



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: December 22, 2010

RE: SABIC Innovative Plastics US, LLC / 005-29796-00049

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 22, 2010

Re: Registration Notice-Only Change
No. R005-29796-00049

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 19, 2010, the Office of Air Quality (OAQ) received an application from the source requesting the following:

- (a) The source requested to add a new short-fiber-filled thermoplastic manufacturing line, identified as Line 93. As a result, potential to emit PM, PM10 from this unit are 0.053 tons per year. This addition 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).
- (b) **Long Fiber-Filled Lines:**
The source requested to remove the classifier from Lines 71, 72, 73, and 74 due to the nature of the product. The classifier is used to separate off-pellets. The fiber strands are long and do not generate dust when they are passed through the classifier. The same is true for Pelletron/chute on line 71. (See Attachment B). Also, the Pack Out rate for Lines 73 and 74 is revised to 1,000 lbs/hr each, from 2,000 lbs/hr and 1,700 lbs/hr respectively.
- (c) The source verified that the production rate listed in section A.2 for Lines 81, 82 and 92 is correct, but the production rate listed in the Attachment A, Registration No.:005-27100-00049 is listed in error, therefore emission calculations are revised for Lines 81,82 and 92, with the corrected throughput (See Attachment B).
- (d) **Short Fiber-Filled Lines:**
The classifier remains in the short-fiber -filled lines as a source of emissions. This is because the fibers in these pattets are small and can potentially flake apart and cause particulate emissions.

The source requested to update the process description and emissions from the following Short Fiber-Filled Lines:

- (1) Lines 81 and 82: There is only one mixer and one feeder. Both the mixer and the feeder have resin Pellets and additives associated with them. One mixer and feeder has been removed. Two Feed hoppers do not exist and have been removed. (See attachment B)
- (2) Line 84: Feed bins do not exist, therefore they have been removed. (See attachment B)
- (3) Line 90: There are two additives feed bins that have dust collection associated with them not previously identified. The feeder bins have been added. (See attachment B)

- (4) Line 91: There was one additive feeder and three additive feeder bins that all have dust collection, not listed. The feeder bins have been added. (See attachment B)
- (5) Line 92: There was one additive feeder and two additive feeder bins that all have dust collection associated with them not previously listed. The feeder and feeder bins are added to the inventory.
- (6) The source also requested to change the nomenclature for the emission units to be consistent with what the equipment is called on site. (see attachment B)

These updates 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).

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.

The following revisions are made to the Registration:

A.2 Emission Units and Pollution Control Equipment Summary

- ...
- (b) **Seven (7) Six (6)** short fiber filled extruded thermoplastic manufacturing lines, including:
-
- (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
 - (7) Line 93, approved for construction in 2010, having a maximum production rate of 600 pounds of product per hour, equipped with individual controls to control particulate emissions, exhausting inside, consisting of the following process operations:
 - (A) Draft Weigher, handling 600 lbs/hr of Resin Pellets, equipped with an integral cyclone and dust collector;
 - (B) Mixer, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;
 - (C) Feeder, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;
 - (D) Feeder, handling 600 lbs/hr of Additives, equipped with a dust collector;
 - (E) Feed Bin, handling 600 lbs/hr of Additives, equipped with a dust collector;
 - (F) Classifier, handling 600 lbs/hr of Finished Products, equipped with a dust collector;
 - (G) Catch Bin, handling 600 lbs/hr of Finished Products, equipped with a dust collector;

- (H) **Storage Bin, handling 600 lbs/hr of Finished Products, equipped with an integral cyclone and dust collector; and**
- (I) **Packout, handling 600 lbs/hr of Finished Products, equipped with a dust collector.**

NOTE: The company submitted the following justification for R005-17886-00049, issued October 8, 2003, and approved by IDEM, such that the cyclone and filter be considered as an integral part of the pneumatic conveyance system for Line 92:

The process operations at the plant include pneumatic conveying to move pellets and powders from the storage areas to the processing lines. The nature of this operation is such that equipment typically viewed as air pollution control equipment is, for these operations, necessary to the proper functioning of the equipment, and therefore integral to the process units. The pneumatic transfer system works using a vacuum pump, which pulls air through the storage bin and associated conduits to a cyclone and filter, which are arranged in series. The cyclone is used to collect the transferred material, while the filter protects the vacuum pump from damage by fine particles that may be entrained in the air stream. Since the cyclone and filters make the transfer of the material possible and protect the vacuum pump from damage, they are considered integral to the process.

