

Synthetic Minor Determination and/or **Netting Determination**

Permit To Install **01-08761**

A. Source Description

Bayer Corporation - Polymers Division operates several compounding thermoplastic resin extruding lines at its facility in Hebron, Licking County, Ohio. Currently, Bayer has three active PTIs, one Synthetic Minor (01-08649) and two PTIs (01-08566 - P033 and 01-08598 - P034, P035) for three extruding lines not covered in their Synthetic Minor PTI. Bayer has requested an increase in the capacity for P034 as well as federally enforceable limits for P033, P034 and P035, but will not alter the operation or capacity of P033 or P035. Therefore, this Synthetic Minor PTI (01-08671) will provide federally enforceable limits for emission units P033, P034 and P035. This will provide federally enforceable limits for all the emission units at the facility and avoid the need for the FESOP approach and, thus, ensure consistent terms and conditions relative to the PTIs and PTOs for these emission units.

B. Facility Emissions and Attainment Status

The facility has the potential to emit before (pre) and after (post) this permit as follows:

	Emissions	Pre-Synthetic Minor (tons)	Post Synthetic Minor (tons)
Facility	VOC	220.1	99.9
	HAPs	149 (combined)	9.9 (combined)

C. Source Emissions

The pre-synthetic minor emissions assume that the facility operates at its maximum hourly capacity every hour of the year and considers the maximum capacity of all equipment. The post synthetic minor emissions requires the use of a regenerative thermal oxidizer (RTO) and an acid gas scrubber (AGS) and assumes the following:

Capture efficiency at die face = 85% (based on testing witnessed by Ohio EPA 12/8/00)

Control equipment (RTO) = 99% destruction efficiency of VOC and any HAP (stack test conducted 04/22/02)

Control equipment (acid gas scrubber) = 95% control efficiency of HCl based on manufacturers expected control efficiency

D. Conclusion

The synthetic minor combined with other facility federally enforceable permits will effectively restrict the VOC and HAP emissions below the Title V thresholds. The operational restrictions, record keeping and reporting requirements will ensure that compliance with this permit is achieved and maintained. In addition, the facility-wide individual and combined HAP emissions are effectively limited to less than 9.9 tons per rolling, 12-month period and 24.9 tons per rolling, 12-month period. In addition, the VOC emissions are effectively limited to less than 99.0 tons per rolling, 12-month period. All emissions are restricted through the use of the RTO and the AGS and the federally enforceable limits on the VOC and HAP contents of the products run at the facility. All emissions units were installed after June 29, 1998, therefore, a restriction on HAPs is necessary in order to avoid OAC 3745-31-28 or any proposed MACT.



State of Ohio Environmental Protection Agency

Street Address:

Mailing Address:

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

Lazarus Gov.
Center

**RE: DRAFT PERMIT TO INSTALL
LICKING COUNTY**

CERTIFIED MAIL

Application No: 01-08761

DATE: 9/25/2003

Bayer Corporation Polymers Division
Buck Steorts
1111 O Neill Drive SE
Hebron, OH 43025

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$500** will be due. Please do not submit any payment now.

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. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Very truly yours,

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

cc: USEPA

CDO

PUBLIC NOTICE

ISSUANCE OF DRAFT PERMIT TO INSTALL **01-08761** FOR AN AIR CONTAMINANT SOURCE FOR
BAYER CORPORATION POLYMERS DIVISION

On 9/25/2003 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Bayer Corporation Polymers Division**, located at **1111 ONeill Drive SE, Hebron, Ohio**.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 01-08761:

thermoplastic compounding.

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Isaac Robinson, Ohio EPA, Central District Office, 3232 Alum Creek Drive, Columbus, OH 43207-3417
[(614)728-3778]



**Permit To Install
Terms and Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 01-08761

Application Number: 01-08761
APS Premise Number: 0145020221
Permit Fee: **To be entered upon final issuance**
Name of Facility: Bayer Corporation Polymers Division
Person to Contact: Buck Steorts
Address: 1111 O Neill Drive SE
Hebron, OH 43025

Location of proposed air contaminant source(s) [emissions unit(s)]:

**1111 O'Neill Drive SE
Hebron, Ohio**

Description of proposed emissions unit(s):

Thermoplastic compounding.

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

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 quarterly, i.e., 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 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)

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.

