9.46E-03	No
	Feed Bin	Additives	92	0.19	3.83E-02	No
	Classifier	Finished Product	200	0.04	1.75E-02	No
	Catch Bin	Finished Product	200	0.04	1.75E-02	No
	Storage Bin	Finished Product	200	Negligible		Yes
	Feed Out	Finished Product	200	0.04	1.75E-02	No
	<b>Subtotal</b>					<b>0.19</b>
<b>Line 90</b>	Storage Bin	Resin Pellets	990	Negligible		Yes
	Mixer	Resin Pellets	990	0.04	8.67E-02	No
	Mixer	Milled Resin	990	0.04	8.67E-02	No
	Feeder	Resin Pellets	540	0.04	4.73E-02	No
	Feed Bin	Additives	810	0.19	3.37E-01	No
	Feeder	Additives	126	0.19	5.24E-02	No
	Feed Bin	Resin Pellets	990	0.04	8.67E-02	No
	Classifier	Finished Product	1,800	0.04	1.58E-01	No
	Catch Bin	Finished Product	1,800	0.04	1.58E-01	No
	Storage Bin	Finished Product	1,800	Negligible		Yes
	Feed Out	Finished Product	1,800	0.04	1.58E-01	No
<b>Subtotal</b>					<b>1.17</b>	
<b>Line 91</b>	Storage Bin	Resin Pellets	1,100	Negligible		Yes
	Mixer	Resin Pellets	1,100	0.04	9.64E-02	No
	Feeder	Resin Pellets	1,100	0.04	9.64E-02	No
	Feed Bin	Additives	900	0.19	3.74E-01	No
	Feeder	Additives	140	0.19	5.83E-02	No
	Feed Bin	Resin Pellets	1,100	0.04	9.64E-02	No
	Conveyor	Additives - Chopped Glass	600	0.11	1.45E-01	No
	Classifier	Finished Product	2,000	0.04	1.75E-01	No
	Catch Bin	Finished Product	2,000	0.04	1.75E-01	No
	Storage Bin	Finished Product	2,000	Negligible		Yes
	Feed Out	Finished Product	2,000	0.04	1.75E-01	No
<b>Subtotal</b>					<b>1.39</b>	
<b>Line 92</b>	Storage Bin	Resin Pellets	480	Negligible		Yes
	Mixer	Resin Pellets	480	0.04	4.20E-02	No
	Feeder	Resin Pellets	480	0.04	4.20E-02	No
	Conveyor	Additives-Carbon Black Powder	120	25.6	6.73E+00	No
	Feeder	Additives	120	0.19	4.99E-02	No
	Feed Bin	Resin Pellets	480	0.04	4.20E-02	No
	Classifier	Finished Product	600	0.04	5.26E-02	No
	Catch Bin	Finished Product	600	0.04	5.26E-02	No
	Storage Bin	Finished Product	600	Negligible		Yes
	Feed Out	Finished Product	600	0.04	5.26E-02	No
	<b>Subtotal</b>					<b>7.06</b>
<b>Mold Room</b>	Molder 1	Resin Pellets	3.13	0.04	2.74E-04	
	Molder 2	Resin Pellets	3.13	0.04	2.74E-04	
	Molder 3	Resin Pellets	6.25	0.04	5.48E-04	
<b>Subtotal</b>					<b>1.1E-03</b>	
<b>Research &amp; Development</b>	Pneumatic Conveyance	Resin Pellets	690	0.04	6.04E-02	
<b>Color Blending</b>	Weighing	Additives	237	0.19	9.86E-02	
	Mixing	Additives	237	0.19	9.86E-02	
	Staging	Additives	237	0.19	9.86E-02	
<b>Subtotal</b>					<b>0.30</b>	

(1) Emission factor for pellet conveyance is based on sieve analysis tests conducted by GE (SABIC's parent company) using polycarbonate pellets. The emission factors derived from this data represent the most conservative estimate of PM/PM10 emissions. Baghouse collection data from the plant shows that 0.05 lbs of particulate material is collected from the transfer of 6,928.5 pounds of pellets (0.014 lbs of particulate per ton of material processed) using the pneumatic conveyance system. Note that the 0.04 lbs/ton emission factor is used for both pneumatic and gravity transfer. The source believes the PTE for gravity transfer of pellets is 0.003 lbs/ton of material transferred. This 0.0003 lbs/ton emission factor was calculated by multiplying the pneumatic transfer emission factor 0.04 lbs/ton by 0.0075 (the ratio of the emission factor for gravity transfer of fine materials (0.19 lbs/ton) and the emission factor for pneumatic transfer of fine materials (25.6 lbs/ton). For the purposes of this Registration, the more conservative 0.04 lbs/ton emission factor has been used to calculate PTE for both pneumatic and gravity transfer of pellets.

