

1

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. 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.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(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 are inadequate or cannot meet applicable standards.

If the construction of the proposed source(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 Ohio Administrative Code (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

2

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

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 applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

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.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

3

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

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.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

SOURCE OPERATION 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 and regulations.

4

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

5

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **Bayer Corporation** located in **Hamilton** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio
EPA
Source
Number

Source
Identification
Description

P021

Polymeri-zation
process unit vented
to boilers

P029
Cont'd

P029

Polymer compounding
process with fabric
filter, scrubber and
thermal oxidizer

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
		thermal oxidizer with at least a 95 percent control efficiency and compliance with Air Toxics Policy.		
	BAT <u>Determination</u>			Emissions vented to boiler with at least a 99.99 percent control efficiency and compliance with 40 CFR Part 63, Subpart JJJ.
				Use of dust collector with at least 99 percent control efficiency, scrubber with at least a 95 percent control efficiency,

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
				PM ₁₀
	Applicable Federal & OAC Rules	3745-17-07	Permit Allowable Mass Emissions and/or Control/Usage Requirements	See Additional Special Term and Conditions A.4. Less stringent.
		3745-17-11*		
	3745-15-07		See general terms	
	3745-21-07*		Less stringent	
	3745-31-05		0.35 pound/hour OC, 8.4 pounds/day OC and 1.6 tons/year OC	
	40 CFR Part 63, Subpart JJJ		See Additional Special Term and Conditions A.3.	
	3745-15-07		See general terms	
	3745-31-05		20.38 pounds/hour OC, 11.43 tons/year OC	
			2.1 pounds/hour PM	
			9.21 tons/year PM	
			1.48 pounds/hour PM ₁₀	
			6.49 tons/year	

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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* The emission limitations established by this rule is less stringent than those established by OAC rule 3745-31-05 (BAT).

SUMMARY

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
Organic Compound	13.03
PM	9.21
PM ₁₀	6.49

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Hamilton County Dept. of Env. Services, 250 William Howard Taft Road, Cincinnati, OH 45219-2660.**

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering

9

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Hamilton County Dept. of Env. Services, 250 William Howard Taft Road, Cincinnati, OH 45219-2660.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

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.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

A. Applicable Emission Limitations and/or Control Requirements

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

1. All process emissions from emissions unit P021 shall be vented to a boiler for incineration, with a control efficiency of at least 99.99 percent.
2. Particulate and volatile organic compound emissions from the extruder associated with emissions unit P029 shall be captured and vented to a venturi scrubber having a particulate control efficiency of at least 95 percent. Volatile organic compound emissions from the venturi scrubber shall be directed to a thermal oxidizer having a control efficiency of at least 95 percent, except during the allowable scrubber atmospheric venting period. Emissions unit P029 shall not vent to the atmosphere from the scrubber for more than 720 hours per calendar year.
3. The permittee shall comply with all applicable emission limitations and/or control requirements of 40 CFR Part 63, Subpart JJJ for emissions unit P021.
4. Visible particulate emissions from any stack for emissions unit P029 shall not exceed 20 percent opacity, except as specified by rule.

B. Operational Restrictions

1. The pressure drop across the venturi scrubber for emissions unit P029 shall be continuously maintained within the range of 20 to 35 inches of water at all times while emissions unit P029 is in operation.
2. The scrubber water flow rate shall be continuously maintained at a value of not less than 110 gallons per minute at all times while the emissions unit P029 is in operation.
3. The thermal oxidizer's combustion chamber temperature shall not be less than 1450 degrees Fahrenheit at any time when the organic emissions from emissions unit P029 is being vented to the thermal oxidizer.
4. Emissions vented to the boiler(s) for percent reduction shall be introduced into the flame zone of such a device.
5. The amount of polymer processed through the uncontrolled silos shall not exceed 112,500,000 pounds per year.

C. Monitoring and Recordkeeping Requirements

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

1. The permittee shall properly install, operate and maintain equipment to measure the static pressure drop across the scrubber and the scrubber water flow rate while emissions unit P029 is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

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

- a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;
 - b. the scrubber water flow rate, in gallons per minute, on a once per shift basis; and,
 - c. the operating times for the capture (collection) system, venturi scrubber, monitoring equipment, and the associated emissions units.
2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion chamber temperature within the thermal oxidizer serving emissions unit P029. Units shall be in degrees Fahrenheit. The monitoring and control 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 each day:

- a. all time during which the combustion chamber temperature within the thermal oxidizer, when the emissions unit was in operation, was below 1450 degrees Fahrenheit; and,
- b. the operating times for the capture (collection) system, thermal oxidizer and the associated emissions units.

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

3. The permittee shall maintain records that include the following information for each period during which volatile organic emissions from emissions unit P029 are vented to the atmosphere from the scrubber during scheduled maintenance shutdown:
 - a. the date of the thermal oxidizer control device shutdown; and,
 - b. the time interval over which the thermal oxidizer control device shutdown occurred.
4. The permittee shall visually inspect each of the control devices which are required to control particulate emissions from emissions unit P029 for visible holes or tears, bag leaks, and excessive dusting or visible emissions on a daily basis. Corrective actions shall be initiated if any of the above control device malfunctions are detected.

The permittee shall maintain daily records of the date, time, and the results of the visual inspections. The date, time, and description of any corrective actions taken to remedy control device malfunctions shall also be recorded.

5. The permittee shall comply with all applicable monitoring and recordkeeping requirements specified in 40 CFR Part 63, Subpart JJJ.
6. The permittee shall maintain monthly records of the amount in pounds of polymer processed through any of the uncontrolled silos.
7. 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, unless otherwise specified in this permit.