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

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule

Bayer Corporation Polymers Division

PTI Application: 01-08761

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3745-77-08(C)(3)(d).

Facility ID: 0145020221

Issued: To be entered upon final issuance

- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. 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 source(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>
HAP	9.9 (individual)
HAPs	24.9 (combined)
VOC	99.9

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P033 - Thermoplastic compounding extruder line no. 5A vented to a thermal oxidizer and acid gas scrubber (Terms in this permit supercede those identified in PTI 01-08566 issued 08/08/02).	OAC rule 3745-31-05 (A)(3) OAC rule 3745-35-07(B) OAC rule 3745-21-07 (G)	Volatile organic compound (VOC) emissions shall not exceed 0.40 lb/hr and 1.8 tons/yr. The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B). Facility-wide VOC emissions shall not exceed 99.9 tons per rolling, 12-month period. See II.A.2.a-e and II.B.1-7 below. The emission limitation specified in this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a Emissions from this emission unit shall be vented to a Recuperative Thermal Oxidizer (RTO) followed by an Acid Gas Scrubber (AGS).
- 2.b The emission unit's 0.40 lb VOC/hr and 1.8 tons VOC/yr emission limitations are based on the emission unit's potential to emit vented through the above referenced control

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equipment. Therefore, only the monitoring, record keeping or reporting requirements of the control equipment are necessary to ensure compliance with these emission limitations.

- 2.c** The total allowable usage of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from this facility shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitation shall be based on a rolling, 12-month summation.
- 2.d** The total allowable emission rates of VOC, HAP and HAPs from this facility are based upon a facility wide potential to emit calculation employing emission factors listed in term C.6 of this permit and in the accompanying PTI application as submitted on June 12, 2003. As such, the permittee shall not employ any products with emission factors for VOC, HAP and/or HAPs which exceed the emission factors specified in this permit and the accompanying PTI application.
- 2.e** As of the issuance date of this permit, the following emissions units are designated as facility wide emissions units: emissions units P022, P023, P024, P026, P027, P028, P029, P030, P031, P033, P034 and P035.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1500 degrees Fahrenheit.
2. The pressure drop across the scrubber shall be continuously maintained within the range of 0.5-3.0 inches of liquid at all times while the emissions unit is in operation.
3. The scrubber liquid flow rate shall be continuously maintained within the range of 85-350 gallons per minute at all times while the emissions unit is in operation.
4. The pH of the scrubber liquor shall be maintained within the range of 7.5 to 9.0.
5. The permittee shall capture at least 85% of the emissions from this emissions unit and vent them to the recuperative thermal oxidizer followed by the acid gas scrubber. The capture hood shall be in the proper capture position and shall be in operation at all times P033 is operating.
6. The RTO shall operate with a destruction efficiency of not less than 99%.
7. The AGS shall operate with a control efficiency of not less than 95%.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

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- a. all 3-hour blocks of time during which the combustion temperature within the thermal oxidizer, when the emissions unit was in operation, dropped below 1500 degrees Fahrenheit; and
 - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
2. The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquid flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

- a. the pressure drop across the scrubber, in inches of water on an hourly basis;
 - b. the scrubber liquid flow rate, in gallons per minute on an hourly basis; and
 - c. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
3. The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall collect and record the pH of the scrubber liquor, on a continuous basis.
4. The permit to install for emission unit P033 thru P035 was evaluated based on the actual materials and the design parameters of the emission unit and facility's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by emissions units P033 thru P035 using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene
TLV (mg/m³): 85
Maximum Hourly Emission Rate (lbs/hr): 0.25

Bayer

PTI A

Emissions Unit ID: **P033**

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Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 10.7

MAGLC (ug/m3): 2024

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Physical changes to or changes in the method of operation of the emissions unit or facility exhaust after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of or use of materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or the facility exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
5. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall maintain monthly records of the following information:
- the name and production rate of each product produced by each extruder;
 - the name of each product produced and the associated emission factor for VOC and each HAP, in pounds per 1000 pounds of product, from each extruder;
 - the total emission rate of VOC and each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene), in pounds, from each extruder;

The emission rate shall be quantified by summing the emission rate from each extruder. The emissions from each extruder shall be determined by summing the stack and fugitive emissions. Stack emissions shall be determined by multiplying the production rate by the appropriate stack emission factor* by the control efficiency (1.0 - 0.99) established during the most recent stack test. Fugitive emissions shall be determined by multiplying the production rate by the appropriate fugitive emission factor*.