(2) The emission factor for the gravity transfer of additive materials is based on the emission factor for urea bagging found in AP-42, Chapter 8.2, Table 8.2-1 (7/93). The source proposed this emission factor because the fine (dusty) materials are similar in composition to urea. This represents a worst case scenario and will overestimate particulate emissions since some of the additives are less dusty than urea. Note that a significant portion of the materials transferred using gravity are glass beads. For pneumatic transfer of additives, the emission factors are 25.6 lbs/ton of carbon black transferred and 0.11 lbs/ton of chopped glass transferred. These emission factors were developed by GE, because no emission factors for these activities could be found in AP-42 or other EPA sources.

**Methodology:**

$$PTE \text{ (tons/year)} = \text{throughput (lbs/hour)} * 8760 \text{ hrs/yr} * 1 \text{ ton}/2000 \text{ lbs} * \text{emission factor (lbs/ton)} * 1 \text{ ton}/2000 \text{ lbs}$$

Note: PM emissions are calculated based on worst-case scenarios.

**Attachment A: Emission Calculations  
Summary Emissions**

**Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Permit Number: 005-27100-00049  
Reviewer: Brian Williams**

**POTENTIAL TO EMIT OF LINE 71**

Line 71	Type of Material Handled	Throughput (lbs/hr)	Emission Factor (lbs/ton of Material) <sup>(1)(2)</sup>	PTE of PM/PM10 (tons/yr)	Integral Control Device <sup>(3)</sup>
Vacuum Receiver A1	Resin Pellets	150	0.014	4.59E-03	yes
Vacuum Receiver A2	Resin Pellets	40	0.014	1.23E-03	yes
Vacuum Receiver A3	Resin Pellets	30	0.014	9.19E-04	yes
Vacuum Receiver A4	Resin Pellets	10	0.014	3.06E-04	yes
Feeder A1	Resin Pellets	150	0.014	4.60E-03	no
Feeder A2	Resin Pellets	40	0.014	1.23E-03	no
Feeder A3	Resin Pellets	30	0.014	9.20E-04	no
Feeder A4	Resin Pellets	10	0.014	3.07E-04	no
Feeder A5	Powder	5	0.19	2.08E-03	no
Feeder A6	Powder	5	0.19	2.08E-03	no
Feeder A7	Powder	10	0.19	4.16E-03	no
Feed Hopper	Resin Pellets	230	0.014	7.05E-03	no
	Powder	20	0.19	8.32E-03	no
Vacuum Receiver 9	Resin Pellets	260	0.014	7.96E-03	yes
Vacuum Receiver 10	Resin Pellets	50	0.014	1.53E-03	yes
Vacuum Receiver 11	Resin Pellets	40	0.014	1.23E-03	yes
Feeder 9	Resin Pellets	260	0.014	7.97E-03	no
Feeder 10	Resin Pellets	50	0.014	1.53E-03	no
Feeder 11	Resin Pellets	40	0.014	1.23E-03	no
Feeder 12	Powder	100	0.19	4.16E-02	no
Feeder 13	Powder	50	0.19	2.08E-02	no
Feed Hopper	Resin Pellets	350	0.014	1.07E-02	no
	Powder	150	0.19	6.24E-02	no
Classifier	Resin Pellets	1,000	0.014	3.07E-02	no
Catch Pan to Elutriator	Resin Pellets	1,000	0.014	3.07E-05	yes
Pelletron/chute	Resin Pellets	1,000	0.014	3.07E-05	yes
Surge Bin	Resin Pellets	1,000	0.014	3.07E-02	no
Feed Out	Resin Pellets	1,000	0.014	3.07E-02	no

