



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL  
SHELBY COUNTY**

**CERTIFIED MAIL**

Street Address:

50 West Town Street, Suite 700

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049

**Application No: 05-14427**

**Fac ID: 0575010239**

**DATE: 2/21/2008**

Hexa Americas, Inc.  
Tomonori Nagasawa  
1150 South Vandemark Road  
Sidney, OH 45365

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
309 South Fourth Street, Room 222  
Columbus, OH 43215

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

CC: USEPA

SWDO



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**Permit To Install  
Terms and Conditions**

**Issue Date: 2/21/2008  
Effective Date: 2/21/2008**

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**FINAL PERMIT TO INSTALL 05-14427**

Application Number: 05-14427  
Facility ID: 0575010239  
Permit Fee: **\$3250**  
Name of Facility: Hexa Americas, Inc.  
Person to Contact: Tomonori Nagasawa  
Address: 1150 South Vandemark Road  
Sidney, OH 45365

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**1150 South Vandemark Road  
Sidney, Ohio**

Description of proposed emissions unit(s):  
**Extrusion Operation with six extruders.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

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Chris Korleski  
Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. Permit to Install General Terms and Conditions

#### 1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

#### 2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

#### 3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

#### 4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon

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the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

**5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

**6. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

**7. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

**8. Termination of Permit to Install**

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

**9. Construction of New Sources(s)**

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The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

#### **10. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

#### **11. Applicability**

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

#### **12. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

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**13. Source Operation and Operating Permit Requirements After Completion of Construction**

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

**14. Construction Compliance Certification**

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**15. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

**B. Permit to Install Summary of Allowable Emissions**

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)  
 TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
VOC	52.8
PM	8.8
PM 10	8.8
HAP's	16.0
Any HAP	7.0

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**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

**Operations, Property, and/or Equipment -(P001) - Extruder 1**

<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.a and A.2.b
OAC rule 3745-17-07(A)	Visible emissions from the stacks shall not exceed 20 % opacity, as a six-minute average.
OAC rule 3745-17-11(B)	The PM limitation specified by this rule is less stringent than the limit established.
OAC rule 3745-21-07(G)	See Section B.1.

**2. Additional Terms and Conditions**

- 2.a** The annual emission limitations for PM and PM10 of 1.46 tons, and VOC, 8.8 tons, are established to reflect potential to emit for this emission unit. Therefore, it is not necessary to establish record keeping and reporting requirements to ensure compliance with these limitations.
- 2.b** The Best Available Technology (BAT) requirements under OAC rule do not apply to the particulate emissions (PE) or volatile organic compound (VOC) emissions from this emissions unit since the potential emissions are less than ten tons per year.

**B. Operational Restrictions**

1. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01 (C)(5), in this emissions unit is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, Ohio EPA, Southwest District Office. Such notification shall include information sufficient to determine that the emissions associated with the proposed

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change in materials will comply with the emissions limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the company identification of the new material to be employed, the composition of the material, and the maximum amount to be used, in pounds per hour.

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The location and color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions.
2. The facility shall maintain the following monthly records if any photochemically reactive materials are used in this emissions unit:
  - a. if any material employed is by definition "Photochemically Reactive", the amount of each material employed, in gallons;
  - b. if any material employed is by definition "Photochemically Reactive", the organic compound content of each material employed, in lbs/gal;
  - c. if any material employed is by definition "Photochemically Reactive", the organic compound (OC) emissions of each material employed, in lbs of OC/day ("c" x "d");
  - d. if any material employed is by definition "Photochemically Reactive", the total (OC) emissions from all materials employed, in lbs of OC/day (sum of all "e");
  - e. if any material employed is by definition "Photochemically Reactive", the total number of hours this emissions unit was operated, in hours/day; and
  - f. if any material employed is by definition "Photochemically Reactive", the estimated hourly OC emission rate, in lbf of OC/hr ("f"/"g").

**D. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports which identify the following:
  - a. an identification of photochemically reactive materials used.

These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that:
  - a. identify all days during which any visible PE were observed from any stack serving this emissions unit;
  - b. identify all days during which any visible fugitive PE were observed from any egress point (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
  - c. describe the corrective actions taken to eliminate the visible PE.