* The permittee shall use the following worst case emission factors unless product specific emission factors are available and approved by the Central District Office:

VOC	= 1.787 lbs/1000 lbs ABS-Lustran throughput (Testing, 8/14/00 thru 8/16/00); (stack)
	= 0.315 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00 thru 8/16/00); (fugitive)
Styrene	= 1.097 lbs/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (stack)
	= 0.194 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (fugitive)
MEK	= 0.127 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (stack)
	= 0.0225 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (fugitive)
1,3 Butadiene	= 0.083 lb/1000 lbs ABS - Lustran throughput (Testing, 5/31/00); (stack)
	= 0.015 lb/1000 lbs ABS - Lustran throughput (Testing, 5/31/00); (fugitive)
Acrylonitrile	= 0.247 lb/1000 lbs ABS - Lustran throughput (Testing, 8/16/00); (stack)
	= 0.044 lb/1000 lbs ABS - Lustran throughput (Testing, 8/16/00); (fugitive)
Chlorobenzene	= 0.213 lb/1000 lbs PC-Makrolon throughput (Testing, 5/31/00); (stack)
	= 0.038 lb/1000 lbs PC-Makrolon throughput (Testing, 5/31/00); (fugitive)

Emissions after control:

Capture efficiency at die face = 85% (based on testing witnessed by Ohio EPA 12/8/00)

Control equipment (RTO) = 99% destruction efficiency of VOC and any HAP (stack test)

conducted 04/22/02)

Control equipment (acid gas scrubber) = 95% control efficiency of HCl based on manufacturers expected control efficiency

- d. the facility-wide emission rate of VOC, each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene) and combined HAPs, in tons; and
- e. the facility-wide rolling, 12-month summation of the emission rate of VOC, each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene) and combined HAPs, in tons.

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D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above;
 - b. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. the static pressure drop across the scrubber; and
 - ii. the scrubber liquid flow rate.
 - c. pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

The permittee shall also submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation. These reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

2. The permittee shall submit quarterly deviation reports showing any deviation from the VOC, individual HAP or combined HAPs rolling, 12-month emission limitations. The permittee shall also submit quarterly deviation reports showing any exceedences of the VOC and/or HAP emission factors (pounds of pollutant per 1000 pounds of product). These reports shall include a description of the deviation, as well as the corrective actions that were taken to achieve compliance.
3. All reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

E. Testing Requirements

1. Compliance with the emission limitations in section A.1. of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
VOC emissions shall not exceed 0.40 lb/hr.

Bayer

PTI A

Emissions Unit ID: **P033**

Issued: To be entered upon final issuance

Applicable Compliance Method:

Compliance shall be demonstrated by summing the captured and fugitive emissions. The captured emissions shall be quantified by multiplying the captured emission factor of 1.787 lb/1000 lb of product (Testing, 8/14/00 thru 8/16/00) by the maximum throughput of 1200

Bayer

PTI A

Emissions Unit ID: **P033**

Issued: To be entered upon final issuance

lb of product/hr by the control efficiency of the RTO (1-0.99) based on the most recent compliance demonstration (03/13/02). The fugitive emissions shall be quantified by multiplying the fugitive emission factor of 0.315 lb/1000 lb of product (Testing, 8/14/00 thru 8/16/00) by the maximum throughput of 1200 lb of product/hr.

- b. Emission Limitation:
VOC emissions shall not exceed 1.8 tons/yr.

Applicable Compliance Method:
Compliance shall be demonstrated by multiplying the maximum pound per hour emission rate by 8760 hrs/yr and dividing by 2000 lbs/ton.

Compliance with the annual emission limitation shall be assumed as long as compliance with the hourly emission limitation is maintained.

- c. Emission Limitation:
Facility-wide VOC emissions shall not exceed 99.9 tons per rolling, 12-month period.

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- d. Emission Limitation:
Facility-wide emissions of individual HAPs shall not exceed 9.9 tons per rolling, 12-month period.

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- e. Emission Limitation:
Facility-wide emissions of combined HAPs shall not exceed 24.9 tons per rolling, 12-month period.