The addition of Line 93 involves the similar process operations as existing Line 92, therefore, the same justification for integral determination mentioned above will be used for Line 93. The permitting level will be determined using the potential to emit after the air pollution control equipment for Line 93. Operating conditions in the notice-only change registration will specify that the air pollution control equipments shall operate at all times when the pneumatic conveyance systems are in operation.

...

SECTION D.1

OPERATION CONDITIONS

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

- (b) **Six Seven (67) short fiber filled extruded thermoplastic manufacturing lines, including:**
 -
 - (7) **Line 93, approved for constructed in 2010, having a maximum production rate of 600 pounds of product per hour, with individual control to control particulate emissions, exhausting inside, consisting of the following process operations:**
 - (A) **Draft Weigher, handling 600 lbs/hr of Resin Pellets, equipped with an integral cyclone and dust collector;**
 - (B) **Mixer, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;**
 - (C) **Feeder, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;**
 - (D) **Feeder, handling 600 lbs/hr of Additives, equipped with a dust collector;**
 - (E) **Feed Bin, handling 600 lbs/hr of Additives, equipped with a dust collector;**
 - (F) **Classifier, handling 600 lbs/hr of Finished Products, equipped with a dust collector;**
 - (G) **Catch Bin, handling 600 lbs/hr of Finished Products, equipped with a dust collector;**

- ...
- (H) Storage Bin, handling 600 lbs/hr of Finished Products, equipped with an integral cyclone and dust collector; and
 - (I) Packout, handling 600 lbs/hr of Finished Products, equipped with a dust collector.

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]

-
- (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.
 - (c) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the short fiber filled extruded thermoplastic manufacturing line (Line 93) shall not exceed the pound per hour limitations listed in the table below:

Line 93 Emission Units	Type of material handled	Process Weight Rate (Tons/hr)	Allowable PM (lbs/hr)
Draft Weigher	Resin Pellets	0.3	1.83
Mixer	Resin Pellets	0.3	1.83
Feeder	Resin Pellets	0.3	1.83
Feeder	Additives	0.18	1.29
Feed Bin	Additives	0.18	1.29
Classifier	Finished Product	0.3	1.83
Catch Bin	Finished Product	0.3	1.83
Storage Bin	Finished Product	0.3	1.83
Pack Out	Finished Product	0.3	1.83

The pound per hour limitation for (b) and (c) 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

D.1.2 Particulate Control

The integral cyclone and filters for particulate control shall be in operation and control emissions from Line 93 at all times when any of the associated processes are in operation.

In addition, IDEM has begun implementing a new procedure and will no longer list the mailing address of the Authorized Individual 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.1 General Information

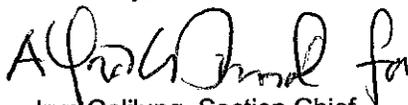
The Registrant owns and operates a stationary custom plastic manufacturing plant.

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

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

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 Swarna Prabha, at (800) 451-6027, press 0 and ask for Swarna Prabha or extension 4-5376, or dial (317) 234-5376.

Sincerely,



Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

IC/SP

Attachment: Revised Registration and Attachments A and B (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
Fourth Registration Notice-Only Change No. 005-27100-00049, issued on December 18, 2008

Fifth Registration Notice-Only Change No. 005-29796-00049	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 22, 2010