These reports shall be submitted to the Ohio EPA, Southwest District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

**E. Testing Requirements**

Compliance with the emission limitations in Section A..1. of these terms and conditions shall be determined in accordance with the following methods:

1. Emission Limitations:  
Potential particulate emissions (PM) are based on 1.46 tons per 12-month rolling average.

Applicable Compliance Methods:

The PM limitation was established by the following equation:

$$E = Mt \times E_f \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of particulate emissions in tons per year (TPY)

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Mt = maximum material throughput (1.2 tons/hour)  
 Ex = emission factor of 0.2772 lbs PM/Ton of material (Development of Emission Factors for Polypropylene Processing. *Journal of Air and Waste Management Assoc.*, July 2002, 787.)

If required, compliance shall be based upon Methods 1 through 5 of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M

2. Emission Limitations:

Volatile organic compounds (VOC) shall not exceed 8.8 tons per 12-month rolling average.

Applicable Compliance Method:

The tons VOC per year limitation was established by multiplying the maximum hourly material throughput of 1.2 tons by the emissions factor from AP-42 Table 6.6.3-2.

The tons VOC per year limitation was established by the following equation:

$$E = Mt \times (Rf + Dm + Ev + Mo) \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of VOC emissions per hour (lb/hr)

Mt = maximum material throughput (1.2 tons per hour)

Rf = reactor feed material emission factor of 0.16 lb VOC/ton processed

Dm = Dissolver mixer factor for extruder of 0.016 lbs VOC/ton processed

Ev = Extruder Condenser vent emission factor of 0.3 lb VOC/ton processed

Mo = Mineral oil usage (1.42 lbs/hr VOC)

If required, compliance shall be based upon Methods 1 through 4, and 25 or 25A of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M.

3. Visible Emission Limitation:

Visible emissions from the stacks shall not exceed 20% opacity.

Applicable Compliance Method:

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If required, compliance shall be determined by visible emission evaluations performed in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

**F. Miscellaneous Requirements**

None

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**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

**Operations, Property, and/or Equipment - (P002) - Extruder 2**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measure
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.a. and A.2.b.
OAC rule 3745-17-07(A)	Visible emissions from the stacks shall not exceed 20 % opacity, as a six-minute average.
OAC rule 3745-17-11(B)	The PM limitation specified by this rule is less stringent than the limit established.
OAC rule 3745-21-07(G)	See Section B.1.

**2. Additional Terms and Conditions**

- 2.a The annual emission limitations for PM and PM10 of 1.46 tons, and VOC, 8.8 tons, are established to reflect potential to emit for this emission unit. Therefore, it is not necessary to establish record keeping and reporting requirements to ensure compliance with these limitations.
- 2.b The Best Available Technology (BAT) requirements under OAC rule do not apply to the particulate emissions (PE) or volatile organic compound (VOC) emissions from this emissions unit since the potential emissions are less than ten tons per year.

**B. Operational Restrictions**

1. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01 (C)(5), in this emissions unit is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, Ohio EPA, Southwest District Office. Such notification shall include

Emissions Unit ID: P002

information sufficient to determine that the emissions associated with the proposed change in materials will comply with the emissions limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the company identification of the new material to be employed, the composition of the material, and the maximum amount to be used, in pounds per hour.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The location and color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions.
2. The facility shall maintain the following monthly records if any photochemically reactive materials are used in this emissions unit:
  - a. if any material employed is by definition "Photochemically Reactive", the amount of each material employed, in gallons;
  - b. if any material employed is by definition "Photochemically Reactive", the organic compound content of each material employed, in lbs/gal;
  - c. if any material employed is by definition "Photochemically Reactive", the organic compound (OC) emissions of each material employed, in lbs of OC/day ("c" x "d");
  - d. if any material employed is by definition "Photochemically Reactive", the total (OC) emissions from all materials employed, in lbs of OC/day (sum of all "e");
  - e. if any material employed is by definition "Photochemically Reactive", the total number of hours this emissions unit was operated, in hours/day; and
  - f. if any material employed is by definition "Photochemically Reactive", the estimated hourly OC emission rate, in lbf of OC/hr ("f"/"g").