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- f. Emission Limitation:
Emission factors listed in term C.6

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

Bayer Corporation Polymers Division
PTI A
Issued

Facility ID: 0145020221

Emissions Unit ID: P033

F. Miscellaneous Requirements

None

Bayer

PTI A

Emissions Unit ID: P034

Issued: To be entered upon final issuance

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P034 - Thermoplastic extruder line no. 4 vented to a thermal oxidizer and acid gas scrubber (Terms in this permit supercede those identified in PTI 01-08598 issued August 13, 2003.).	OAC rule 3745-31-05 (A)(3)	Volatile organic compound (VOC) emissions shall not exceed 1.2 lbs/hr and 5.1 tons/yr. The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
	OAC rule 3745-35-07(B)	Facility-wide VOC emissions shall not exceed 99.9 tons per rolling, 12-month period. See II.A.2.a-e and II.B.1-7 below.
	OAC rule 3745-21-07 (G)	The emission limitation specified in this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a Emissions from this emission unit shall be vented to a Recuperative Thermal Oxidizer (RTO) followed by an Acid Gas Scrubber (AGS).
- 2.b The emission unit's 1.2 lbs VOC/hr and 5.1 tons VOC/yr emission limitations are based on the emission unit's potential to emit vented through the above referenced control equipment. Therefore, only the monitoring, record keeping or reporting requirements of the control equipment are necessary to ensure compliance with these emission limitations.

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- 2.c** The total allowable usage of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from this facility shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitation shall be based on a rolling, 12-month summation.
- 2.d** The total allowable emission rates of VOC, HAP and HAPs from this facility are based upon a facility wide potential to emit calculation employing emission factors listed in term C.6 of this permit and in the accompanying PTI application as submitted on June 12, 2003. As such, the permittee shall not employ any products with emission factors for VOC, HAP and/or HAPs which exceed the emission factors specified in this permit and the accompanying PTI application.
- 2.e** As of the issuance date of this permit, the following emissions units are designated as facility wide emissions units: emissions units P022, P023, P024, P026, P027, P028, P029, P030, P031, P033, P034 and P035.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1500 degrees Fahrenheit.
2. The pressure drop across the scrubber shall be continuously maintained within the range of 0.5-3.0 inches of liquid at all times while the emissions unit is in operation.
3. The scrubber liquid flow rate shall be continuously maintained within the range of 85-350 gallons per minute at all times while the emissions unit is in operation.
4. The pH of the scrubber liquor shall be maintained within the range of 7.5 to 9.0.
5. The permittee shall capture at least 85% of the emissions from this emissions unit and vent them to the recuperative thermal oxidizer followed by the acid gas scrubber. The capture hood shall be in the proper capture position and shall be in operation at all times P033 is operating.
6. The RTO shall operate with a destruction efficiency of not less than 99%.
7. The AGS shall operate with a control efficiency of not less than 95%.

C. Monitoring and/or Recordkeeping Requirements

Emissions Unit ID: **P034**

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

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- a. all 3-hour blocks of time during which the combustion temperature within the thermal oxidizer, when the emissions unit was in operation, dropped below 1500 degrees Fahrenheit; and
 - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
2. The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquid flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

- a. the pressure drop across the scrubber, in inches of water on an hourly basis;
 - b. the scrubber liquid flow rate, in gallons per minute on an hourly basis; and
 - c. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
3. The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall collect and record the pH of the scrubber liquor, on a continuous basis.
4. The permit to install for emission unit P033 thru P035 was evaluated based on the actual materials and the design parameters of the emission unit and facility's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by emissions units P033 thru P035 using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85

Maximum Hourly Emission Rate (lbs/hr): 0.72

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Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 30.9

MAGLC (ug/m3): 2024

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Physical changes to or changes in the method of operation of the emissions unit or facility exhaust after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of or use of materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or the facility exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
5. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall maintain monthly records of the following information:
- a. the name and production rate of each product produced by each extruder;
 - b. the name of each product produced and the associated emission factor for VOC and each HAP, in pounds per 1000 pounds of product, from each extruder;
 - c. the total emission rate of VOC and each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene), in pounds, from each extruder;

The emission rate shall be quantified by summing the emission rate from each extruder. The emissions from each extruder shall be determined by summing the stack and fugitive emissions. Stack emissions shall be determined by multiplying the production rate by the appropriate stack emission factor* by the control efficiency (1.0 - 0.99) established during the most recent stack test. Fugitive emissions shall be determined by multiplying the production rate by the appropriate fugitive emission factor*.

