



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Governor

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Mr. Rob Wells
Primex Plastics Corporation
1235 North F Street
Richmond, Indiana 47374

March 3, 2009

Re: Permit By Rule Status
177-27338-00065

Dear Mr. Wells:

On January 6, 2009, Primex Plastics Corporation submitted a letter with supporting data to the Office of Air Quality (OAQ) indicating that the collocated, stationary, plastic sheet production source, located at 1235 North F Street, Richmond, Indiana 47374 and 2175 Williamsburg Pike, Richmond, Indiana 47374, satisfies the criteria to operate under the provisions of 326 IAC 2-10 (Permit by Rule). Based on the data and information submitted (Attachment A - Source Determination, Attachment B - Emissions Calculations) and the provisions of 326 IAC 2-10 (Permit by Rule), Primex Plastics Corporation, is now operating under Permit by Rule (PBR) Status.

Pursuant to 326 IAC 2-10 (Permit by Rule), this source shall comply with the following conditions:

- (a) The source limits actual emissions for every twelve (12) month period to less than twenty percent (20%) of any threshold for the following:
 - (1) A major source of regulated air pollutants, as defined by 326 IAC 2-7-1(22) (i.e., one hundred (100) tons per year of any regulated air pollutant, in all areas except areas classified as serious, severe, and extreme nonattainment for ozone). [326 IAC 2-10-3.1(1)(A)]
 - (2) A major source of hazardous air pollutants (HAPs), as defined in Section 112 of the Clean Air Act (i.e., ten (10) tons per year of any individual HAP or twenty-five (25) tons per year of any combination of HAPs). [326 IAC 2-10-3.1(1)(B)]
- (b) The source shall not rely on air pollution control equipment to comply with the above-mentioned limitations. [326 IAC 2-10-3.1(2)]
- (c) Not later than thirty (30) days after receipt of written request by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ), or U.S. Environmental Protection Agency (EPA), the owner or operator shall demonstrate that the source is in compliance with the above-mentioned conditions. [326 IAC 2-10-4.1]
- (d) Compliance demonstration shall be based on actual emissions for the previous 12 months and may include, but is not limited to, fuel or material usage or production records. No other demonstration of compliance shall be required. [326 IAC 2-10-4.1]

This source is hereby notified that this Permit by Rule approval does not relieve the source of the responsibility to comply with the provisions of any applicable federal, state, or local requirements, such as New source Performance Standards (NSPS), 40 CFR Part 60, or National Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61 or 40 CFR Part 63. [326 IAC 2-10-5.1]

Any change or modification which will alter operations in such a way that the source will no longer comply with 326 IAC 2-10 (Permit by Rule), must obtain the appropriate approval from the OAQ under 326 IAC 2-1.1, 326 IAC 2-2, 326 IAC 2-3, 326 IAC 2-7, 326 IAC 2-8, or 326 IAC 2-9 before such change may occur. This source may at any time apply for a state operating permit under 326 IAC 2-6.1, a Part 70 permit under 326 IAC 2-7, a FESOP under 326 IAC 2-8, or an operating agreement under 326 IAC 2-9, as applicable. [326 IAC 2-10-1(b)]

Any violation of 326 IAC 2-10 (Permit by Rule) may result in administrative or judicial enforcement proceedings under IC 13-30-3 and penalties under IC 13-30-4, IC 13-30-5, or IC 13-30-6. [326 IAC 2-10-6.1]

A copy of the PBR 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

If you have any questions on this matter, please contact Ms. Desrosiers, of my staff, at 317-234-5374 or 1-800-451-6027, and ask for extension 4-5374.

Sincerely,



Iryn Callung, Section Chief
Permits Branch
Office of Air Quality

Attachments: A - Source Determination
B - Emissions Calculations

IC/hd

cc: File - Wayne County
Wayne County Health Department
Air Compliance Section
Billing, Licensing, and Training Section

Attachment A - Source Determination Primex Plastics Corporation

Primex Plastics Corporation (Primex) has two plants in Richmond. Plant A is located at 1235 North F Street and Plant B is located at 2175 Williamsburg Pike. The two plants are approximately 2.5 miles apart. IDEM, OAQ has examined whether the two plants are part of the same source.