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**D. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports which identify the following:

- a. an identification of photochemically reactive materials used.

These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that:

- a. identify all days during which any visible PE were observed from any stack serving this emissions unit;
- b. identify all days during which any visible fugitive PE were observed from any egress point (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
- c. describe the corrective actions taken to eliminate the visible PE.

These reports shall be submitted to the Ohio EPA, Southwest District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

**E. Testing Requirements**

Compliance with the emission limitations in Section A..1. of these terms and conditions shall be determined in accordance with the following methods:

1. Emission Limitations:  
Particulate emissions (PM) shall not exceed 1.46 tons per 12-month rolling average.

Applicable Compliance Methods:

The PM limitation was established by the following equation:

$$E = Mt \times E_f \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of particulate emissions in tons per year (TPY)

**Hexa Americas, Inc.****DTI Application: 05 11127****Facility ID: 0575010239**Emissions Unit ID: **P002**

Mt = maximum material throughput (1.2 tons/hour)

Ex = emission factor of 0.2772 lbs PM/Ton of material (Development of Emission Factors for Polypropylene Processing. *Journal of Air and Waste Management Assoc.*, July 2002, 787.)

If required, compliance shall be based upon Methods 1 through 5 of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M

2. Emission Limitations:

Volatile organic compounds (VOC) shall not exceed 8.8 tons per 12-month rolling average.

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Applicable Compliance Method:

The tons VOC per year limitation was established by multiplying the maximum hourly material throughput of 1.2 tons by the emissions factor from AP-42 Table 6.6.3-2.

The tons VOC per year limitation was established by the following equation:

$$E = Mt \times (Rf + Dm + Ev + Mo) \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of VOC emissions per hour (lb/hr)

Mt = maximum material throughput (1.2 tons per hour)

Rf = reactor feed material emission factor of 0.16 lb VOC/ton processed

Dm = Dissolver mixer factor for extruder of 0.016 lbs VOC/ton processed

Ev = Extruder Condenser vent emission factor of 0.3 lb VOC/ton processed

Mo = Mineral oil usage (1.42 lbs/hr VOC)

If required, compliance shall be based upon Methods 1 through 4, and 25 or 25A of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M.

3. Visible Emission Limitation:

Visible emissions from the stacks shall not exceed 20% opacity.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

**F. Miscellaneous Requirements**

None

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**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

**Operations, Property, and/or Equipment - (P003) - Extruder 3**

<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.a. and A.2.b.
OAC rule 3745-17-07(A)	Visible emissions from the stacks shall not exceed 20 % opacity, as a six-minute average.
OAC rule 3745-17-11(B)	The PM limitation specified by this rule is less stringent than the limit established.
OAC rule 3745-21-07(G)	See Section B.1.

**2. Additional Terms and Conditions**

- 2.a** The annual emission limitations for PM and PM10 of 1.46 tons, and VOC, 8.8 tons, are established to reflect potential to emit for this emission unit. Therefore, it is not necessary to establish record keeping and reporting requirements to ensure compliance with these limitations.
- 2.b** The Best Available Technology (BAT) requirements under OAC rule do not apply to the particulate emissions (PE) or volatile organic compound (VOC) emissions from this emissions unit since the potential emissions are less than ten tons per year.

**B. Operational Restrictions**

1. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01 (C)(5), in this emissions unit is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, Ohio EPA, Southwest District Office. Such notification shall include information sufficient to determine that the emissions associated with the proposed

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change in materials will comply with the emissions limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the company identification of the new material to be employed, the composition of the material, and the maximum amount to be used, in pounds per hour.