* The permittee shall use the following worst case emission factors unless product specific emission factors are available and approved by the Central District Office:

VOC	= 1.787 lbs/1000 lbs ABS-Lustran throughput (Testing, 8/14/00 thru 8/16/00); (stack)
	= 0.315 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00 thru 8/16/00); (fugitive)
Styrene	= 1.097 lbs/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (stack)
	= 0.194 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (fugitive)
MEK	= 0.127 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (stack)
	= 0.0225 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (fugitive)
1,3 Butadiene	= 0.083 lb/1000 lbs ABS - Lustran throughput (Testing, 5/31/00); (stack)
	= 0.015 lb/1000 lbs ABS - Lustran throughput (Testing, 5/31/00); (fugitive)
Acrylonitrile	= 0.247 lb/1000 lbs ABS - Lustran throughput (Testing, 8/16/00); (stack)
	= 0.044 lb/1000 lbs ABS - Lustran throughput (Testing, 8/16/00); (fugitive)
Chlorobenzene	= 0.213 lb/1000 lbs PC-Makrolon throughput (Testing, 5/31/00); (stack)
	= 0.038 lb/1000 lbs PC-Makrolon throughput (Testing, 5/31/00); (fugitive)

Emissions after control:

Capture efficiency at die face = 85% (based on testing witnessed by Ohio EPA 12/8/00)

Control equipment (RTO) = 99% destruction efficiency of VOC and any HAP (stack test)

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conducted 04/22/02)

Control equipment (acid gas scrubber) = 95% control efficiency of HCl based on manufacturers expected control efficiency

- d. the facility-wide total emission rate of VOC, each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene) and combined HAPs, in tons; and
- e. the facility-wide rolling, 12-month summation of the emission rate of VOC, each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene) and combined HAPs, in tons.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above;
 - b. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. the static pressure drop across the scrubber; and
 - ii. the scrubber liquid flow rate.
 - c. pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

The permittee shall also submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation. These reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

2. The permittee shall submit quarterly deviation reports showing any deviation from the VOC, individual HAP or combined HAPs rolling, 12-month emission limitations. The permittee shall also submit quarterly deviation reports showing any exceedences of the VOC and/or HAP emission factors (pounds of pollutant per 1000 pounds of product). These reports shall include a description of the deviation, as well as the corrective actions that were taken to achieve compliance.
3. All reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

E. Testing Requirements

1. Compliance with the emission limitations in section A.1. of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
VOC emissions shall not exceed 1.2 lbs/hr.

Applicable Compliance Method:

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Compliance shall be demonstrated by summing the captured and fugitive emissions. The captured emissions shall be quantified by multiplying the captured emission factor of 1.787 lb/1000 lb of product (Testing, 8/14/00 thru 8/16/00) by the maximum throughput of 3500

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lbs of product/hr by the control efficiency of the RTO (1-0.99) based on the most recent compliance demonstration (03/13/02). The fugitive emissions shall be quantified by multiplying the fugitive emission factor of 0.315 lb/1000 lb of product (Testing, 8/14/00 thru 8/16/00) by the maximum throughput of 3500 lbs of product/hr.

- b. Emission Limitation:
VOC emissions shall not exceed 5.1 tons/yr.

Applicable Compliance Method:
Compliance shall be demonstrated by multiplying the maximum pound per hour emission rate by 8760 hrs/yr and dividing by 2000 lbs/ton.

Compliance with the annual emission limitation shall be assumed as long as compliance with the hourly emission limitation is maintained.

- c. Emission Limitation:
Facility-wide VOC emissions shall not exceed 99.9 tons per rolling, 12-month period.

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- d. Emission Limitation:
Facility-wide emissions of individual HAPs (MEK, 1,3-butadiene, acrylonitrile, styrene, and chlorobenzene) shall not exceed 9.9 tons per rolling, 12-month period.

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- e. Emission Limitation:
Facility-wide emissions of combined HAPs shall not exceed 24.9 tons per rolling, 12-month period.