**Total PTE PM/PM10: 0.29**

(1) The emission factor for pellet conveyance is based on baghouse collection data provided by the Permittee that showed 0.05 lbs of particulate material is collected from the transfer of 6,928.5 pounds of pellets (or 0.014 lbs of particulate per ton of material processed) using the pneumatic conveyance system. Note that the 0.014 lb/ton emission factor has been used to calculate PTE for pneumatic and gravity transfer of pellets. The Permittee believes the emission factor for the gravity transfer of pellets would be less than the 0.014 lbs/ton emission factor calculated for pneumatic transfer. However, the Permittee was not able to provide the necessary collection data to calculate an emission factor for the gravity transfer of pellets. IDEM, OAQ has therefore used the emission factor of 0.014 lbs/ton to calculate PTE for both pneumatic and gravity transfer of pellets.

(2) The emission factors for gravity transfer are from R005-19868-00049. The emission factor for the gravity transfer of powder is based on the emission factor for urea bagging found in AP-42, Chapter 8.2, Table 8.2-1 (7/93). The source proposed this emission factor because the fine (dusty) materials are similar in composition to urea. This represents a worst-case scenario and will overestimate particulate emissions since some of the additives/powder are less dusty than urea.

(3) The control efficiency of the integral control devices for vacuum receivers A1, A2, A3, A4, 9, 10, and 11, which use a cyclone and vacuum filter, are 95% and 99.9%, respectively. The control efficiency of the integral control device for the catch pan and pelletron, a dust collector, is 99.9%

**Methodology:**

PTE of PM/PM10 (tons/yr) = Throughput (lbs/hr) \* 8760 hrs/yr \* 1ton/2000lbs \* Emission Factor (lb/ton) \* 1 ton/2000 lbs

Controlled PTE of PM/PM10 from vacuum receivers (tons/yr) = PTE of PM/PM10 (tons/yr) \* (1 - Control Efficiency of Cyclone %)

\* (1 - Control Efficiency of Vacuum Filter %)

Controlled PTE of PM/PM10 from catchpan and pelletron (tons/yr) = PTE of PM/PM10 (tons/yr) \* (1 - Control Efficiency of Dust Collector %)

Note: PM emissions are calculated based on worst-case scenarios.

**Attachment A: Emission Calculations  
Natural Gas Combustion In Heaters and Ovens**

**Company Name:** SABIC Innovative Plastics US LLC  
**Address City IN Zip:** 945 South Marr Road, Columbus, IN 47201  
**Registration:** 005-27100-00049  
**Reviewer:** Brian Williams

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
32.8	287.0

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NO <sub>x</sub>	VOC	CO
	7.6	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	1.09	1.09	0.09	14.3	0.79	12.1

\*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

\*\*Emission Factors for NO<sub>x</sub>: Uncontrolled = 100, Low NO<sub>x</sub> Burner = 50, Low NO<sub>x</sub> 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	3.013E-04	1.722E-04	1.076E-02	2.583E-01	4.878E-04

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	7.174E-05	1.578E-04	2.009E-04	5.452E-05	3.013E-04

**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 from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (AP-42 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.

Attachment A: Emission Calculations  
Summary Emissions

Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Registration: 005-27100-00049  
Reviewer: Brian Williams

Emission Unit	Density (lb/gal)	Max. Usage (gal/hour)	Weight % VOC	PTE of VOC (tons/year)
Degreaser	6.700	0.017	100%	0.49
TOTAL				0.49

**METHODOLOGY**

PTE of VOC (tons/year) = Density (lb/gal) \* Maximum usage rate (gal/hour) \* Weight % VOC \* 8760 hours/year \* 1 ton/2000 lbs

Attachment A: Emissions Calculations

VOC Emissions

From R&D coextrusion line consisting of polymer melting process

Company Name: SABIC Innovative Plastics US LLC  
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
Registration: 005-27100-00049  
Reviewer: Brian Williams

Emission Unit	Emission Factor (lb/ton)*	Maximum Throughput (tons/hour)	Resin Pellet Loading %	PTE of VOC (tons/year)
R & D Coextrusion Line	1.000	0.15	70%	0.46
<b>TOTAL</b>				<b>0.46</b>

\* - An emission factor of 0.354 lbs of VOC per ton of product is from Table 5, Test Run 2 of the "Journal of the Air & Waste Management Association," Volume 49, January 1999, page 55. An emission factor of 0.404 lbs of VOC per ton of product is from Table 5, Test Run 6 of the "Journal of the Air & Wasate Management Association," Volume 49, January 1999, Page 55. For this resin, a conservative VOC emission factor of 1.000 lb of VOC per ton of product has been used since no emission factor could be found. This product has a higher VOC content than the other resins used at this facility.

