



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
CUYAHOGA COUNTY
Application No: 13-03833**

CERTIFIED MAIL

DATE: 8/21/2001

Research Organics
Fred Sternfeld
4353 East 49th Street
Cuyahoga Heights, OH 44125

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 **\$2400** 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,

Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

CBAPC

PA



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**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 13-03833

Application Number: 13-03833
APS Premise Number: 1318172081
Permit Fee: **To be entered upon final issuance**
Name of Facility: Research Organics
Person to Contact: Fred Sternfeld
Address: 4353 East 49th Street
Cuyahoga Heights, OH 44125

Location of proposed air contaminant source(s) [emissions unit(s)]:
**4353 East 49th Street
Cuyahoga Heights, Ohio**

Description of proposed emissions unit(s):
Process sources P023, P024, P025, P027, P028, P029, P030, P031, P032, P033, P036, P037; Dryers 5, 6, 7, 8 and FZ-1, Reactors 14, 15, 16, 17, 18, 19 and ADA.

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 Related to Monitoring and Recordkeeping 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

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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

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lead to such sanctions

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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 application must be made to the Director for the installation or modification of any other emissions unit(s).

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

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

- 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 thirty (30) 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>
OC	10.35
HCL acid	1.68

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>
P023 - Tumbler Dryer 5: V- Tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.057 lbs/hr and 0.25 tpy OC emissions: 0.25 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	exempt, see A.1.2.a

2. Additional Terms and Conditions

- 2.a This emissions unit shall not employ organic liquids which are photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5).

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
 - b. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.
 - c. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

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Issued: To be entered upon final issuance

Emissions Unit ID: **P023**

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drop across Tower No. 2, the scrubber's water flow rate in Tower No. 2 and the scrubber's liquor temperature in Tower No. 2 while the emissions unit 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 scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.
- b. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
- c. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - d. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall collect and record the following information each month:
 - a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
3. The permit to install for this emissions unit P023 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

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Emissions Unit ID: **P023**

(MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

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Emissions Unit ID: **P023**

Pollutant: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

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Emissions Unit ID: **P023**

Issued: To be entered upon final issuance

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify each day during which any photochemically reactive materials were employed. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 2.
 - b. The scrubber water flow rate in Tower No 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

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Emissions Unit ID: **P023**

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1. Emission Limitation:
0.057 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
0.25 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.2, emission factors developed by the company and the following equation:

$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

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>
P024 - Tumbler Dryer 6: Rotating double cone tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.13 lbs/hr and 0.57 tpy OC emissions: 0.57 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	exempt, see A.1.2.a

2. Additional Terms and Conditions

- 2.a This emissions unit shall not employ organic liquids which are photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5).

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
 - b. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.

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Emissions Unit ID: **P024**

- c. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drop across Tower No. 2, the scrubber's water flow rate in Tower No. 2 and the scrubber's liquor temperature in Tower No. 2 while the emissions unit 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 scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.
 - b. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - c. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - d. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall collect and record the following information each month:
 - a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 3. The permit to install for this emissions unit P024 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

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Emissions Unit ID: **P024**

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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):

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Emissions Unit ID: **P024**

Issued: To be entered upon final issuance

Pollutant: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

Emissions Unit ID: **P024**

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify each day during which any photochemically reactive materials were employed. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 2.
 - b. The scrubber water flow rate in Tower No 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

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Emissions Unit ID: **P024**

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.13 lbs/hr OC emissions

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Emissions Unit ID: **P024**

Issued: To be entered upon final issuance

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
0.57 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.2, emission factors developed by the company and the following equation:

$$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P025 - Freeze Dryer: Freeze dryer attached to vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.63 lbs/hr and 2.76 tpy OC emissions: 2.76 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	exempt, see A.1.2.a

2. Additional Terms and Conditions

- 2.a This emissions unit shall not employ organic liquids which are photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5).