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The location and color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions.
2. The facility shall maintain the following monthly records if any photochemically reactive materials are used in this emissions unit:
  - a. if any material employed is by definition "Photochemically Reactive", the amount of each material employed, in gallons;
  - b. if any material employed is by definition "Photochemically Reactive", the organic compound content of each material employed, in lbs/gal;
  - c. if any material employed is by definition "Photochemically Reactive", the organic compound (OC) emissions of each material employed, in lbs of OC/day ("c" x "d");
  - d. if any material employed is by definition "Photochemically Reactive", the total (OC) emissions from all materials employed, in lbs of OC/day (sum of all "e");
  - e. if any material employed is by definition "Photochemically Reactive", the total number of hours this emissions unit was operated, in hours/day; and
  - f. if any material employed is by definition "Photochemically Reactive", the estimated hourly OC emission rate, in lbf of OC/hr ("f"/"g").

**D. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports which identify the following:

- a. an identification of photochemically reactive materials used.

These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that:

- a. identify all days during which any visible PE were observed from any stack serving this emissions unit;
- b. identify all days during which any visible fugitive PE were observed from any egress point (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
- c. describe the corrective actions taken to eliminate the visible PE.

These reports shall be submitted to the Ohio EPA, Southwest District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

**E. Testing Requirements**

Compliance with the emission limitations in Section A..1. of these terms and conditions shall be determined in accordance with the following methods:

1. Emission Limitations:  
Particulate emissions (PM) shall not exceed 1.46 tons per 12-month rolling average.

Applicable Compliance Methods:

The PM limitation was established by the following equation:

$$E = Mt \times E_f \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of particulate emissions in tons per year (TPY)

Mt = maximum material throughput (1.2 tons/hour)

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Ex = emission factor of 0.2772 lbs PM/Ton of material (Development of Emission Factors for Polypropylene Processing. *Journal of Air and Waste Management Assoc.*, July 2002, 787.)

If required, compliance shall be based upon Methods 1 through 5 of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M

2. Emission Limitations:

Volatile organic compounds (VOC) shall not exceed 8.8 tons per 12-month rolling average.

**Issued: 2/21/2008**

Applicable Compliance Method:

The tons VOC per year limitation was established by multiplying the maximum hourly material throughput of 1.2 tons by the emissions factor from AP-42 Table 6.6.3-2.

The tons VOC per year limitation was established by the following equation:

$$E = Mt \times (Rf + Dm + Ev + Mo) \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of VOC emissions per hour (lb/hr)

Mt = maximum material throughput (1.2 tons per hour)

Rf = reactor feed material emission factor of 0.16 lb VOC/ton processed

Dm = Dissolver mixer factor for extruder of 0.016 lbs VOC/ton processed

Ev = Extruder Condenser vent emission factor of 0.3 lb VOC/ton processed

Mo = Mineral oil usage (1.42 lbs/hr VOC)

If required, compliance shall be based upon Methods 1 through 4, and 25 or 25A of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M.

3. Visible Emission Limitation:

Visible emissions from the stacks shall not exceed 20% opacity.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

**F. Miscellaneous Requirements**

None

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

**Operations, Property, and/or Equipment -(P004) - Extruder 4**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.a. and A.2.b.
OAC rule 3745-17-07(A)	Visible emissions from the stacks shall not exceed 20 % opacity, as a six-minute average.
OAC rule 3745-17-11(B)	The PM limitation specified by this rule is less stringent than the limit established.
OAC rule 3745-21-07(G)	See B.1.

**2. Additional Terms and Conditions**

- 2.a The annual emission limitations for PM and PM10 of 1.46 tons, and VOC, 8.8 tons, are established to reflect potential to emit for this emission unit. Therefore, it is not necessary to establish record keeping and reporting requirements to ensure compliance with these limitations.
- 2.b The Best Available Technology (BAT) requirements under OAC rule do not apply to the particulate emissions (PE) or volatile organic compound (VOC) emissions from this emissions unit since the potential emissions are less than ten tons per year.

**B. Operational Restrictions**

1. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01 (C)(5), in this emissions unit is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, Ohio EPA, Southwest District Office. Such notification shall include information sufficient to determine that the emissions associated with the proposed change in materials will comply with the emissions limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the

**Issued: 2/21/2008**

company identification of the new material to be employed, the composition of the material, and the maximum amount to be used, in pounds per hour.

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The location and color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions.
  