The term "source" is defined at 326 IAC 1-2-73. In order for these two plants to be considered one source, they must meet all three of the following criteria:

- (1) the plants must be under common ownership or common control;
- (2) the plants must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for the other; and,
- (3) the plants must be located on contiguous or adjacent properties.

IDEM, OAQ will first look at whether the two plants will be under common ownership or common control. The two plants are owned by Primex, therefore common ownership exists, and the first element of the definition is met.

The second element of the source definition is whether the plants have the same two-digit Standard Industrial Classification (SIC) Code, or if one serves as a support facility for the other. The SIC Codes can be found at <http://www.osha.gov/pls/imis/sicsearch.html> on the United States Department of Labor, Occupational Safety and Health Administration website. The proper two-digit code for both plants is Major Group 30: Rubber and Miscellaneous Plastics Products.

A plant is considered a support facility if at least 50% of its total output is dedicated to another plant. Plant B sends 80% of its output, reworked plastic, to Plant A. Plant A does not send any output to Plant B. Therefore, Plant B is a support facility to Plant A. Since the two plants have the same two-digit SIC Code and a support facility relationship, the two plants meet the second element of the definition of a source.

Since the plants are located on properties 2.5 miles apart and 80% of the output of Plant B goes to Plant A, the plants are adjacent and the third element of the definition is met. IDEM, OAQ has determined that the two plants meet all the elements of the source definition and are part of the same source.

01/29/2009 initial source determination conducted.

**Attachment B - Emission Calculations
Actual Collocated Emissions Summary**

**Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009**

	PM (tpy)	PM10* (tpy)	VOC (tpy)	CO (tpy)	Combined HAPs (tpy)
Extrusion	2.26	2.26	6.41	2.25	1.26
Grinding	8.85	8.85	--	--	--
Conveyance	0.48	0.48	--	--	--
Wood Pallets Construction	0.15	0.15	--	--	--
Plastic Scrap Cutting	0.15	0.15	--	--	--
Pallet Washing	--	--	0.04	--	--
Total	11.89	11.89	6.45	2.25	1.26

Notes:

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

Attachment B - Emission Calculations
Actual Collocated Emissions - 12-Month Emissions for 2008

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
 Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Criteria Pollutant Emissions

Actual Material Usage (lbs/yr)		
Resin	Raw Material	Colorant
ABS	13,272,000	580,000
HDPE	61,986,000	1,561,000
PETG	2,724,000	3,587
PP	6,916,000	561,000
PS	34,690,000	1,712,000
Additives	--	670,000

Extrusion		Particulate Matter (PM/PM10)*			Volatile Organic Compounds (VOC)			Carbon Monoxide (CO)		
Material	Purchases (lbs/yr)	Emission Factor (lbs/MMlbs)	Actual Emissions (lbs/yr)	Actual Emissions (tons/yr)	Emission Factor (lbs/MMlbs)	Actual Emissions (lbs/yr)	Actual Emissions (tons/yr)	Emission Factor (lbs/MMlbs)	Actual Emissions (lbs/yr)	Actual Emissions (tons/yr)
ABS	14,405,580	30.3	436.49	0.2182	190	2737.06	1.3685	0	0.00	0.0000
HDPE	65,591,430	26.6	1744.73	0.8724	30.7	2013.66	1.0068	50	3279.57	1.6398
PETG	2,947,435	30.0	88.42	0.0442	35	103.16	0.0516	50	147.37	0.0737
PP	7,839,330	30.3	237.53	0.1188	104	815.29	0.4076	90	705.54	0.3528
PS	37,632,080	53.3	2005.79	1.0029	190	7150.10	3.5750	10	376.32	0.1882
Total				2.26			6.41			2.25