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
 - b. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.
 - c. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

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Emissions Unit ID: **P025**

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drop across Tower No. 2, the scrubber's water flow rate in Tower No. 2 and the scrubber's liquor temperature in Tower No. 2 while the emissions unit 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 scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.
 - b. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - c. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - d. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall collect and record the following information each month:
 - a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 3. The permit to install for this emissions unit P025 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

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Emissions Unit ID: **P025**

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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):

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Emissions Unit ID: P025

Pollutant: Methanol

TLV (mg/m3): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 308

MAGLC (ug/m3): 6240

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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

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Emissions Unit ID: **P025**

evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

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- 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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify each day during which any photochemically reactive materials were employed. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 2.
 - b. The scrubber water flow rate in Tower No 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Emissions Unit ID: **P025**

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.63 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
2.76 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.2, emission factors developed by the company and the following equation:

$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

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>
P027 - ADA Reactor: 750 gallon vessel with water jacket and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	0.077 lbs/hr and 0.34 tpy hydrochloric acid emissions: 0.34 tpy hydrochloric acid emissions will be based upon a rolling, 12-month summation of the monthly emissions. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.

- b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
- c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.
- d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.
- e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.
- f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.
- g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

- 1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow rate of the makeup water.
- b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow

rate of the makeup water.

- c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.
 - d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of HCL acid emissions for the previous month.
 - d. The calculated rolling, 12-month HCL acid emissions for the previous 12 months.
4. The permit to install for this emissions unit P027 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

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Emissions Unit ID: **P027**

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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: HCL acid

TLV (mg/m³): 7.46

Maximum Hourly Emission Rate (lbs/hr): 0.382 (Combined total hourly emissions from P027 P028, P029, P030, P031 and P032)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 49.82

MAGLC (ug/m³): 178

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

Emissions Unit ID: **P027**

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for hydrochloric acid. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.
 - c. The scrubber water flow rate in Tower No. 1.
 - d. The scrubber water flow rate in Tower No. 2.
 - e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:

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- a. The scrubber liquor temperature in Tower No. 1.
- b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.077 lbs/hr hydrochloric acid emissions

Applicable Compliance Method -

If required, compliance with the hydrochloric acid emission limitation shall be determined through emission testing conducted in accordance with Method 26 or 26A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
0.34 tpy hydrochloric acid emissions, based upon a rolling, 12-month summation of the monthly emissions

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Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

lbs hydrochloric acid emissions/batch(emission factor(s)) x number of batches/month = lbs hydrochloric acid emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs hydrochloric acid emissions/month). Sum the total monthly emissions (total lbs hydrochloric acid emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P028 - Reactor 14: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.24 lbs/hr and 1.051 tpy OC emissions: 1.051 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	0.059 lbs/hr and 0.26 tpy hydrochloric acid emissions: 0.26 tpy hydrochloric acid emissions will be based upon a rolling, 12-month summation of the monthly emissions. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a None

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not

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less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.

b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.

c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.

d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.

e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.

f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.

g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow rate of the makeup water.

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- b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.

- c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.

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- d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 - e. The calculated amount of HCL acid emissions for the previous month.
 - f. The calculated rolling, 12-month HCL acid emissions for the previous 12 months.
4. The permit to install for this emissions unit P028 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit using

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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: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Pollutant: HCL acid

TLV (mg/m³): 7.46

Maximum Hourly Emission Rate (lbs/hr): 0.382 (Combined total hourly emissions from P027, P028, P029, P030, P031 and P032)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 49.82

MAGLC (ug/m³): 178

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the materials used, or the use of new materials, that would

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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

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- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for hydrochloric acid. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.