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

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

Source 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

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) Seven (7) 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.
- (7) Line 93, approved for construction in 2010, having a maximum production rate of 600 pounds of product per hour, equipped with individual controls to control particulate emissions, exhausting inside, consisting of the following process operations:
 - (A) Draft Weigher, handling 600 lbs/hr of Resin Pellets, equipped with an integral cyclone and dust collector;
 - (B) Mixer, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;
 - (C) Feeder, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;
 - (D) Feeder, handling 600 lbs/hr of Additives, equipped with a dust collector;
 - (E) Feed Bin, handling 600 lbs/hr of Additives, equipped with a dust collector;
 - (F) Classifier, handling 600 lbs/hr of Finished Products, equipped with a dust collector;
 - (G) Catch Bin, handling 600 lbs/hr of Finished Products, equipped with a dust collector;
 - (H) Storage Bin, handling 600 lbs/hr of Finished Products, equipped with an integral cyclone and dust collector; and
 - (I) Packout, handling 600 lbs/hr of Finished Products, equipped with 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.
- (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.
- (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.

SECTION B

GENERAL CONDITIONS

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

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]

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]

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]

- (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)]

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

Indianapolis, IN 46204-2251

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

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), 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.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

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.
 - (7) Line 93, approved for constructed in 2010, having a maximum production rate of 600 pounds of product per hour, with individual control to control particulate emissions of particulate matter exhausting inside, consisting of the following process operations:
 - (A) Draft Weigher, handling 600 lbs/hr of Resin Pellets, equipped with an integral cyclone and dust collector;
 - (B) Mixer, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;
 - (C) Feeder, handling 600 lbs/hr of Resin Pellets, equipped with a dust collector;

- (D) Feeder, handling 600 lbs/hr of Additives, equipped with a dust collector;
 - (E) Feed Bin, handling 600 lbs/hr of Additives, equipped with a dust collector;
 - (F) Classifier, handling 600 lbs/hr of Finished Products, equipped with a dust collector;
 - (G) Catch Bin, handling 600 lbs/hr of Finished Products, equipped with a dust collector;
 - (H) Storage Bin, handling 600 lbs/hr of Finished Products, equipped with an integral cyclone and dust collector; and
 - (I) Packout, handling 600 lbs/hr of Finished Products, equipped with 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.

- (c) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the short fiber filled extruded thermoplastic manufacturing line (Line 93) shall not exceed the pound per hour limitations listed in the table below:

Line 93 Emission Units	Type of material handled	Process Weight Rate (Tons/hr)	Allowable PM (lbs/hr)
Draft Weigher	Resin Pellets	0.3	1.83
Mixer	Resin Pellets	0.3	1.83
Feeder	Resin Pellets	0.3	1.83
Feeder	Additives	0.18	1.29
Feed Bin	Additives	0.18	1.29
Classifier	Finished Product	0.3	1.83
Catch Bin	Finished Product	0.3	1.83
Storage Bin	Finished Product	0.3	1.83
Pack Out	Finished Product	0.3	1.83

The pound per hour limitation for (b) and (c) were 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

Compliance Determination Requirements

D.1.2 Particulate Control

The integral cyclone and filters for particulate control shall be in operation and control emissions from Line 93 at all times when any of the associated processes are in operation.

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).

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

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

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.

Noncompliance:

**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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

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
Total					1.18	0.71		1.18E-03	7.10E-04

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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

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
Total					3.15E-05	

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
Total					2.37E-06	

*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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

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	0.26

*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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

Emission Unit	Emission Factor (lb/ton)*	Maximum Throughput (tons/hour)	VOC Emissions (tons/year)
Long Fiber Lines			
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
Total			5.08
Short Fiber Lines			
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
Line 93	0.354	0.3	0.465
Total			8.99
R&D Line			
R&D Line	1.000	0.15	0.657
Total			0.657
Molding Lines			
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
Total			0.06

* - 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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

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
Total HAP Emissions (tons/yr)			41.41	0.021

* - 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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