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- f. Emission Limitation:
Emission factors listed in term C.6

Applicable Compliance Method:
Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

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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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P035 - Thermoplastic compounding extruder line no. 10 vented to a thermal oxidizer and acid gas scrubber (Terms in this permit supercede those identified in PTI 01-08598 issued August 13, 2003.).	OAC rule 3745-31-05 (A)(3)	Volatile organic compound (VOC) emissions shall not exceed 2.93 lbs/hr and 12.8 tons/yr.
	OAC rule 3745-35-07(B)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B). Facility-wide VOC emissions shall not exceed 99.9 tons per rolling, 12-month period. See II.A.2.a-e and II.B.1-7 below.
	OAC rule 3745-21-07 (G)	The emission limitation specified in this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a Emissions from this emission unit shall be vented to a Recuperative Thermal Oxidizer (RTO) followed by an Acid Gas Scrubber (AGS).
- 2.b The emission unit's 2.93 lbs VOC/hr and 12.8 tons VOC/yr emission limitations are based on the emission unit's potential to emit vented through the above referenced control equipment. Therefore, only the monitoring, record keeping or reporting requirements of the control equipment are necessary to ensure compliance with these emission limitations.

- 2.c** The total allowable usage of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from this facility shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitation shall be based on a rolling, 12-month summation.
- 2.d** The total allowable emission rates of VOC, HAP and HAPs from this facility are based upon a facility wide potential to emit calculation employing emission factors listed in term C.6 of this permit and in the accompanying PTI application as submitted on June 12, 2003. As such, the permittee shall not employ any products with emission factors for VOC, HAP and/or HAPs which exceed the emission factors specified in this permit and the accompanying PTI application.
- 2.e** As of the issuance date of this permit, the following emissions units are designated as facility wide emissions units: emissions units P022, P023, P024, P026, P027, P028, P029, P030, P031, P033, P034 and P035.

B. Operational Restrictions

- 1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1500 degrees Fahrenheit.
- 2. The pressure drop across the scrubber shall be continuously maintained within the range of 0.5-3.0 inches of liquid at all times while the emissions unit is in operation.
- 3. The scrubber liquid flow rate shall be continuously maintained within the range of 85-350 gallons per minute at all times while the emissions unit is in operation.
- 4. The pH of the scrubber liquor shall be maintained within the range of 7.5 to 9.0.
- 5. The permittee shall capture at least 85% of the emissions from this emissions unit and vent them to the recuperative thermal oxidizer followed by the acid gas scrubber. The capture hood shall be in the proper capture position and shall be in operation at all times P033 is operating.
- 6. The RTO shall operate with a destruction efficiency of not less than 99%.
- 7. The AGS shall operate with a control efficiency of not less than 95%.

C. Monitoring and/or Recordkeeping Requirements

- 1. The permittee shall operate and maintain a continuous temperature monitor and recorder which

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Emissions Unit ID: **P035**

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measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

Emissions Unit ID: **P035**

- a. all 3-hour blocks of time during which the combustion temperature within the thermal oxidizer, when the emissions unit was in operation, dropped below 1500 degrees Fahrenheit; and
 - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
2. The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquid flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

- a. the pressure drop across the scrubber, in inches of water on an hourly basis;
 - b. the scrubber liquid flow rate, in gallons per minute on an hourly basis; and
 - c. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
3. The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall collect and record the pH of the scrubber liquor, on a continuous basis.
4. The permit to install for emission unit P033 thru P035 was evaluated based on the actual materials and the design parameters of the emission unit and facility's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by emissions units P033 thru P035 using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Styrene

TLV (mg/m³): 85

Maximum Hourly Emission Rate (lbs/hr): 1.24

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 53.2

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Issued: To be entered upon final issuance

MAGLC (ug/m3): 2024

Emissions Unit ID: **P035**

Issued: To be entered upon final issuance

Physical changes to or changes in the method of operation of the emissions unit or facility exhaust after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of or use of materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or the facility exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
5. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall maintain monthly records of the following information:
- the name and production rate of each product produced by each extruder;
 - the name of each product produced and the associated emission factor for VOC and each HAP, in pounds per 1000 pounds of product, from each extruder;
 - the total emission rate of VOC and each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene), in pounds, from each extruder;

The emission rate shall be quantified by summing the emission rate from each extruder. The emissions from each extruder shall be determined by summing the stack and fugitive emissions. Stack emissions shall be determined by multiplying the production rate by the appropriate stack emission factor* by the control efficiency (1.0 - 0.99) established during the most recent stack test. Fugitive emissions shall be determined by multiplying the production rate by the appropriate fugitive emission factor*.