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- c. The scrubber water flow rate in Tower No. 1.
- d. The scrubber water flow rate in Tower No. 2.
- e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

- 4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 1.
 - b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- 1. Emission Limitation:
0.24 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

- 2. Emission Limitation:
1.051 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

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lbs OC emissions/batch(emission factor(s)) x number of batches/month = lbs OC emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

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3. Emission Limitation:
0.059 lbs/hr hydrochloric acid emissions

Applicable Compliance Method -

If required, compliance with the hydrochloric acid emission limitation shall be determined through emission testing conducted in accordance with Method 26 or 26A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

4. Emission Limitation:
0.26 tpy hydrochloric acid emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

lbs hydrochloric acid emissions/batch(emission factor(s)) x number of batches/month = lbs hydrochloric acid emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs hydrochloric acid emissions/month). Sum the total monthly emissions (total lbs hydrochloric acid emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

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

- 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>
P029 - Reactor 15: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.24 lbs/hr and 1.051 tpy OC emissions: 1.051 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	0.059 lbs/hr and 0.26 tpy hydrochloric acid emissions: 0.26 tpy hydrochloric acid emissions will be based upon a rolling, 12-month summation of the monthly emissions.
		The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

- The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
- The permittee shall operate scrubber No. 3 with the following restrictions:

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- a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.
- b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
- c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.
- d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.
- e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.
- f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.
- g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow

rate of the makeup water.

b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.

c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.

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- d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 - e. The calculated amount of HCL acid emissions for the previous month.
 - f. The calculated rolling, 12-month HCL acid emissions for the previous 12 months.
4. The permit to install for this emissions unit P029 was evaluated based on the actual materials and the design parameters of the emissions unit'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"

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policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit 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: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Pollutant: HCL acid

TLV (mg/m³): 7.46

Maximum Hourly Emission Rate (lbs/hr): 0.382 (Combined total hourly emissions from P027, P028, P029, P030, P031 and P032)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 49.82

MAGLC (ug/m³): 178

Physical changes to or changes in the method of operation of the emissions unit 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 still 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:

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- a. changes in the composition of the 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

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- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for hydrochloric acid. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.

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- c. The scrubber water flow rate in Tower No. 1.
- d. The scrubber water flow rate in Tower No. 2.
- e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

- 4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 1.
 - b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- 1. Emission Limitation:
0.24 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

- 2. Emission Limitation:
1.051 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the

company and the following equation:

$$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

3. Emission Limitation:
0.059 lbs/hr hydrochloric acid emissions

Applicable Compliance Method -

If required, compliance with the hydrochloric acid emission limitation shall be determined through emission testing conducted in accordance with Method 26 or 26A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

4. Emission Limitation:
0.26 tpy hydrochloric acid emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

$$\text{lbs hydrochloric acid emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs hydrochloric acid emissions/month}$$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs hydrochloric acid emissions/month). Sum the total monthly emissions (total lbs hydrochloric acid emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

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

- 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>
P030 - Reactor 16: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.24 lbs/hr and 1.051 tpy OC emissions: 1.051 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	0.059 lbs/hr and 0.26 tpy hydrochloric acid emissions: 0.26 tpy hydrochloric acid emissions will be based upon a rolling, 12-month summation of the monthly emissions.
		The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

- The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
- The permittee shall operate scrubber No. 3 with the following restrictions:

- a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.
- b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
- c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.
- d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.
- e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.
- f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.
- g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow rate of the makeup water.

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- b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.

- c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.

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- d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 - e. The calculated amount of HCL acid emissions for the previous month.
 - f. The calculated rolling, 12-month HCL acid emissions for the previous 12 months.
4. The permit to install for this emissions unit P030 was evaluated based on the actual materials and the design parameters of the emissions unit'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"

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policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit 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: Methanol

TLV (mg/m3): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 308

MAGLC (ug/m3): 6240

Pollutant: HCL acid

TLV (mg/m3): 7.46

Maximum Hourly Emission Rate (lbs/hr): 0.382 (Combined total hourly emissions from P027, P028, P029, P030, P031 and P032)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 49.82

MAGLC (ug/m3): 178

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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

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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

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- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for hydrochloric acid. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.