Purchases (lbs/yr) = Raw Material (lbs/yr) + Colorant (lbs/yr) + Additives (lbs/yr)

Additives were assumed to be equally distributed between each resin

3% of material is scrapped and recycled, this amount was added to "Purchases (lbs/yr)"

Actual Emissions (tons/year) = Purchases (lbs/yr) x Emission Factor (lbs/1,000,000 lbs) / 2000 (lbs/ton)

Grinding	Max Capacity (lbs/yr)	PM/PM10 Emission Factor* (lb PM/ton)	PM/PM ₁₀ Emissions (tons/yr)
Total	119,588,000	0.296	8.85

Actual Emissions (tons/year) = [Max Capacity (lbs/yr) / 2000 (lbs/ton)] * [Emission Factor (lb PM/ton) / 2000 (lb/ton)]

Conveyance	Max Capacity (lbs/yr)	PM Emission Factor* (lb PM/ton)	*Control Efficiency	PM/PM10 Emissions (lbs/yr)	PM/PM10 Emissions (tons/yr)
Total	119,588,000	0.80	98.00%	956.70	0.48

*Dry filters on the silos and blowers of the storage and handling operations are considered integral to the process. Therefore, PTE is based on control.

Actual Emissions (tons/year) = Max Capacity (lbs/yr) / 2000 (lbs/ton) * Emission Factor (lb PM/ton) * (1-Control Efficiency (%)) / 2000 (lbs/ton)

Miscellaneous Operations	Maximum Rate (lbs/hr)	Emission Factor (lbs PM/ton)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)	Allowable Emissions (lbs/hr)
Wood Pallets Construction	200	0.35	0.04	0.15	0.88
Plastic Scrap Cutting	200	0.35	0.04	0.15	0.88
Total			0.07	0.31	

Actual Emissions (tons/year) = [(Maximum Rate (lbs/hr) * Emission Factor (lbs PM/ton)) / 2000 (lbs/ton)] * 8760 (hrs/yr) / 2000 (lbs/ton)

Pallet Washing	Usage (gal/yr)	Density (lb/gal)	VOC (wt %)	HAP (wt %)	VOC Emissions (tons/yr)	HAP Emissions (tons/yr)
Total	96	8.66	10.00%	0.00%	0.04	0.00

Actual VOC Emissions (tons/year) = Usage (gal/yr) * Density (lb/gal) * VOC (wt %) / 2000 (lbs/ton)

Actual HAP Emissions (tons/year) = Usage (gal/yr) * Density (lb/gal) * HAP (wt %) / 2000 (lbs/ton)

Notes

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

Attachment B - Emission Calculations
Actual Collocated Emissions - 12-Month Emissions for 2008

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
 Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Hazardous Air Pollutant (HAP) Emissions from Extrusion

ABS Processing

Purchases (lbs/yr)	14,405,580						
HAP	1,3-butadiene	Acrylonitrile	Ethyl benzene	Styrene	Cumene	Acetophenone	Total
Emission Factor	0.93	5.74	27.6	130	3.29	2.78	
Emissions (tons)	0.0067	0.0413	0.1988	0.9364	0.0237	0.0200	1.2269

HDPE Processing

Purchases (lbs/yr)	65,591,430				
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde	Total
Emission Factor	0.14	0.02	0.09	0.02	
Emissions (tons)	0.00459	0.00066	0.00295	0.00066	0.0089

PETG Processing

Purchases (lbs/yr)	2,947,435				
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde	Total
Emission Factor	0.14	0.02	0.09	0.02	
Emissions (tons)	0.00021	0.00003	0.00013	0.00003	0.0004

PP Processing

Purchases (lbs/yr)	7,839,330				
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde	Total
Emission Factor	0.74	0.01	0.46	0.05	
Emissions (tons)	0.00290	0.00004	0.00180	0.00020	0.0049