D. Reporting Requirements

1. The permittee shall submit required reports in the following manner:

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

- a. reports of any required monitoring and/or recordkeeping information shall be submitted to the Hamilton County Dept. of Env. Services; and,
- 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 Hamilton County Dept. of Env. Services. 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 30, April 30, July 30, and October 30 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).

2. The permittee shall submit deviation reports which provide the following information for each time the thermal oxidizer combustion chamber temperature falls below 1450 degrees Fahrenheit when emissions unit P029 is being vented to the thermal oxidizer:
 - a. the date of the excursion;
 - b. the time interval over which the excursion occurred;
 - c. the temperature values during the excursion;
 - d. the cause(s) for the excursion; and,
 - e. the corrective action which has been or will be taken to prevent similar excursions in the future.
3. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any scheduled major maintenance requiring the shutdown of the thermal oxidizer control device and the scheduled

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

shutdown duration two (2) weeks prior to the shutdown.

The permittee shall submit semi-annual reports that contain the information requested in Additional Special Terms and Conditions C.3.a and C.3.b. This report shall be submitted to the Hamilton County Department of Environmental Services by January 30 and July 30 of each year and shall cover the previous six (6) calendar months (July through December and January through June, respectively).

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the static pressure drop across the scrubber and the scrubber water flow rate was not maintained at or above the required levels.
5. The permittee shall submit semi-annual reports to the Hamilton County Department of Environmental Services which summarize any visible inspections that detected a control device malfunction during the previous six months. This report shall also include a description of the corrective actions which have been or will be taken to remedy the control device malfunction(s). The reports shall be submitted by January 30 and July 30 of each year and shall cover the previous six (6) calendar months (July through December and January through June, respectively).
6. The reports required in Additional Special Terms and Conditions D.1, D.2, D.3 and D.4 do not waive the reporting requirements of OAC rule 3745-15-06.
7. The permittee shall submit a Notification of Compliance status within 150 operating days after initial startup. The notification shall contain the information specified in §§63.1335(e)(5)(i)-(viii). The permittee shall also comply with all other reporting requirements of this subpart.
8. The permittee shall submit annual reports that identify any exceedances of the production rate limitation in Additional Special Term and Condition B.5, as well as the corrective actions that were taken to achieve compliance. These reports shall be submitted by January

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

30 of each year.

E. Compliance Methods/Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions unit P029 in accordance with the following requirements:
 - a. the emission testing shall be conducted within 6 months after installation of this modification. In the event that the permittee chooses to retrofit a control device, an emissions test shall be conducted within 6 months after the retrofit occurs. The frequency of testing may be changed by the Director based on the results of the performance testing;
 - b. the emission testing shall be conducted to demonstrate compliance with the control device efficiency limitation for the thermal oxidizer and the scrubber;
 - c. the test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Dept. of Env. Services; and,
 - d. the control device efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol.

The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Dept. of Env. Services.

The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

for review and approval prior to the test(s) may result in the Hamilton County Dept. of Env. Services refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Dept. of Env. Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Dept. of Env. Services within 30 days following completion of the test(s).

2. The permittee shall conduct, or have conducted, emission testing for emissions unit P021 in accordance with the following requirements:
 - a. the emission testing shall be conducted within 6 months after installation of this modification;

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

- b. the emission testing shall be conducted to demonstrate compliance with 40 CFR Subpart JJJ and the overall control efficiency limitation while emissions are being vented to the boilers;
- c. the test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Dept. of Env. Services; and,
- d. the control device efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Dept. of Env. Services.

The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Dept. of Env. Services refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Dept. of Env. Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Dept. of Env. Services within 30 days

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

following completion of the test(s).

3. Compliance with the polymer feed limitation in Additional Special Term and Condition B.5. shall be demonstrated by the recordkeeping in Additional Special Term and Condition C.6.

F. Miscellaneous Requirements

1. The permittee shall comply with all applicable miscellaneous requirements of 40 CFR Part 63, Subpart JJJ.
2. This permit allows the use of the materials specified by the permittee in the PTI 14-4668. In conjunction with the best available technology requirements of OAC rule 3745-31-05, the organic compound emission limitation(s) specified in this permit was (were) established in accordance with the Ohio EPA's "Air Toxics Policy" and is (are) based on both the emission data and the design parameters of the emissions unit's exhaust system, as specified in the application. Compliance with the Ohio EPA's "Air Toxics Policy" was demonstrated for each pollutant based on the SCREEN 3.0 model and a comparison of the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground Level Concentration (MAGLC).

The following summarizes the results of the modeling for each pollutant:

Pollutant: Styrene

TLV (ug/m3): 85,000

Maximum Hourly Emission Rate (lbs/hr): 14.3

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 202

MAGLC (ug/m3): 2024

Pollutant: Acrylonitrile

TLV (ug/m3): 4300

Maximum Hourly Emission Rate (lbs/hr): 0.9

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 30

MAGLC (ug/m3): 102

As long as the application of the "Air Toxic Policy" continues to show compliance with the applicable MAGLC, the permittee may implement any of the following changes with prior notification to and approval from the Hamilton County Department of Environmental

Facility Name: **Bayer Corporation**

Application Number: **14-4668**

Date: **February 18, 1999**

Services:

- a. any changes in the composition of the coatings or cleanup materials, or the use of new coatings or cleanup 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 specified in the above table; and,
- b. any change to the emissions unit or its exhaust parameters (e.g., increased emission rate, reduction of exhaust gas flow rate, and decreased stack height);

For any change in the emissions unit or its method of operation that would either require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a permit to install prior to the change.