- c. The scrubber water flow rate in Tower No. 1.
- d. The scrubber water flow rate in Tower No. 2.
- e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

- 4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 1.
 - b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- 1. Emission Limitation:
0.24 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

- 2. Emission Limitation:
1.051 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

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lbs OC emissions/batch(emission factor(s)) x number of batches/month = lbs OC emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

3. Emission Limitation:
0.059 lbs/hr hydrochloric acid emissions

Applicable Compliance Method -

If required, compliance with the hydrochloric acid emission limitation shall be determined through emission testing conducted in accordance with Method 26 or 26A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

4. Emission Limitation:
0.26 tpy hydrochloric acid emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

lbs hydrochloric acid emissions/batch(emission factor(s)) x number of batches/month = lbs hydrochloric acid emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs hydrochloric acid emissions/month). Sum the total monthly emissions (total lbs hydrochloric acid emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P031 - Reactor 17: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.24 lbs/hr and 1.051 tpy OC emissions: 1.051 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	0.059 lbs/hr and 0.26 tpy hydrochloric acid emissions: 0.26 tpy hydrochloric acid emissions will be based upon a rolling, 12-month summation of the monthly emissions. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a None

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not

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less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.

b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.

c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.

d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.

e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.

f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.

g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow rate of the makeup water.

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- b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.

- c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.

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- d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 - e. The calculated amount of HCL acid emissions for the previous month.
 - f. The calculated rolling, 12-month HCL acid emissions for the previous 12 months.
4. The permit to install for this emissions unit P031 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

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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: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Pollutant: HCL acid

TLV (mg/m³): 7.46

Maximum Hourly Emission Rate (lbs/hr): 0.382 (Combined total hourly emissions from P027, P028, P029, P030, P031 and P032)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 49.82

MAGLC (ug/m³): 178

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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

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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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for hydrochloric acid. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.
 - c. The scrubber water flow rate in Tower No. 1.

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d. The scrubber water flow rate in Tower No. 2.

e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:

a. The scrubber liquor temperature in Tower No. 1.

b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.24 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
1.051 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

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lbs OC emissions/batch(emission factor(s)) x number of batches/month = lbs OC emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

3. Emission Limitation:
0.059 lbs/hr hydrochloric acid emissions

Applicable Compliance Method -

If required, compliance with the hydrochloric acid emission limitation shall be determined through emission testing conducted in accordance with Method 26 or 26A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

4. Emission Limitation:
0.26 tpy hydrochloric acid emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

lbs hydrochloric acid emissions/batch(emission factor(s)) x number of batches/month = lbs hydrochloric acid emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs hydrochloric acid emissions/month). Sum the total monthly emissions (total lbs hydrochloric acid emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P032 - Reactor 18: 500 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.23 lbs/hr and 1.01 tpy OC emissions: 1.01 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	0.069 lbs/hr and 0.30 tpy hydrochloric acid emissions: 0.30 tpy hydrochloric acid emissions will be based upon a rolling, 12-month summation of the monthly emissions. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not

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less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.

b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.

c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.

d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.

e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.

f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.

g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow rate of the makeup water.

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- b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.

- c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.

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- d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
 - e. The calculated amount of HCL acid emissions for the previous month.
 - f. The calculated rolling, 12-month HCL acid emissions for the previous 12 months.
4. The permit to install for this emissions unit P032 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit using

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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):

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Pollutant: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Pollutant: HCL acid

TLV (mg/m³): 7.46

Maximum Hourly Emission Rate (lbs/hr): 0.382 (Combined total hourly emissions from P027, P028, P029, P030, P031 and P032)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 49.82

MAGLC (ug/m³): 178

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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

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an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

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- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for hydrochloric acid. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.