PS Processing

Purchases (lbs/yr)	37,632,080				
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde	Total
Emission Factor	0.74	0.01	0.46	0.05	
Emissions (tons)	0.01392	0.00019	0.00866	0.00094	0.0237

Combined HAPs Total 1.2648 tons

Methodology

Actual HAP Emissions (tons/year) = Purchases (lbs/yr) * Emission Factor (lbs/1,000,000 lbs) / 2000 (lbs/ton)

**Attachment B - Emission Calculations
Potential Collocated Emissions Summary**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

North F Street Location (Source A)

	PM* (tpy)	VOC (tpy)	CO (tpy)	Combined HAPs (tpy)
Extrusion	--	--	--	2.00
Plant 1	4.11	7.24	0.38	--
Plant 2	5.15	2.46	0.89	--
Plant 3	5.93	2.81	2.89	--
Plant 5	0.94	1.99	1.72	--
Conveyance	1.02	--	--	--
Wood Pallets Construction	0.15	--	--	--
Plastic Scrap Cutting	0.15	--	--	--

Williamsburg Pike Location (Source B)

	PM* (tpy)	VOC (tpy)	CO (tpy)	Combined HAPs (tpy)
Conveyance	0.20	--	--	--
Grinding	3.76	--	--	--
Pallet Washing	--	0.04	--	0.00
Total	21.42	14.54	5.88	2.00

Notes:

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

**Attachment B - Emission Calculations
Potential Emissions for Source A, Plant 1**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)	VOC Emission Factor (lb/MMlb)	VOC Emissions (lb/hr)	VOC Emissions (tpy)	CO Emission Factor (lb/MMlb)	CO Emissions (lb/hr)	CO Emissions (tpy)
Extruder 1	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Extruder 2	PS	1300	53.3	0.069	0.303	190	0.247	1.082	10	0.013	0.057
Extruder 3	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Extruder 4	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Extruder 5	PS	1300	53.3	0.069	0.303	190	0.247	1.082	10	0.013	0.057
Extruder 6	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Extruder 7	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Extruder 9	PS	500	53.3	0.027	0.117	190	0.095	0.416	10	0.005	0.022
Extruder 10	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Extruder 11	PS	750	53.3	0.040	0.175	190	0.143	0.624	10	0.008	0.033
Pelletizer	Plastic Rework	350	53.3	0.019	0.082	190	0.067	0.291	10	0.004	0.015
				0.464	2.03		1.653	7.24		0.087	0.38

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)
Grinder 1	Plastic Rework	300	0.296	0.044	0.194
Grinder 2	Plastic Rework	300	0.296	0.044	0.194
Grinder 3	Plastic Rework	300	0.296	0.044	0.194
Grinder 4	Plastic Rework	300	0.296	0.044	0.194
Grinder 5	Plastic Rework	300	0.296	0.044	0.194
Grinder 6	Plastic Rework	300	0.296	0.044	0.194
Grinder 7	Plastic Rework	300	0.296	0.044	0.194
Grinder 8	Plastic Rework	300	0.296	0.044	0.194
Grinder 9	Plastic Rework	200	0.296	0.030	0.130
Grinder 10	Plastic Rework	300	0.296	0.044	0.194
Grinder 11	Plastic Rework	300	0.296	0.044	0.194
				0.474	2.07

	PM (lb/hr)	PM* (tpy)	VOC (lb/hr)	VOC (tpy)	CO (lb/hr)	CO (tpy)
TOTAL PLANT 1	0.937	4.105	1.653	7.240	0.087	0.381

Notes

Emission factors for PS are from "Sampling and Analysis of Fumes Evolved During thermal Processing of Polystyrene Resins", Dow Chemical, et al.