Emission Unit	Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material) ⁽¹⁾⁽²⁾	PM/PM10 PTE (Tons/yr)	Integral Control Device
Resin Pellet Receiving	Large Silos	Resin Pellets	17,000	0.04	No
	Feed Bins	Resin Pellets	17,000	Negligible	Yes
Subtotal				1.49	
Line 72	Batch Bin	Resin Pellets	650	Negligible	Yes
	Mixer	Resin Pellets	650	0.04	5.69E-02
	Feeder	Resin Pellets	650	0.04	5.69E-02
	Feed Hopper	Resin Pellets	650	0.04	5.69E-02
	Storage Bin	Finished Product	1,000	Negligible	Yes
	Pack Out	Finished Product	1,000	0.014	3.07E-02
	Subtotal				0.201
Line 73	Batch Bin	Resin Pellets	1,300	Negligible	Yes
	Mixer	Resin Pellets	1,300	0.04	1.14E-01
	Feeder	Resin Pellets	1,300	0.04	1.14E-01
	Feed Hopper	Resin Pellets	1,300	0.04	1.14E-01
	Pelletron	Finished Product	2,000	0.04	1.75E-01
	Storage Bin	Finished Product	2,000	Negligible	Yes
	Pack Out	Finished Product	1,000	0.014	3.07E-02
Subtotal				0.55	
Line 74	Batch Bin	Resin Pellets	1,105	Negligible	Yes
	Mixer	Resin Pellets	1,105	0.04	9.68E-02
	Feeder	Resin Pellets	1,105	0.04	9.68E-02
	Feed Hopper	Resin Pellets	1,105	0.04	9.68E-02
	Pelletron	Finished Product	1,700	0.04	1.49E-01
	Storage Bin	Finished Product	1,700	Negligible	Yes
	Pack Out	Finished Product	1,000	0.014	3.07E-02
Subtotal				0.47	
Line 81	Draft Weigher	Resin Pellets	2,000	Negligible	Yes
	Mixer	Resin Pellets	2,000	0.04	1.75E-01
		Additives	900	0.19	3.74E-01
		Resin Pellets	2,000	0.04	1.75E-01
	Feeder	Additives	900	0.19	3.74E-01
		Finished Product	2,000	0.04	1.75E-01
	Surge-Bin	Finished Product	2,000	0.04	1.75E-01
	Packout Bin	Finished Product	2,000	Negligible	Yes
	Pack Out	Finished Product	2,000	0.04	1.75E-01
	Subtotal				1.62
Line 82	Draft Weigher	Resin Pellets	2,000	Negligible	Yes
	Mixer	Resin Pellets	2,000	0.04	1.75E-01
		Additives	900	0.19	3.74E-01
		Resin Pellets	2,000	0.04	1.75E-01
	Feeder	Additives	900	0.19	3.74E-01
		Finished Product	2,000	0.04	1.75E-01
	Surge Bin	Finished Product	2,000	0.04	1.75E-01
	Packout Bin	Finished Product	2,000	Negligible	Yes
	Pack Out	Finished Product	2,000	0.04	1.75E-01
	Subtotal				1.62

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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