2. The facility shall maintain the following monthly records if any photochemically reactive materials are used in this emissions unit:
  - a. if any material employed is by definition "Photochemically Reactive", the amount of each material employed, in gallons;
  - b. if any material employed is by definition "Photochemically Reactive", the organic compound content of each material employed, in lbs/gal;
  - c. if any material employed is by definition "Photochemically Reactive", the organic compound (OC) emissions of each material employed, in lbs of OC/day ("c" x "d");
  - d. if any material employed is by definition "Photochemically Reactive", the total (OC) emissions from all materials employed, in lbs of OC/day (sum of all "e");
  - e. if any material employed is by definition "Photochemically Reactive", the total number of hours this emissions unit was operated, in hours/day; and
  - f. if any material employed is by definition "Photochemically Reactive", the estimated hourly OC emission rate, in lbf of OC/hr ("f"/"g").

**D. Reporting Requirements**

Emissions Unit ID: P004

1. The permittee shall submit quarterly deviation (excursion) reports which identify the following:
  - a. an identification of photochemically reactive materials used.

These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that:
  - a. identify all days during which any visible PE were observed from any stack serving this emissions unit;
  - b. identify all days during which any visible fugitive PE were observed from any egress point (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
  - c. describe the corrective actions taken to eliminate the visible PE.

These reports shall be submitted to the Ohio EPA, Southwest District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

## E. Testing Requirements

Compliance with the emission limitations in Section A..1. of these terms and conditions shall be determined in accordance with the following methods:

1. Emission Limitations:  
Particulate emissions (PM) shall not exceed 1.46 tons per 12-month rolling average.

Applicable Compliance Methods:

The PM limitation was established by the following equation:

$$E = Mt \times E_f \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of particulate emissions in tons per year (TPY)

Mt = maximum material throughput (1.2 tons/hour)

Ex = emission factor of 0.2772 lbs PM/Ton of material (Development of Emission Factors for Polypropylene Processing. *Journal of Air and Waste Management Assoc.*,

**Issued: 2/21/2008**

July 2002, 787.)

If required, compliance shall be based upon Methods 1 through 5 of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M

2. Emission Limitations:

Volatile organic compounds (VOC) shall not exceed 8.8 tons per 12-month rolling average.

**Issued: 2/21/2008**

Applicable Compliance Method:

The tons VOC per year limitation was established by multiplying the maximum hourly material throughput of 1.2 tons by the emissions factor from AP-42 Table 6.6.3-2.

The tons VOC per year limitation was established by the following equation:

$$E = Mt \times (Rf + Dm + Ev + Mo) \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of VOC emissions per hour (lb/hr)

Mt = maximum material throughput (1.2 tons per hour)

Rf = reactor feed material emission factor of 0.16 lb VOC/ton processed

Dm = Dissolver mixer factor for extruder of 0.016 lbs VOC/ton processed

Ev = Extruder Condenser vent emission factor of 0.3 lb VOC/ton processed

Mo = Mineral oil usage (1.42 lbs/hr VOC)

If required, compliance shall be based upon Methods 1 through 4, and 25 or 25A of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M.

3. Visible Emission Limitation:

Visible emissions from the stacks shall not exceed 20% opacity.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

**F. Miscellaneous Requirements**

None

Issued: 2/21/2008

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

**Operations, Property, and/or Equipment -(P005) - Extruder 5**

<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.a. and A.2.b.
OAC rule 3745-17-07(A)	Visible emissions from the stacks shall not exceed 20 % opacity, as a six-minute average.
OAC rule 3745-17-11(B)	The PM limitation specified by this rule is less stringent than the limit established.
OAC rule 3745-21-07(G)	See Section B.1.

**2. Additional Terms and Conditions**

- 2.a The annual emission limitations for PM and PM10 of 1.46 tons, and VOC, 8.8 tons, are established to reflect potential to emit for this emission unit. Therefore, it is not necessary to establish record keeping and reporting requirements to ensure compliance with these limitations.
- 2.b The Best Available Technology (BAT) requirements under OAC rule do not apply to the particulate emissions (PE) or volatile organic compound (VOC) emissions from this emissions unit since the potential emissions are less than ten tons per year.