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

PTE (tons/year) = Maximum Rate (lb/hr) x Emission Factor (lbs/1,000,000 lbs) x 8760 (hours/year) x (1 ton/2000 lbs)

**Attachment B - Emission Calculations
Potential Emissions for Source A, Plant 2**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)	VOC Emission Factor (lb/MMlb)	VOC Emissions (lb/hr)	VOC Emissions (tpy)	CO Emission Factor (lb/MMlb)	CO Emissions (lb/hr)	CO Emissions (tpy)
Extruder 1	ABS	800	30.3	0.02	0.11	190	0.15	0.67	0	0.00	0.00
Extruder 2	ABS	700	30.3	0.02	0.09	190	0.13	0.58	0	0.00	0.00
Extruder 3	ABS	800	30.3	0.02	0.11	190	0.15	0.67	0	0.00	0.00
Extruder 4	HDPE	850	26.6	0.02	0.10	30.7	0.03	0.11	50	0.04	0.19
Extruder 5	HDPE	850	26.6	0.02	0.10	30.7	0.03	0.11	50	0.04	0.19
Extruder 6	HDPE	1000	26.6	0.03	0.12	30.7	0.03	0.13	50	0.05	0.22
Extruder 7	HDPE	500	26.6	0.01	0.06	30.7	0.02	0.07	50	0.03	0.11
Extruder 8	HDPE	850	26.6	0.02	0.10	30.7	0.03	0.11	50	0.04	0.19
		6,350.00		0.18	0.78		0.56	2.46		0.20	0.89

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)
Grinder 1	HDPE	950	0.296	0.14	0.62
Grinder 2	HDPE	950	0.296	0.14	0.62
Grinder 3	HDPE	1500	0.296	0.22	0.97
Grinder 5	HDPE	950	0.296	0.14	0.62
Grinder 6	HDPE	950	0.296	0.14	0.62
Grinder 7	HDPE	500	0.296	0.07	0.32
Grinder 8	HDPE	950	0.296	0.14	0.62
				1.00	4.38

	PM (lb/hr)	PM* (tpy)	VOC (lb/hr)	VOC (tpy)	CO (lb/hr)	CO (tpy)
TOTAL PLANT 2	1.18	5.15	0.56	2.46	0.20	0.89

Notes

Emission factors for ABS are from "Sampling and Analysis of VOCs Evolved During Thermal Processing of ABS Composite Resins", D.A. Contos, et al
Emission factors for HDPE are from "Development of Emission Factors for Polyethylene Processing", Anthony Barlow, et al

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

PTE (tons/year) = Maximum Rate (lbs/hr) x Emission Factor (lbs/1,000,000 lbs) x 8760 (hours/year) x (1 ton/2000 lbs)

**Attachment B - Emission Calculations
Potential Emissions for Source A, Plant 3**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)	VOC Emission Factor (lb/MMlb)	VOC Emissions (lb/hr)	VOC Emissions (tpy)	CO Emission Factor (lb/MMlb)	CO Emissions (lb/hr)	CO Emissions (tpy)
Extruder 1	PETG	600	30	0.02	0.08	35	0.02	0.09	50	0.03	0.13
Extruder 2	PETG	600	30	0.02	0.08	35	0.02	0.09	50	0.03	0.13
Extruder 3	HDPE / PP	900	30.3	0.03	0.12	104	0.09	0.41	90	0.08	0.35
Extruder 4	HDPE / PP	900	30.3	0.03	0.12	104	0.09	0.41	90	0.08	0.35
Extruder 5	HDPE / PP	850	30.3	0.03	0.11	104	0.09	0.39	90	0.08	0.34
Extruder 6	HDPE / PP	850	30.3	0.03	0.11	104	0.09	0.39	90	0.08	0.34
Extruder 7	HDPE / PP	850	30.3	0.03	0.11	104	0.09	0.39	90	0.08	0.34
Mega Extruder 8	HDPE	4000	30.3	0.12	0.53	37	0.15	0.65	52	0.21	0.91
		9,550.00		0.29	1.27		0.64	2.81		0.66	2.89