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- c. The scrubber water flow rate in Tower No. 1.
- d. The scrubber water flow rate in Tower No. 2.
- e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

- 4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 1.
 - b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- 1. Emission Limitation:
0.23 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

- 2. Emission Limitation:
1.01 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

lbs OC emissions/batch(emission factor(s)) x number of batches/month = lbs OC emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

3. Emission Limitation:
0.069 lbs/hr hydrochloric acid emissions

Applicable Compliance Method -

If required, compliance with the hydrochloric acid emission limitation shall be determined through emission testing conducted in accordance with Method 26 or 26A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

4. Emission Limitation:
0.30 tpy hydrochloric acid emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

lbs hydrochloric acid emissions/batch(emission factor(s)) x number of batches/month = lbs hydrochloric acid emissions/month

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs hydrochloric acid emissions/month). Sum the total monthly emissions (total lbs hydrochloric acid emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

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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 - Reactor 19: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.24 lbs/hr and 1.051 tpy OC emissions: 1.051 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 1 shall be continuously maintained at a value of not less than 120 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.5 gallons per minute.

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b. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.

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- c. The pressure drop across Tower No. 1 shall be continuously maintained at a value of not less than 0.5 inch of water at all times while the emissions unit is in operation.
- d. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.
- e. The pH of the scrubber liquor in Tower No. 1 of the scrubber shall be maintained at or above 6.0.
- f. The temperature of the scrubber liquor for Tower No. 1 shall be continuously maintained at a value not more than 95 degrees Fahrenheit.
- g. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

- 1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drops across each of its two towers, the scrubber's water flow rates in each of its two towers and the scrubber's liquor temperatures in each of the its two towers while the emissions unit 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 scrubber water flow rate from Tower No. 1, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording the flow rate of the makeup water.
- b. The scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.
- c. The pressure drop across Tower No. 1 on the scrubber, in inches of water, on once/shift basis.
- d. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift

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basis.

- e. The temperature of the scrubber liquor in Tower No. 1, in Fahrenheit, on once/shift basis.
 - f. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - g. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH scrubber liquor from scrubber No. 3 (Tower No. 1) while the emissions unit is in operation. The pH monitor and recorder 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 pH of the scrubber liquor, on once/shift basis.
 - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
3. The permittee shall collect and record the following information each month:
- a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.
4. The permit to install for this emissions unit P033 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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):

Research Organics
PTI A
Issued:

Facility ID: 1318172081

Emissions Unit ID: **P033**

Pollutant: Methanol

TLV (mg/m3): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

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PTI A₁

Emissions Unit ID: P033

Issued: To be entered upon final issuance

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Physical changes to or changes in the method of operation of the emissions unit 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 still 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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

Resear

PTI A₁

Emissions Unit ID: **P033**

Issued: To be entered upon final issuance

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.

Resear

PTI A₁

Issued: To be entered upon final issuance

Emissions Unit ID: P033

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 1.
 - b. The static pressure drop across Tower No. 2.
 - c. The scrubber water flow rate in Tower No. 1.
 - d. The scrubber water flow rate in Tower No. 2.
 - e. The scrubber liquor pH in Tower No. 1.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 1.
 - b. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.24 lbs/hr OC emissions

Research Organics
PTI A1
Issued:

Facility ID: 1318172081

Emissions Unit ID: P033

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PTI A₁

Emissions Unit ID: **P033**

Issued: To be entered upon final issuance

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:

1.051 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.3, emission factors developed by the company and the following equation:

$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

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>
P036 - Tumbler Dryer 7: Rotating double cone tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.057 lbs/hr and 0.25 tpy OC emissions: 0.25 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	exempt, see A.1.2.a

2. Additional Terms and Conditions

- 2.a This emissions unit shall not employ organic liquids which are photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5).

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
 - b. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.

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PTI A₁

Emissions Unit ID: **P036**

Issued: To be entered upon final issuance

- c. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

Issued: To be entered upon final issuance

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drop across Tower No. 2, the scrubber's water flow rate in Tower No. 2 and the scrubber's liquor temperature in Tower No. 2 while the emissions unit 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 scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.
 - b. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - c. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - d. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall collect and record the following information each month:
 - a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.