**B. Operational Restrictions**

1. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01 (C)(5), in this emissions unit is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, Ohio EPA, Southwest District Office. Such notification shall include information sufficient to determine that the emissions associated with the proposed

Emissions Unit ID: P005

change in materials will comply with the emissions limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the company identification of the new material to be employed, the composition of the material, and the maximum amount to be used, in pounds per hour.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The location and color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions.
2. The facility shall maintain the following monthly records if any photochemically reactive materials are used in this emissions unit:
  - a. if any material employed is by definition "Photochemically Reactive", the amount of each material employed, in gallons;
  - b. if any material employed is by definition "Photochemically Reactive", the organic compound content of each material employed, in lbs/gal;
  - c. if any material employed is by definition "Photochemically Reactive", the organic compound (OC) emissions of each material employed, in lbs of OC/day ("c" x "d");
  - d. if any material employed is by definition "Photochemically Reactive", the total (OC) emissions from all materials employed, in lbs of OC/day (sum of all "e");
  - e. if any material employed is by definition "Photochemically Reactive", the total number of hours this emissions unit was operated, in hours/day; and
  - f. if any material employed is by definition "Photochemically Reactive", the estimated hourly OC emission rate, in lbf of OC/hr ("f"/"g").

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#### D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which identify the following:
  - a. an identification of photochemically reactive materials used.

These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that:
  - a. identify all days during which any visible PE were observed from any stack serving this emissions unit;
  - b. identify all days during which any visible fugitive PE were observed from any egress point (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
  - c. describe the corrective actions taken to eliminate the visible PE.

These reports shall be submitted to the Ohio EPA, Southwest District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

#### E. Testing Requirements

Compliance with the emission limitations in Section A..1. of these terms and conditions shall be determined in accordance with the following methods:

1. Emission Limitations:  
Particulate emissions (PM) shall not exceed 1.46 tons per 12-month rolling average.

Applicable Compliance Methods:

The PM limitation was established by the following equation:

$$E = Mt \times E_f \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of particulate emissions in tons per year (TPY)

Mt = maximum material throughput (1.2 tons/hour)

**Hexa Americas, Inc.****DTI Application: 05 11127****Facility ID: 0575010239**Emissions Unit ID: **P005**

Ex = emission factor of 0.2772 lbs PM/Ton of material (Development of Emission Factors for Polypropylene Processing. *Journal of Air and Waste Management Assoc.*, July 2002, 787.)

If required, compliance shall be based upon Methods 1 through 5 of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M

2. Emission Limitations:

Volatile organic compounds (VOC) shall not exceed 8.8 tons per 12-month rolling average.

**Issued: 2/21/2008**

Applicable Compliance Method:

The tons VOC per year limitation was established by multiplying the maximum hourly material throughput of 1.2 tons by the emissions factor from AP-42 Table 6.6.3-2.

The tons VOC per year limitation was established by the following equation:

$$E = Mt \times (Rf + Dm + Ev + Mo) \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of VOC emissions per hour (lb/hr)

Mt = maximum material throughput (1.2 tons per hour)

Rf = reactor feed material emission factor of 0.16 lb VOC/ton processed

Dm = Dissolver mixer factor for extruder of 0.016 lbs VOC/ton processed

Ev = Extruder Condenser vent emission factor of 0.3 lb VOC/ton processed

Mo = Mineral oil usage (1.42 lbs/hr VOC)

If required, compliance shall be based upon Methods 1 through 4, and 25 or 25A of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M.

3. Visible Emission Limitation:

Visible emissions from the stacks shall not exceed 20% opacity.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

**F. Miscellaneous Requirements**

None

Issued: 2/21/2008

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

**Operations, Property, and/or Equipment -(P006) - Extruder 6**

<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.a. and A.2.b.
OAC rule 3745-17-07(A)	Visible emissions from the stacks shall not exceed 20 % opacity, as a six-minute average.
OAC rule 3745-17-11(B)	The PM limitation specified by this rule is less stringent than the limit established.
OAC rule 3745-21-07(G)	See Section B.1.