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)
Grinder P1	Plastic Rework	400	0.296	0.06	0.26
Grinder P3	Plastic Rework	400	0.296	0.06	0.26
Grinder P4	Plastic Rework	400	0.296	0.06	0.26
Grinder P5	Plastic Rework	1600	0.296	0.24	1.04
Grinder P6	Plastic Rework	1600	0.296	0.24	1.04
Grinder P7	Plastic Rework	400	0.296	0.06	0.26
Grinder P10	Plastic Rework	1200	0.296	0.18	0.78
Grinder P11	Plastic Rework	1200	0.296	0.18	0.78
				1.07	4.67

	PM (lb/hr)	PM* (tpy)	VOC (lb/hr)	VOC (tpy)	CO (lb/hr)	CO (tpy)
TOTAL PLANT 3	1.35	5.93	0.64	2.81	0.66	2.89

Notes

Emission factors for PP are from "Development of Emission Factors for Polypropylene Processing", Ken Adams, et al.

Emission factors for PETG are from AP-42, Table 4.4-2.

Emission factors for HDPE are from "Development of Emission Factors for Polyethylene Processing", Anthony Barlow, et al.

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

PTE (tons/year) = Maximum Rate (lbs/hr) x Emission Factor (lbs/1,000,000 lbs) x 8760 (hours/year) x (1 ton/2000 lbs)

**Attachment B - Emission Calculations
Potential Emissions for Source A, Plant 5**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)	VOC Emission Factor (lb/MMlb)	VOC Emissions (lb/hr)	VOC Emissions (tpy)	CO Emission Factor (lb/MMlb)	CO Emissions (lb/hr)	CO Emissions (tpy)
Extruder 1	HDPE / PP	1000	30.3	0.03	0.13	104	0.10	0.46	90	0.09	0.39
Extruder 2	HDPE / PP	1000	30.3	0.03	0.13	104	0.10	0.46	90	0.09	0.39
Extruder 3	HDPE / PP	1000	30.3	0.03	0.13	104	0.10	0.46	90	0.09	0.39
Extruder 4	HDPE / PP	250	30.3	0.01	0.03	104	0.03	0.11	90	0.02	0.10
Extruder 5	HDPE / PP	250	30.3	0.01	0.03	104	0.03	0.11	90	0.02	0.10
Extruder 6	HDPE / PP	250	30.3	0.01	0.03	104	0.03	0.11	90	0.02	0.10
Extruder 7	HDPE / PP	250	30.3	0.01	0.03	104	0.03	0.11	90	0.02	0.10
Pelletizer	HDPE / PP	370	30.3	0.01	0.05	104	0.04	0.17	90	0.03	0.15
		4,370.00		0.13	0.58		0.45	1.99		0.39	1.72

Equipment	Resin	Max Throughput (lb/hr)	PM/PM10 Emission Factor (lb/MMlb)	PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)
Grinder 1	Plastic Rework	140	0.296	0.02	0.09
Grinder 2	Plastic Rework	140	0.296	0.02	0.09
Grinder 3	Plastic Rework	140	0.296	0.02	0.09
Grinder 4	Plastic Rework	140	0.296	0.02	0.09
				0.08	0.36

	PM (lb/hr)	PM* (tpy)	VOC (lb/hr)	VOC (tpy)	CO (lb/hr)	CO (tpy)
TOTAL PLANT 5	0.22	0.94	0.45	1.99	0.39	1.72

Notes

Emission factors for HDPE are from "Development of Emission Factors for Polyethylene Processing", Anthony Barlow, et al
Emission factors for PP are from "Development of Emission Factors for Polypropylene Processing", Ken Adams, et al.