**Methodology:**

PTE of VOC (tons/year) = Emission Factor (lb/ton) \* Max. Throughput (lbs/ton) \* Maximum resin pellet loading \* 8760 hours/year \* 1 ton/2000 lbs.

## Particulate Emissions

From R&amp;D coextrusion line consisting of polymer melting process

Company Name: SABIC Innovative Plastics US LLC  
 Address City IN Zip: 945 South Marr Road, Columbus, IN 47201  
 Registration: 005-27100-00049  
 Reviewer: Brian Williams

Maximum Throughput Capacity in lbs/hour = 300

Emission Unit	Type of Material Handled	Additives/Pellets (%)	* Emission Factor (lbs/ton of Material)	PTE of PM/PM10 (tons/year)	
Coextrusion Line	Feeder # 1	Resin Pellets	16%	0.04	4.20E-03
	Feeder # 2	Additives	4%	0.19	4.99E-03
	Feed throat # 1	Resin Pellets	16%	0.04	4.20E-03
		Additives	4%	0.19	4.99E-03
	Feeder # 3	Additives	3%	0.19	3.74E-03
	Feeder # 4	Liquid			
	Feeder # 5	Resin Pellets	50%	0.04	1.31E-02
		Additives	1%	0.04	2.63E-04
	Feed throat # 2	Resin Pellets	49%	0.04	1.29E-02
		Additives	1%	0.19	1.25E-03
	Extruder # 1	Resin Pellets/Additives		0.00	0.00E+00
	Extruder # 2	Resin Pellets/Additives		0.00	0.00E+00
	Die Block	Strand Glass			
	Cooling Bath	City Water			
Puller					
Pelletizer					
Cleaning	Resin Pellets	100%	0.04	2.63E-02	
Feed out	Resin Pellets	100%	0.04	2.63E-02	
<b>TOTAL</b>				<b>0.10</b>	

**\* Note:**

For the purposes of this Registration, a conservative emission factor of 0.04 lbs per ton (as used in Registration No. 005-17886-00049, issued on October 28, 2003) is used to calculate PTE of PM/PM10 generated from transfer of pellets.

**Methodology**

PTE (tons/year) = Max. Throughput Capacity (lbs/hour) \* Additives/Pellets (%) \* 1 ton/2000 lbs \* Emission Factor (lbs/ton) \* 8760 hours/year \* 1 ton

**Attachment A: Emissions Calculations  
Particulate Emissions  
From Central Vaccum System**

**Company Name: SABIC Innovative Plastics US LLC**  
**Address City IN Zip: 945 South Marr Road, Columbus, IN 47201**  
**Registration: 005-27100-00049**  
**Reviewer: Brian Williams**

**Maximum Amount of Waste Generated (lbs/hour) = 10**

Emission Unit		Type of Material Handled	Material (%)	* Emission Factor (lbs/ton of Material)	PTE of PM/PM10 (tons/year)
Central Vaccum System	CV1	Resin Pellets	10%	0.04	8.76E-05
		Additives	40%	25.6	2.24E-01
	CV2	Resin Pellets	10%	0.04	8.76E-05
		Additives	40%	25.6	2.24E-01
<b>TOTAL</b>					<b>0.45</b>

**\* Notes:**

- (1) An emission factor of 0.04 lbs per ton is from Registration No. 005-17886-00049, issued October 28, 2003.
- (2) An emission factors of 25.6 lbs per ton of carbon black pneumatic transfer was developed by GE and used in Registration No. 005-17886-00049, issued on October 28, 2003.