**2. Additional Terms and Conditions**

- 2.a** The annual emission limitations for PM and PM10 of 1.46 tons, and VOC, 8.8 tons, are established to reflect potential to emit for this emission unit. Therefore, it is not necessary to establish record keeping and reporting requirements to ensure compliance with these limitations.
- 2.b** The Best Available Technology (BAT) requirements under OAC rule do not apply to the particulate emissions (PE) or volatile organic compound (VOC) emissions from this emissions unit since the potential emissions are less than ten tons per year.

**B. Operational Restrictions**

1. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01 (C)(5), in this emissions unit is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, Ohio EPA, Southwest District Office. Such notification shall include information sufficient to determine that the emissions associated with the proposed

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change in materials will comply with the emissions limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the company identification of the new material to be employed, the composition of the material, and the maximum amount to be used, in pounds per hour.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The location and color of the emissions;
  - b. The total duration of any visible emission incident; and
  - c. Any corrective actions taken to eliminate the visible emissions.
2. The facility shall maintain the following monthly records if any photochemically reactive materials are used in this emissions unit:
  - a. if any material employed is by definition "Photochemically Reactive", the amount of each material employed, in gallons;
  - b. if any material employed is by definition "Photochemically Reactive", the organic compound content of each material employed, in lbs/gal;
  - c. if any material employed is by definition "Photochemically Reactive", the organic compound (OC) emissions of each material employed, in lbs of OC/day ("c" x "d");
  - d. if any material employed is by definition "Photochemically Reactive", the total (OC) emissions from all materials employed, in lbs of OC/day (sum of all "e");
  - e. if any material employed is by definition "Photochemically Reactive", the total number of hours this emissions unit was operated, in hours/day; and
  - f. if any material employed is by definition "Photochemically Reactive", the estimated hourly OC emission rate, in lbf of OC/hr ("f"/"g").

**D. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports which identify the following:

- a. an identification of photochemically reactive materials used.

These reports are due by the date described in Part I - General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that:

- a. identify all days during which any visible PE were observed from any stack serving this emissions unit;
- b. identify all days during which any visible fugitive PE were observed from any egress point (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
- c. describe the corrective actions taken to eliminate the visible PE.

These reports shall be submitted to the Ohio EPA, Southwest District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

**E. Testing Requirements**

Compliance with the emission limitations in Section A..1. of these terms and conditions shall be determined in accordance with the following methods:

1. Emission Limitations:  
Particulate emissions (PM) shall not exceed 1.46 tons per 12-month rolling average.

Applicable Compliance Methods:

The PM limitation was established by the following equation:

$$E = Mt \times E_f \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of particulate emissions in tons per year (TPY)

Mt = maximum material throughput (1.2 tons/hour)

**Issued: 2/21/2008**

Ex = emission factor of 0.2772 lbs PM/Ton of material (Development of Emission Factors for Polypropylene Processing. *Journal of Air and Waste Management Assoc.*, July 2002, 787.)

If required, compliance shall be based upon Methods 1 through 5 of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M

2. Emission Limitations:

Volatile organic compounds (VOC) shall not exceed 8.8 tons per 12-month rolling average.

**Issued: 2/21/2008**

Applicable Compliance Method:

The tons VOC per year limitation was established by multiplying the maximum hourly material throughput of 1.2 tons by the emissions factor from AP-42 Table 6.6.3-2.

The tons VOC per year limitation was established by the following equation:

$$E = Mt \times (Rf + Dm + Ev + Mo) \times (8760\text{hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

where,

E = mass of VOC emissions per hour (lb/hr)

Mt = maximum material throughput (1.2 tons per hour)

Rf = reactor feed material emission factor of 0.16 lb VOC/ton processed

Dm = Dissolver mixer factor for extruder of 0.016 lbs VOC/ton processed

Ev = Extruder Condenser vent emission factor of 0.3 lb VOC/ton processed

Mo = Mineral oil usage (1.42 lbs/hr VOC)

If required, compliance shall be based upon Methods 1 through 4, and 25 or 25A of 40 CFR, Part 60, Appendix A, and Method 204 of 40 CFR, Part 51, Appendix M.

3. Visible Emission Limitation:

Visible emissions from the stacks shall not exceed 20% opacity.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

**F. Miscellaneous Requirements**

None