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

PTE (tons/year) = Maximum Rate (lbs/hr) x Emission Factor (lbs/1,000,000 lbs) x 8760 (hours/year) x (1 ton/2000 lbs)

**Attachment B - Emission Calculations
Hazardous Air Pollutant (HAP) Emissions from Extrusion**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Potential Material Usage						
Resin	Raw Material Usage (lbs/hr)	Raw Material Usage (lbs/yr)	Colorant Usage (lbs/yr)	Additives Usage (lbs/yr)	Total Usage (lbs/yr)	Total Usage (tons/yr)
ABS	2,300	20,148,000	880,488	347,181	22,016,940	11,008
HDPE	14,800	129,648,000	3,264,939	347,181	137,257,924	68,629
PETG	1,200	10,512,000	13,842	347,181	11,199,214	5,600
PP	8,720	76,387,200	6,196,243	347,181	85,418,543	42,709
PS	8,350	73,146,000	3,609,857	347,181	79,416,130	39,708
Total	35,370	309,841,200	13,965,371	1,735,907	335,308,752	167,654

Methodology

- > Additives were assumed to be equally distributed between each resin
- > The potential pounds per year usage of colorant and additives was estimated from the actual usage using a simple ratio, as follows:
 Potential Colorant Usage (lb/yr) = (Actual Colorant Usage * Potential Resin Usage) / Actual Resin Usage
 Potential Additive Usage (lb/yr) = [(Total Actual Colorant Usage * Total Potential Resin Usage) / Total Actual Resin Usage] / 5
- > Total Usage (lbs/yr) = (Raw Material (lbs/yr) + Colorant (lbs/yr) + Additives (lbs/yr)) * 1.03
 3% of material is scrapped and recycled, this amount was added to "Purchases (lbs/yr)"

ABS Processing

Purchases (lbs/yr)	22,016,940						
HAP	1,3-butadiene	Acrylonitrile	Ethyl benzene	Styrene	Cumene	Acetophenone	Total
Emission Factor	0.93	5.74	27.6	130	3.29	2.78	
Emissions (tons)	0.0102	0.0632	0.3038	1.4311	0.0362	0.0306	1.88

HDPE Processing

Purchases (lbs/yr)	137,257,924					
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde		Total
Emission Factor	0.14	0.02	0.09	0.02		
Emissions (tons)	0.00961	0.00137	0.00618	0.00137		0.02

PETG Processing

Purchases (lbs/yr)	11,199,214					
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde		Total
Emission Factor	0.14	0.02	0.09	0.02		
Emissions (tons)	0.00078	0.00011	0.00050	0.00011		0.002

PP Processing

Purchases (lbs/yr)	85,418,543					
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde		Total
Emission Factor	0.74	0.01	0.46	0.05		
Emissions (tons)	0.03160	0.00043	0.01965	0.00214		0.05

PS Processing

Purchases (lbs/yr)	79,416,130					
HAP	Formaldehyde	Acrolein	Acetaldehyde	Propionaldehyde		Total
Emission Factor	0.74	0.01	0.46	0.05		
Emissions (tons)	0.02938	0.00040	0.01827	0.00199		0.05

Total Combined HAPs	2.00	tons
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Methodology

- > Potential HAP Emissions (tons/year) = Total Usage (lbs/yr) * Emission Factor (lbs/1,000,000 lbs) / 2000 (lbs/ton)

**Attachment B - Emission Calculations
Potential Emissions for Source A, Material Conveyance**

**Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009**

Plant	Max Capacity (lbs/hr)	Process Weight Rate (tons/hr)	Emission Factor* (lb/ton)	Control Efficiency	PM/PM10 Emissions (lb/hr)	PM/PM10** Emissions (tpy)
1	8,700	4.35	0.80	98.00%	0.0696	0.3048
2	6,350	3.18	0.80	98.00%	0.0508	0.2225
3	9,550	4.78	0.80	98.00%	0.0764	0.3346
5	4,370	2.19	0.80	98.00%	0.0350	0.1531
Total					0.23	1.02

Notes

* Emission Factor (lb/ton) taken from Permit # 177-12874-00065

** It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

Potential PM Emissions (lbs/hr) = Max Capacity (lbs/hr) /2000 (lbs/ton) * Emission Factor (lb/ton) * (1-Control Efficiency (%))