3. The permit to install for this emissions unit P036 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

Emissions Unit ID: P036

(MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol

TLV (mg/m3): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 308

MAGLC (ug/m3): 6240

Physical changes to or changes in the method of operation of the emissions unit 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

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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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify each day during which any photochemically reactive materials were employed. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 2.
 - b. The scrubber water flow rate in Tower No 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control)

within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.057 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
0.25 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.2, emission factors developed by the company and the following equation:

$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

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>
P037 - Tumbler Dryer 8: Rotating double cone tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.	OAC rule 3745-31-05(A)(3)	0.057 lbs/hr and 0.25 tpy OC emissions: 0.25 tpy OC emissions will be based upon a rolling, 12-month summation of the monthly emissions.
	OAC rule 3745-21-07(G)(2)	exempt, see A.1.2.a

2. Additional Terms and Conditions

- 2.a This emissions unit shall not employ organic liquids which are photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5).

B. Operational Restrictions

1. The scrubber No. 3 shall be operating at all times while the emissions unit is in operation.
2. The permittee shall operate scrubber No. 3 with the following restrictions:
 - a. The scrubber flow rate in Tower No. 2 shall be continuously maintained at a value of not less than 77 gallons per minute at all times while the emissions unit is in operation. This will be obtained by having the recirculation valve completely opened and supplying fresh makeup water at value not less than 1.0 gallon per minute.
 - b. The pressure drop across Tower No. 2 shall be continuously maintained at a value of not less than 1.0 inch of water at all times while the emissions unit is in operation.

Research Organics
PTI A1
Issued:

Facility ID: 1318172081

Emissions Unit ID: **P037**

- c. The temperature of the scrubber liquor for Tower No. 2 shall be continuously maintained at a value not more than 90 degrees Fahrenheit.

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PTI A₁

Emissions Unit ID: **P037**

Issued: To be entered upon final issuance

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the scrubber's static pressure drop across Tower No. 2, the scrubber's water flow rate in Tower No. 2 and the scrubber's liquor temperature in Tower No. 2 while the emissions unit 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 scrubber water flow rate from Tower No. 2, in gallons per minute, on once/shift basis. This shall be accomplished by visually inspecting the recirculation valve (visual inspections shall be done on once/day, 5 days/week basis, exceptions are made for holidays) and recording flow rate of the makeup water.
 - b. The pressure drop across Tower No. 2 on the scrubber, in inches of water, on once/shift basis.
 - c. The temperature of the scrubber liquor in Tower No. 2, in Fahrenheit, on once/shift basis.
 - d. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall collect and record the following information each month:
 - a. The name and identification of each product.
 - b. Number of batches.
 - c. The calculated amount of OC emissions for the previous month.
 - d. The calculated rolling, 12-month OC emissions for the previous 12 months.

3. The permit to install for this emissions unit P037 was evaluated based on the actual materials and the design parameters of the emissions unit'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 this emissions unit 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

Issued: To be entered upon final issuance

(MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol

TLV (mg/m³): 262

Maximum Hourly Emission Rate (lbs/hr): 2.36 (Combined total hourly emissions from P023, P024, P025, P028, P029, P030, P031, P032, P033, P036 and P037)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 308

MAGLC (ug/m³): 6240

Physical changes to or changes in the method of operation of the emissions unit 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 the 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 its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

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.

Emissions Unit ID: P037

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.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify each day during which any photochemically reactive materials were employed. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling 12-month emission limitation for OC. This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across Tower No. 2.
 - b. The scrubber water flow rate in Tower No 2.

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

4. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or below the required levels:
 - a. The scrubber liquor temperature in Tower No. 2.