* The permittee shall use the following worst case emission factors unless product specific emission factors are available and approved by the Central District Office

VOC	= 1.787 lbs/1000 lbs ABS-Lustran throughput (Testing, 8/14/00 thru 8/16/00); (stack)
	= 0.315 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00 thru 8/16/00); (fugitive):
Styrene	= 1.097 lbs/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (stack)
	= 0.194 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (fugitive)
MEK	= 0.127 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (stack)
	= 0.0225 lb/1000 lbs ABS-Lustran throughput (Testing, 8/14/00); (fugitive)
1,3 Butadiene	= 0.083 lb/1000 lbs ABS - Lustran throughput (Testing, 5/31/00); (stack)
	= 0.015 lb/1000 lbs ABS - Lustran throughput (Testing, 5/31/00); (fugitive)
Acrylonitrile	= 0.247 lb/1000 lbs ABS - Lustran throughput (Testing, 8/16/00); (stack)
	= 0.044 lb/1000 lbs ABS - Lustran throughput (Testing, 8/16/00); (fugitive)
Chlorobenzene	= 0.213 lb/1000 lbs PC-Makrolon throughput (Testing, 5/31/00); (stack)
	= 0.038 lb/1000 lbs PC-Makrolon throughput (Testing, 5/31/00); (fugitive)

Emissions after control:

Capture efficiency at die face = 85% (based on testing witnessed by Ohio EPA 12/8/00)

Control equipment (RTO) = 99% destruction efficiency of VOC and any HAP (stack test conducted 04/22/02)

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Emissions Unit ID: **P035**

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Control equipment (acid gas scrubber) = 95% control efficiency of HCl based on manufacturers expected control efficiency

- d. the facility-wide total emission rate of VOC, each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene) and combined HAPs, in tons; and
- e. the facility-wide rolling, 12-month summation of the emission rate of VOC, each individual HAP (MEK, 1,3-butadiene, acrylonitrile, styrene, chlorobenzene) and combined HAPs, in tons.

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D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above;
 - b. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. the static pressure drop across the scrubber; and
 - ii. the scrubber liquid flow rate.
 - c. pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

The permittee shall also submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation. These reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

2. The permittee shall submit quarterly deviation reports showing any deviation from the VOC, individual HAP or combined HAPs rolling, 12-month emission limitations. The permittee shall also submit quarterly deviation reports showing any exceedences of the VOC and/or HAP emission factors (pounds of pollutant per 1000 pounds of product). These reports shall include a description of the deviation, as well as the corrective actions that were taken to achieve compliance.
3. All reports are due by the date described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

E. Testing Requirements

1. Compliance with the emission limitations in section A.1. of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
VOC emissions shall not exceed 2.93 lbs/hr.

Bayer Corporation Polymers Division

PTI A

Issued

Facility ID: 0145020221

Emissions Unit ID: P035

Applicable Compliance Method:

Compliance shall be demonstrated by summing the captured and fugitive emissions. The captured emissions shall be quantified by multiplying the captured emission factor of 1.787 lb/1000 lb of product (Testing, 8/14/00 thru 8/16/00) by the maximum throughput of 8800

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Emissions Unit ID: **P035**

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lbs of product/hr by the control efficiency of the RTO (1-0.99) based on the most recent compliance demonstration (03/13/02). The fugitive emissions shall be quantified by multiplying the fugitive emission factor of 0.315 lb/1000 lb of product (Testing, 8/14/00 thru 8/16/00) by the maximum throughput of 8800 lbs of product/hr.

- b. Emission Limitation:
VOC emissions shall not exceed 12.8 tons/yr.

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the maximum pound per hour emission rate by 8760 hrs/yr and dividing by 2000 lbs/ton.

Compliance with the annual emission limitation shall be assumed as long as compliance with the hourly emission limitation is maintained.

- c. Emission Limitation:
Facility-wide VOC emissions shall not exceed 99.9 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- d. Emission Limitation:
Facility-wide emissions of individual HAPs (MEK, 1,3-butadiene, acrylonitrile, styrene, and chlorobenzene) shall not exceed 9.9 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- e. Emission Limitation:
Facility-wide emissions of combined HAPs shall not exceed 24.9 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

- f. Emission Limitation:
Emission factors listed in term C.6

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping found in Part II.C.6 above.

Bayer

PTI A

Issued: To be entered upon final issuance

Emissions Unit ID: **P035**

F. Miscellaneous Requirements

None