Emission Unit		Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material)*	PM/PM10 PTE (Tons/yr)	Integral Control Device
Line 84	Draft Weigher	Resin Pellets	108	Negligible		Yes
	Mixer	Resin Pellets	108	0.04	9.46E-03	No
		Additives	92	0.19	3.83E-02	No
	Feeder	Resin Pellets	108	0.04	9.46E-03	No
		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
	Pack Out	Finished Product	200	0.04	1.75E-02	No
	Subtotal				0.15	
Line 90	Draft Weigher	Resin Pellets	990	Negligible		Yes
	Mixer	Resin Pellets	990	0.04	8.67E-02	No
	Feeder	Resin Pellets	990	0.04	8.67E-02	No
	Feeder	Additives	810	0.19	3.37E-01	No
	Feeder	Additives	126	0.04	5.24E-02	No
	Feeder Bin	Additives	810	0.19	3.37E-01	No
	Feeder Bin	Additives	126	0.19	5.24E-02	No
	Classifier	Finished Product	1,800	0.04	1.58E-01	No
	Surge Bin	Finished Product	1,800	0.04	1.58E-01	No
	Packout Bin	Finished Product	1,800	Negligible		Yes
	Pack Out	Finished Product	1,800	0.04	1.58E-01	No
	Subtotal				1.43	
Line 91	Draft Weigher - 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
	Feeder	Additives	900	0.19	3.74E-01	No
	Feeder	Additives	140	0.19	5.83E-02	No
	Feeder	Additives	150	0.19	6.24E-02	No
	Feeder Bin	Additives	900	0.19	3.74E-01	No
	Feeder Bin	Additives	140	0.19	5.83E-02	No
	Feeder Bin	Additives	150	0.19	6.24E-02	No
	Classifier	Finished Product	2,000	0.04	1.75E-01	No
	Surge Bin	Finished Product	2,000	0.04	1.75E-01	No
	Packout Bin	Finished Product	2,000	Negligible		Yes
	Pack Out	Finished Product	2,000	0.04	1.75E-01	No
	Subtotal				1.71	
Line 92	Draft Weigher	Resin Pellets	1,650	0.04		Yes
	Mixer	Resin Pellets	1,650	0.04	1.45E-01	No
	Feeder	Resin Pellets	1,650	0.04	1.45E-01	No
	Conveyor	Additives-Carbon Black Powder	120	25.6	6.73E-03	Yes
	Feeder	Additives	1,350	0.19	5.62E-01	No
	Feeder	Additives	150	0.19	6.24E-02	No
	Feeder Bin	Additives	1,350	0.19	5.62E-01	No
	Feeder Bin	Additives	150	0.19	6.24E-02	No
	Classifier	Finished Product	3,000	0.04	2.63E-01	No
	Surge Bin	Finished Product	3,000	0.04	2.63E-01	No
	Packout Bin	Finished Product	3,000	Negligible		Yes
	Pack Out	Finished Product	3,000	0.04	2.63E-01	No
	Subtotal				2.33	
	Total short fiber lines				8.86	
Mold Room	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	
	Subtotal				1.1E-03	
Research & Development	Pneumatic Conveyance	Resin Pellets	690	0.04	6.04E-02	
Color Blending	Weighing	Additives	237	0.19	9.86E-02	
	Mixing	Additives	237	0.19	9.86E-02	
	Staging	Additives	237	0.19	9.86E-02	
	Subtotal				0.30	

(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 (tons/year) = throughput (lbs/hour) * 8760 hrs/yr * 1ton/2000lbs * emission factor (lbs/ton) * 1ton/2000lbs

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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

POTENTIAL TO EMIT OF LINE 71

Line 71	Type of Material Handled	Throughput (lbs/hr)	Emission Factor (lbs/ton of Material) ⁽¹⁾⁽²⁾	PTE of PM/PM10 (tons/yr)	Integral Control Device ⁽³⁾
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
Catch Pan to Elutriator	Resin Pellets	1,000	0.014	3.07E-05	yes
Surge Bin	Resin Pellets	1,000	0.014	3.07E-02	no
Pack	Resin Pellets	1,000	0.014	3.07E-02	no

Total PTE PM/PM10: 0.26

(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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

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

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NO _x	VOC	CO
	7.6	7.6	0.6	100.0 **see below	5.5	84.0
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_x: Uncontrolled = 100, Low NO_x Burner = 50, Low NO_x 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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

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: 005-215779-00049

Notice-Only change No. : 005-29796-00049

Reviewer: Swarna Prabha

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
TOTAL				0.46

* - 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&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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

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
TOTAL				0.10

*** 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/2000 lbs

**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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

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
TOTAL					0.45

*** 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

Company Name: SABIC Innovative Plastics US LLC
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201
Registration: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

New short- fiber-filled extruded thermoplastic line 93

Emission Unit	Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material) ⁽¹⁾	Control Efficiency	Uncontrolled PM/PM10 PTE (Tons/yr)	Integral Control Device ⁽²⁾	Controlled PM/PM10 PTE (tons/yr)	
Line 93	Draft Weigher	Resin Pellets	600	0.04	99.9%	5.26E-02	Yes	5.26E-05
	Mixer	Resin Pellets	600	0.04	99.9%	5.26E-02	No	5.26E-05
	Feeder	Resin Pellets	600	0.04	99.9%	5.26E-02	No	5.26E-05
	Feeder	Additives	360	0.19	99.9%	1.50E-01	No	1.50E-04
	Feed Bin	Additives	360	0.19	99.9%	1.50E-01	No	1.50E-04
	Classifier	Finished Product	600	0.04	0.0%	5.26E-02	No	5.26E-02
	Catch Bin	Finished Product	600	0.04	99.9%	5.26E-02	No	5.26E-05
	Storage Bin	Finished Product	600	0.04	99.9%	5.26E-02	Yes	5.26E-05
	Pack Out	Finished Product	600	0.04	0.0%	5.26E-02	No	5.26E-02
	Total Line 93							0.053