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PTI A₁

Emissions Unit ID: **P037**

Issued: To be entered upon final issuance

This written report shall be submitted to the Director (Cleveland Bureau of Air Pollution Control) within 30 days of the occurrence of the deviation.

E. Testing Requirements

Compliance with the emission limitation(s) in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

1. Emission Limitation:
0.057 lbs/hr OC emissions

Applicable Compliance Method -

If required, compliance with the OC emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

2. Emission Limitation:
0.25 tpy OC emissions, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method -

Compliance shall be based on recordkeeping in section C.2, emission factors developed by the company and the following equation:

$$\text{lbs OC emissions/batch}(\text{emission factor(s)}) \times \text{number of batches/month} = \text{lbs OC emissions/month}$$

Apply the above equation to each product and then sum the emissions to obtain a total of monthly emissions (total lbs OC emissions/month). Sum the total monthly emissions (total lbs OC emissions/month) to obtain a rolling, 12-month summation. After the first twelve (12) months, each new month constitute a new 12-month summation. Divide the rolling 12-month summation by 2000 lbs.

F. Miscellaneous Requirements

None

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833 Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023, P024, P025, P027, P028, P029, P030, P031, P032, P033, P036, P037; Dryers 5, 6, 7, 8 and FZ-1, Reactors 14, 15, 16, 17, 18, 19 and ADA. CITY/TWP Cuyahoga Heights

SIC CODE 2869 SCC CODE 3-01-999-99 EMISSIONS UNIT ID P023

EMISSIONS UNIT DESCRIPTION Tumbler Dryer 5: V-Tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED 9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.057 lb/hr	0.19	0.057 lb/hr	0.25
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to containinants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? X YES NO

IDENTIFY THE AIR CONTAMINANTS: Methanol

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833

Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: **P037**

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P024

EMISSIONS UNIT DESCRIPTION Tumbler Dryer 6: Rotating double cone tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED

9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.13 lb/hr	0.43	0.13 lb/hr	0.57
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS?

NESHAP?

PSD?

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY?

Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT?

\$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*?

X

YES

NO

IDENTIFY THE AIR CONTAMINANTS:

Methanol

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833

Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: **P037**

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P025

EMISSIONS UNIT DESCRIPTION Freeze Dryer: Freeze dryer attached to vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED

9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.63 lb/hr	2.07	0.63	2.76
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS?

NESHAP?

PSD?

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT?

\$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*?

X

YES

 NO

IDENTIFY THE AIR CONTAMINANTS:

Methanol

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833 Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: P037

SIC CODE 2869 SCC CODE 3-01-999-99 EMISSIONS UNIT ID P027

EMISSIONS UNIT DESCRIPTION ADA Reactor: 750 gallon vessel with water jacket and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED 9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics HCL acid		0.077 lb/hr	0.25	0.077 lb/hr	0.34

APPLICABLE FEDERAL RULES:

NSPS?

NESHAP?

PSD?

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to containinants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? X YES NO

IDENTIFY THE AIR CONTAMINANTS: HCL acid

NEW SC

PTI Num

FACILITY

Emissions Unit ID: **P037**

FACILITY DESCRIPTION Process sources P023, P024, P025, P027, P028, P029, P030, P031, P032, P033, P036, P037; Dryers 5, 6, 7, 8 and FZ-1, Reactors 14, 15, 16, 17, 18, 19 and ADA.

CITY/TWP Cuyahoga Heights

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P028

EMISSIONS UNIT DESCRIPTION Reactor 14: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED 9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.24 lb/hr	0.79	0.24 lb/hr	1.051
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics HCL acid		0.059 lb/hr	0.19	0.059 lb/hr	0.26

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to containinants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? X YES NO

IDENTIFY THE AIR CONTAMINANTS: Methanol, HCL acid

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833

Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: **P037**

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P030

EMISSIONS UNIT DESCRIPTION Reactor 16: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED

9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.24 lb/hr	0.79	0.24 lb/hr	1.051
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics HCL acid		0.059 lb/hr	0.19	0.059 lb/hr	0.26

APPLICABLE FEDERAL RULES:

NSPS?