Potential PM Emissions (tons/yr) = Potential Emissions (lbs/hr) * 8760 (hrs/yr) / 2000 (lbs/ton)

Attachment B - Emission Calculations
Potential Emissions for Source A, Pallet Construction and Scrap Cutting Operations

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
 Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Equipment	Maximum Rate (lbs/hr)	Process Weight Rate (tons/hr)	Emission Factor (lbs/ton)	Potential	
				PM/PM10 Emissions (lb/hr)	PM/PM10* Emissions (tpy)
Wood Pallets Construction	200	0.10	0.35	0.04	0.15
Plastic Scrap Cutting	200	0.10	0.35	0.04	0.15
TOTAL				0.07	0.31

Notes

* It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

Emission Factors for wood and plastic cutting are from FIRE Version 6.22 for log sawing (SCC# 3-07-008-02).

**Attachment B - Emission Calculations
Potential Emissions for the Source B, Warehouse
Plastic Grinding Rework**

**Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009**

Equipment	Maximum Rate (lbs/hr)	Process Weight Rate (tons/hr)	EF* (lbs/ton)	PM/PM10 Emissions (lb/hr)	PM/PM10** Emissions (tpy)
Grinder 1	1,500	0.75	0.296	0.222	0.972
Grinder 2	1,800	0.90	0.296	0.266	1.167
Grinder 3	2,500	1.25	0.296	0.370	1.621
Total				0.86	3.76

Notes

* Emission factors (EF) were developed by mass balance based on material processed and material collected.

** It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Therefore, PM = PM10 = PM2.5

Potential Emissions (tons/year) = Maximum Rate (lbs/hr) x (1 ton/2000 lbs) x Emission Factor (lbs/ton) x 8760 (hours/year) x (1 ton/2000 lbs)

**Attachment B - Emission Calculations
Total Potential Emissions for Source B, Pallet Washing Station**

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
 Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Cleaning Material	Max Usage (gal/yr)	Density (lb/gal)	VOC (wt %)	HAP (wt %)
WC-314 Cleaner	96	8.66	10.00%	0.00%

VOC (tons/yr)	HAP (tons/yr)
0.04	0.00

Notes

The product contains sodium hydroxide and glycol ether [111-76-2], neither of which are considered a HAP.

VOC (tons/yr) = Max Usage (gal/yr) x Density (lb/gal) x VOC (wt %)

Attachment B - Emission Calculations
Potential Emissions for Source B, Material Conveyance

Company Name: Primex Plastics Corporation
Address City IN Zip: 1235 North F Street,
Richmond, Indiana 47374
Permit #: 177-12874-00065
Reviewer: Hannah L. Desrosiers
Date: January 6, 2009

Plant	Max Capacity (lbs/hr)	Process Weight Rate (tons/hr)	Emission Factor* (lb/ton)	Control Efficiency	PM/PM10 Emissions (lb/hr)	PM/PM10** Emissions (tpy)
1	1,500	0.75	0.80	98.00%	0.0120	0.0526
2	1,800	0.90	0.80	98.00%	0.0144	0.0631
3	2,500	1.25	0.80	98.00%	0.0200	0.0876
Total					0.05	0.20

Notes

* Emission Factor (lb/ton) taken from Permit # 177-12874-00065.

** It is assumed that PM10 Emissions equal PM Emissions, and/or, in the absence of valid PM10 Emission Factors, PM Emission Factors have been used.

Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Dry filters on the silos and blowers are considered integral to the process. Therefore, PTE of PM/PM10 for storage and handling is after control.

Therefore, PM = PM10 = PM2.5

Potential Emissions (lbs/hr) = Max Capacity (lbs/hr) / 2000 (lbs/ton) * Emission Factor (lb/ton) * (1-Control Efficiency (%))

Potential Emissions (tons/yr) = Potential Emissions (lbs/hr) * 8760 (hrs/yr) / 2000 (lbs/ton)