**Methodology**

PTE of PM/PM10 (tons/year) = Max. Throughput Capacity (lbs/hour) \* Additives/Pellets (%) \* 1 ton/2000 lbs \* Emission Factor (lbs/ton) \* 8760 hours/year \* 1 ton/2000 lbs

**Attachment A: Emissions Calculations  
PTE of Revision**

**Company Name: SABIC Innovative Plastics US LLC**  
**Address City IN Zip: 945 South Marr Road, Columbus, IN 47201**  
**Registration: 005-27100-00049**  
**Reviewer: Brian Williams**

<b>Potential to Emit of Revision (tons/yr)</b>			
<b>Emission Unit</b>	<b>PM</b>	<b>PM10</b>	<b>VOC</b>
Plastic Grinding After Revision	1.18	0.71	0
Plastic Grinding Before Revision	0.1	0.059	0
<b>Change in PTE</b>	<b>1.08</b>	<b>0.65</b>	<b>0</b>
Long Fiber Lines After Revision	0	0	5.08
Long Fiber Lines Before Revision	0	0	3.56
<b>Change in PTE</b>	<b>0</b>	<b>0</b>	<b>1.52</b>
Short Fiber Lines After Revision	11.94	11.94	8.53
Short Fiber Lines Before Revision	12.64	12.64	8.49
<b>Change in PTE</b>	<b>-0.70</b>	<b>-0.70</b>	<b>0.04</b>
R&D Line After Revision	0	0	0.657
R&D Line Before Revision	0	0	0.186
<b>Change in PTE</b>	<b>0</b>	<b>0</b>	<b>0.471</b>
Resin Pellet Receiving After Revision	1.49	1.49	0
Resin Pellet Receiving Before Revision	1.08	1.08	0
<b>Change in PTE</b>	<b>0.41</b>	<b>0.41</b>	<b>0</b>
Pneumatic Conveyance	3.15E-05	3.15E-05	0
Gravity Transfer	2.37E-06	2.37E-06	0
Molding Units (CL1 and CL2)	0	0	0.007
Bagger System	0.26	0.26	0
<b>PTE of New Units</b>	<b>0.263</b>	<b>0.263</b>	<b>0.007</b>
<b>PTE of Entire Revision</b>	<b>1.06</b>	<b>0.63</b>	<b>2.04</b>

**Attachment A: Emissions Calculations  
Summary of Emissions**

**Company Name:** SABIC Innovative Plastics US LLC  
**Address City IN Zip:** 945 South Marr Road, Columbus, IN 47201  
**Registration:** 005-27100-00049  
**Reviewer:** Brian Williams

<b>Unlimited Potential to Emit (tons/yr)</b>							
<b>Emission Unit</b>	<b>PM</b>	<b>PM10</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>VOC</b>	<b>CO</b>	<b>HAPs</b>
Long Fiber Lines*	2.24	2.24	0.0	0.0	5.08	0.0	0.02
Grinding	1.18	0.71	0.0	0.0	0.0	0.0	0.0
Pneumatic Conveyance	3.15E-05	3.15E-05	0.0	0.0	0.0	0.0	0.0
Gravity Transfer	2.37E-06	2.37E-06	0.0	0.0	0.0	0.0	0.0
Short Fiber Lines*	11.94	11.94	0.0	0.0	8.53	0.0	see note
Resin Pellet Receiving	1.49	1.49	0.0	0.0	0.0	0.0	0.0
Color Blending	0.30	0.30	0.0	0.0	0.0	0.0	0.0
Molding Units*	0.001	0.001	0.0	0.0	0.06	0.0	see note
R&D Line*	0.06	0.06	0.0	0.0	0.657	0.0	see note
Degreaser	0.0	0.0	0.0	0.0	0.49	0.0	0.0
R&D Coextrusion Line	0.10	0.10	0.0	0.0	0.46	0.0	0.0
Central Vacuum Systems	0.45	0.45	0.0	0.0	0.0	0.0	0.0
Heaters and Ovens	1.09	1.09	0.09	14.35	0.79	12.05	0.27
Bagger System	0.26	0.26	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>19.11</b>	<b>18.64</b>	<b>0.09</b>	<b>14.35</b>	<b>16.06</b>	<b>12.05</b>	<b>0.29</b>

\*The long fiber lines, short fiber lines, molding units, and R&D Line have a combined potential to emit 0.02 tons of total HAPs per year.