Notes:

- (1) For the purpose of this NOC registration, conservative emission factors of 0.04 lb/ton and 0.19 lb/ton taken from Registration No. 005-17704-00049, issued August 5, 2003) were used.
- (2) Line 93 is similar in process operation as line 92, refer to page 7 of Attachment A for explanation of integral unit.

Methodology:

Uncontrolled PTE (tons/year) = throughput (lbs/hour) * 8760 hrs/yr * 1ton/2000lbs * emission factor (lbs/ton) * 1ton/2000lbs
Controlled PTE (tons/yr) = Uncontrolled PTE tons/yr *(1-control efficiency)
Note: PM emissions are calculated based on worst-case scenarios.

**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: 005-15779-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha**

Unlimited Potential to Emit (tons/yr)							
Emission Unit	PM	PM10	SO₂	NOx	VOC	CO	HAPs
Long Fiber Lines*	1.48	1.48	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
existing Short Fiber Lines*	8.86	8.86	0.0	0.0		0.0	see note
Short Fiber Line 93*	0.053	0.053	0.0	0.0	8.99	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
Total	15.33	14.85	0.09	14.35	16.53	12.05	0.29

*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.

NOTE: Long Fiber Lines are Line 71, Line 72, Line 73 and Line 74

Short Fiber Lines are Line 81, Line 82, Line 84, Line 90, Line 91, Line 92 and Line 93

Company Name: SABIC Innovative Plastics US LLC
 Address City IN Zip: 945 South Marr Road, Columbus, IN 47201
 Permit Number: 005-27100-00049
 Notice-Only change No. : 005-29796-00049
 Reviewer: Swarna Prabha

Emission Unit	Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material) ⁽¹⁾⁽²⁾	PM/PM10 PTE (Tons/yr)	Integral Control Device	
Resin Pellet Receiving	Large Silos	17,000	0.04	1.49	No	
	Feed Bins	17,000	Negligible		Yes	
Subtotal				1.49		
Line 72	Batch 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
	Pack Feed Out	Finished Product	1,000	0.04	8.76E-02	No
Subtotal				0.258		
Line 73	Batch 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
	Pelletron-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
	Pack Feed Out	Finished Product Resin pellets	1,000	0.014 0.04	3.07E-02	No
Subtotal				0.55		
Line 74	Batch 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
	Pelletron-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
	Pack Feed Out	Finished Product Resin pellets	1,000	0.014 0.04	3.07E-02	No
Subtotal				0.47		
Line 81	Draft Weigher Storage Bin	Resin Pellets	540 2000	Negligible	Yes	
	Mixer	Resin Pellets	540 2000	0.04	1.75E-01	No
	Mixer	Additives	460-900	0.19	3.74E-01	No
	Feeder	Resin Pellets	540 2000	0.04	1.75E-01	No
	Feeder	Additives	460-900	0.19	3.74E-01	No
	Feed Hopper	Resin Pellets	540	0.04	4.73E-02	No
	Feed Hopper	Additives	460	0.19	4.91E-01	No
	Classifier	Finished Product	4000 2000	0.04	1.75E-01	No
	Surge Catch Bin	Finished Product	4000 2000	0.04	1.75E-01	No
	Packout Storage Bin	Finished Product	4000 2000	Negligible		Yes
	Pack Feed Out	Finished Product	4000 2000	0.04	1.75E-01	No
Subtotal				1.62		
Line 82	Draft Weigher Storage Bin	Resin Pellets	540 2000	Negligible	Yes	
	Mixer	Resin Pellets	540 2000	0.04	1.75E-01	No
	Mixer	Additives	460-900	0.19	3.74E-01	No
	Feeder	Resin Pellets	540 2000	0.04	1.75E-01	No
	Feeder	Additives	460 900	0.19	3.74E-01	No
	Feed Bin	Resin Pellets	540	0.04	4.73E-02	No
	Feed Bin	Additives	460	0.19	4.91E-01	No
	Classifier	Finished Product	4000 2000	0.04	1.75E-01	No
	Surge Catch Bin	Finished Product	4000 2000	0.04	1.75E-01	No
	vibratory conveyer	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
	Pack Feed Out	Finished Product	4000 2000	0.04	1.75E-01	No
Subtotal				1.62		