NESHAP?

PSD?

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*?

X

YES

NO

IDENTIFY THE AIR CONTAMINANTS:

Methanol, HCL acid

NEW SC

PTI Num

FACILITY

Emissions Unit ID: **P037**

FACILITY DESCRIPTION Process sources P023, P024, P025, P027, P028, P029, P030, P031, P032, P033, P036, P037; Dryers 5, 6, 7, 8 and FZ-1, Reactors 14, 15, 16, 17, 18, 19 and ADA.

CITY/TWP Cuyahoga Heights

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P031

EMISSIONS UNIT DESCRIPTION Reactor 17: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 VOC/Acid dual scrubber.

DATE INSTALLED 9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.24 lb/hr	0.79	0.24 lb/hr	1.051
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics HCL acid		0.059 lb/hr	0.19	0.059 lb/hr	0.26

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to containinants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? X YES NO

IDENTIFY THE AIR CONTAMINANTS: Methanol, HCL acid

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833

Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: **P037**

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P032

EMISSIONS UNIT DESCRIPTION Reactor 18: 500 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED

9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.23 lb/hr	0.76	0.23 lb/hr	1.01
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics HCL acid		0.069 lb/hr	0.23	0.069 lb/hr	0.30

APPLICABLE FEDERAL RULES:

NSPS?

NESHAP?

PSD?

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT?

\$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*?

X

YES

NO

IDENTIFY THE AIR CONTAMINANTS:

Methanol, HCL acid

NEW SOURCE REVIEW FORM B

PTI Number: 13-03833

Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: **P037**

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P033

EMISSIONS UNIT DESCRIPTION Reactor 19: 300 gallon vessel and ancillary equipment including chiller and filter press, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED

9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.24 lb/hr	0.79	0.24 lb/hr	1.051
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS?

NESHAP?

PSD?

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*?

X

YES

 NO

IDENTIFY THE AIR CONTAMINANTS:

Methanol

NEW SC

PTI Num

FACILITY

Emissions Unit ID: **P037**

FACILITY DESCRIPTION Process sources P023, P024, P025, P027, P028, P029, P030, P031, P032, P033, P036, P037; Dryers 5, 6, 7, 8 and FZ-1, Reactors 14, 15, 16, 17, 18, 19 and ADA.

CITY/TWP Cuyahoga Heights

SIC CODE 2869

SCC CODE 3-01-999-99

EMISSIONS UNIT ID P036

EMISSIONS UNIT DESCRIPTION Tumbler Dryer 7: Rotating double cone tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED 9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.057 lb/hr	0.19	0.057 lb/hr	0.25
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to containinants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? X YES NO

IDENTIFY THE AIR CONTAMINANTS: Methanol

118 NEW SOURCE REVIEW FORM B

PTI Number: 13-03833 Facility ID: 1318172081

FACILITY NAME Research Organics

FACILITY DESCRIPTION Process sources P023. P024. P025. P027. CITY/TWP Cuvahoga Heights

Emissions Unit ID: **P037**

SIC CODE 2869 SCC CODE 3-01-999-99 EMISSIONS UNIT ID P037

EMISSIONS UNIT DESCRIPTION Tumbler Dryer 8: Rotating double cone tumbler with condensate recovery tanks and vacuum pump, controlled by scrubber No. 3 - VOC/Acid dual scrubber.

DATE INSTALLED 9/1/01

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM ₁₀					
Sulfur Dioxide					
Organic Compounds		0.057 lb/hr	0.19	0.057 lb/hr	0.25
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

The BAT determination is compliance with the rules and regulations and the terms & conditions for this source. The basis for the determination is knowledge of the source.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? Y
 OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to containinants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? X YES NO

IDENTIFY THE AIR CONTAMINANTS: Methanol