Attachment B: Emissions Calculations
Line 84, Line 90, Line 91, Line 92, modifications 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**
 Notice-Only change No. : **005-29796-00049**
 Reviewer: **Swarna Prabha**

Emission Unit	Type of Material Handled	Throughput (lbs/hour)	Emission Factor (lbs/ton of Material)*	PM/PM10 PTE (Tons/yr)	Integral Control Device	
Line 84	Draft Weigher	Resin Pellets	108	Negligible	Yes	
	Mixer	Resin Pellets	108	0.04	9.46E-03	No
	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
	Feeder-bin	Resin Pellets	108	0.04	9.46E-03	No
	Feeder-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
	Pack Out	Finished Product	200	0.04	1.75E-02	No
	Subtotal			0.15		
Line 90	Draft Weigher-storage bin	Resin Pellets	990	Negligible	Yes	
	Mixer	Resin Pellets	990	0.04	8.67E-02	No
	Feeder Mixer	Resin Pellets	990	0.04	8.67E-02	No
	Feeder	Additives	810	0.19	3.37E-01	No
	Feeder	Additives	126	0.04	5.24E-02	No
	Feeder Bin	Additives	810	0.19	3.37E-01	No
	Feeder Bin	Additives Resin Pellets	126	0.19	5.24E-02	No
	Classifier	Finished Product	1,800	0.04	1.58E-01	No
	Surge Catch Bin	Finished Product	1,800	0.04	1.58E-01	No
	Packout storage Bin	Finished Product	1,800	Negligible		Yes
	Pack Feed Out	Finished Product	1,800	0.04	1.58E-01	No
	Subtotal			1.43		
Line 91	Draft Weigher-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
	Feeder Feed Bin	Additives	900	0.19	3.74E-01	No
	Feeder	Additives	140	0.19	5.83E-02	No
	Feeder	Additives	150	0.19	6.24E-02	No
	Conveyor	Additives-chopped-glass	600	0.11	1.45E-01	No
	Feeder Bin	Additives	900	0.19	3.74E-01	No
	Feeder Bin	Additives	140	0.19	5.83E-02	No
	Feeder Bin	Additives	150	0.19	6.24E-02	No
	Classifier	Finished Product	2,000	0.04	1.75E-01	No
	Catch Surge Bin	Finished Product	2,000	0.04	1.75E-01	No
	Storage Packout Bin	Finished Product	2,000	Negligible		Yes
	Feed Pack Out	Finished Product	2,000	0.04	1.75E-01	No
	Subtotal			1.71		
Line 92	Draft Weigher	Resin Pellets	480 1650	0.04	1.45E-04	Yes
	Mixer	Resin Pellets	480 1650	0.04	1.45E-01	No
	Feeder	Resin Pellets	480 1650	0.04	1.45E-01	No
	Conveyor	Additives-Carbon Black Powder	120	25.6	6.73E-03	No Yes
	Feeder	Additives	420 1350	0.19	5.62E-01	No
	Feeder	Additives	150	0.19	6.24E-02	No
	Feeder Bin	Additives	1,350	0.19	5.62E-01	No
	Feeder Bin	Additives	150	0.19	6.24E-02	No
	Feed Bin	Resin Pellets	480 3,000	0.04		No
	Classifier	Finished Product	600 3,000	0.04	2.63E-01	No
	Surge Catch Bin	Finished Product	600 3,000	0.04	2.63E-01	No
	Packout Storage Bin	Finished Product	600 3,000	Negligible		Yes
	Pack Feed Out	Finished Product	600 3,000	0.04	2.63E-01	No
	Subtotal			2.33		
Mold Room	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	
	Subtotal			1.1E-03		
Research & Development	Pneumatic Conveyance	Resin Pellets	690	0.04	6.04E-02	
Color Blending	Weighing	Additives	237	0.19	9.86E-02	
	Mixing	Additives	237	0.19	9.86E-02	
	Staging	Additives	237	0.19	9.86E-02	
	Subtotal			0.30		
	Total			5.6E+00		

(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 (tons/year) = throughput (lbs/hour) * 8760 hrs/yr * 1ton/2000lbs * emission factor (lbs/ton) * 1ton/2000lbs

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

Company Name: SABIC Innovative Plastics US LLC
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201
Permit Number: 005-27100-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

POTENTIAL TO EMIT OF LINE 71

Line 71	Type of Material Handled	Throughput (lbs/hr)	Emission Factor (lbs/ton of Material) ⁽¹⁾⁽²⁾	PTE of PM/PM10 (tons/yr)	Integral Control Device ⁽³⁾
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
Pack	Resin Pellets	1,000	0.014	3.07E-02	no

Total PTE PM/PM10: 0.26
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 B: Emission Calculations

Particulate emissions after process description modifications

Company Name: SABIC Innovative Plastics US LLC
Address City IN Zip: 945 South Marr Road, Columbus, IN 47201
Permit Number: 005-27100-00049
Notice-Only change No. : 005-29796-00049
Reviewer: Swarna Prabha

	PM	PM10	VOC
*PTE long fiber line after revision	1.53	1.53	0
*PTE long fiber line before revision	2.24	2.24	0
Reduction of PTE for Long Lines	0.71	0.71	0
**Short Fiber Lines After Revision	8.86	8.86	8.53
**Short Fiber Lines Before Revision	11.94	11.94	8.53
Reduction of PTE for Short Lines	3.08	3.08	0

*Long fiber lines are Lines 71, 72, 73 and 74.

**Short Fiber lines are Lines 81,82, 84, 90, 91,and 92



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Joseph Tavenner
SABIC Innovative Plastics US, LLC
945 S Marr Road
Columbus, IN 47201

DATE: December 22, 2010

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

SUBJECT: Final Decision
Notice-Only Change
005-29796-00049

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Scott Hickman – Plant Manager
Holly Argiris – Environmental Resources Management (ERM)
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	GHOTOPP 12/22/2010 SABIC Innovative Plastics US LLC 005-29796-00049 Final		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING	
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1		Joseph Tavenner SABIC Innovative Plastics US LLC 945 S Marr Rd Columbus IN 47201 (Source CAATS) via confirmed delivery										
2		Scott Hickman Plant Mgr SABIC Innovative Plastics US LLC 945 S Marr Rd Columbus IN 47201 (RO CAATS)										
3		Columbus City Council and Mayors Office 123 Washington St Columbus IN 47201 (Local Official)										
4		Mr. Elbert Held 734 Hutchins Columbus IN 47201 (Affected Party)										
5		Mr. Boris Ladwig 333 2nd St Columbus IN 47201 (Affected Party)										
6		Eileen Booher 1316 Chestnut St. Columbus IN 47201 (Affected Party)										
7		Mr. Lcnfc 1039 Sycamore St Columbus IN 47201 (Affected Party)										
8		Bartholomew County Commissioners 440 Third Street Columbus IN 47202 (Local Official)										
9		Mr. Jean Terpstra 3210 Grove Pkwy Columbus IN 47203 (Affected Party)										
10		August Tindell 31 Reo Street Columbus IN 47201 (Affected Party)										
11		Terry Lowe 1110 Central Ave. Columbus IN 47201 (Affected Party)										
12		Mr. Charles Mitch 3210 Grove Parkway Columbus IN 47203 (Affected Party)										
13		Bartholomew County Health Department 440 3rd Street, Suite 303 Columbus IN 47201 (Health Department)										
14		Holly Argiris Environmental Resources Management (ERM) 11350 N. Meridian, Ste 320 Carmel IN 46032 (Consultant)										
15												

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