

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

5/7/2014

Certified Mail

Mr. John Gabrek
CAPITAL RESIN CORP
324 DERING AVENUE
COLUMBUS, OH 43207

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
Yes	SYNTHETIC MINOR TO AVOID TITLE V
Yes	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0125040238
Permit Number: P0113412
Permit Type: Renewal
County: Franklin

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

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

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Central District Office at (614)728-3778 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-CDO



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
CAPITAL RESIN CORP**

Facility ID:	0125040238
Permit Number:	P0113412
Permit Type:	Renewal
Issued:	5/7/2014
Effective:	5/7/2014
Expiration:	5/7/2019



Division of Air Pollution Control
Permit-to-Install and Operate
for
CAPITAL RESIN CORP

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10. Emissions Unit Group -Acid Reactors: P006,P013, 104

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Authorization

Facility ID: 0125040238
Application Number(s): A0044129, A0046193, A0047485
Permit Number: P0113412
Permit Description: FEPTIO renewal permit for five (5) resin reactors, three (3) acid reactors, one (1) loading rack, one (1) pilot tray dryer, paraformadelhyde handling system and formaldehyde plant
Permit Type: Renewal
Permit Fee: \$0.00
Issue Date: 5/7/2014
Effective Date: 5/7/2014
Expiration Date: 5/7/2019
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

CAPITAL RESIN CORP
324 DERING AVENUE
COLUMBUS, OH 43207

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

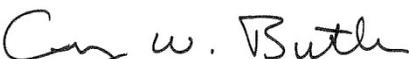
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Central District Office
50 West Town Street, 6th Floor
P.O. Box 1049
Columbus, OH 43216-1049
(614)728-3778

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section 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 described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Authorization (continued)

Permit Number: P0113412

Permit Description: FEPTIO renewal permit for five (5) resin reactors, three (3) acid reactors, one (1) loading rack, one (1) pilot tray dryer, paraformaldehyde handling system and formaldehyde plant

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	J005
Company Equipment ID:	LR-5
Superseded Permit Number:	P0082683
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P008
Company Equipment ID:	R-4
Superseded Permit Number:	01-12193
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P010
Company Equipment ID:	Formaldehyde Plant
Superseded Permit Number:	01-2069
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P012
Company Equipment ID:	R-5
Superseded Permit Number:	P0082685
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P014
Company Equipment ID:	R-3
Superseded Permit Number:	P0082687
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P018
Company Equipment ID:	AR-3
Superseded Permit Number:	01-6746
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P026
Company Equipment ID:	SPH
Superseded Permit Number:	01-7882
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P028
Company Equipment ID:	Pilot Tray Dryer
Superseded Permit Number:	P0105380
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P029
Company Equipment ID:	R8000
Superseded Permit Number:	P0114668
General Permit Category and Type:	Not Applicable



Group Name: Acid Reactors

Emissions Unit ID:	P006
Company Equipment ID:	AR-1
Superseded Permit Number:	P0109009
General Permit Category andType:	Not Applicable
Emissions Unit ID:	P013
Company Equipment ID:	AR-2
Superseded Permit Number:	P0109009
General Permit Category andType:	Not Applicable

Group Name: Resin Reactors

Emissions Unit ID:	P004
Company Equipment ID:	R-1
Superseded Permit Number:	01-08750
General Permit Category andType:	Not Applicable
Emissions Unit ID:	P016
Company Equipment ID:	R-2
Superseded Permit Number:	01-08750
General Permit Category andType:	Not Applicable



Final Permit-to-Install and Operate
CAPITAL RESIN CORP
Permit Number: P0113412
Facility ID: 0125040238
Effective Date: 5/7/2014

A. Standard Terms and Conditions



1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the [DO/LAA] in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the



change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



Final Permit-to-Install and Operate
CAPITAL RESIN CORP
Permit Number: P0113412
Facility ID: 0125040238
Effective Date: 5/7/2014

B. Facility-Wide Terms and Conditions



1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) The emissions of HAPs, as identified in Section 112(b) of Title III of the Clean Air Act, from all emissions units at this facility (B001, B008, B009, B011, J001, J002, J003, J004, J005, J006, P004, P005, P006, P007, P008, P010, P012, P013, P014, P016, P018, P020, P021, P023, P026, P027, P028, P029, P099, T001, T002, T003, T004, T004, T006, T007, T008, T009, T010, T011, T012, T013, T014, T015, T016, T017, T018, T019, T020, T021, T022, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T041, T042, T043, T044, T045, T046, T047, T048, T049, T050, T051, T052, T053, T057 and Z001) as well as any de minimis emissions units, permanent exempt pursuant to OAC rule 3745-31-03 located at the facility, combined, shall not exceed 9.9 TPY for any individual HAP and 24.9 TPY for any combination of HAPs, based upon rolling, 12-month summations of the HAP emissions.
 - (2) Recordkeeping Requirements
 - a. The permittee shall maintain the following monthly records on-site to document compliance with the facility-wide restriction on the potential to emit for individual HAP, and total HAP. The records shall include a minimum of the following information:
 - i. the individual HAP emissions for each emissions unit at this facility, in pounds or tons;
 - ii. the total combined HAP emissions for each emissions unit at this facility, in pounds or tons;
 - iii. the individual HAP emissions for all emissions units at this facility, in pounds or tons;
 - iv. the total combined HAP emissions for all emissions units at this facility, in pounds or tons;
 - v. the rolling 12-month summation of individual HAP emissions for all emissions units at the facility, in tons(i.e., the value from the current month added to the summation of the individual HAP emissions from the previous 11 months); and



- vi. the rolling, 12-month summation of the total combined HAP emissions for all emissions units at the facility, in tons (i.e., the value from the current month added to the summation of the total combined HAP emissions from the previous 11 months)

A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the adhesive/coatings and clean up materials.

(3) Reporting Requirements:

- a. The permittee shall submit quarterly deviation (excursion) reports that identify:
 - i. all exceedances of the rolling, 12-month individual HAP emission limitation; and
 - ii. all exceedances of the rolling, 12-month combined HAP emission limitation.

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

(4) Testing Requirements

Compliance with the Emission Limitations and/or Control Requirements specified in section b)(1), above shall be determined in accordance with the following methods:

a. Emission Limitation:

9.9 tons per year of a single HAP and 24.9 tons total HAPs, as a rolling, 12-month summation for all emission units, combined.

Applicable Compliance Method:

Compliance shall be demonstrated by the recordkeeping specified in section 1.b)(2).



Final Permit-to-Install and Operate
CAPITAL RESIN CORP
Permit Number: P0113412
Facility ID: 0125040238
Effective Date: 5/7/2014

C. Emissions Unit Terms and Conditions



1. J005, LR-5

Operations, Property and/or Equipment Description:

Formaldehyde loading rack

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)a., c)(1)-c)(5), d)(1), d)(2), e)(2) and f)(1)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(D) (Federally enforceable limitation to avoid Title V and MACT)	See 1)b)(1) [Facility-Wide Terms and Conditions] 0.1 ton formaldehyde per rolling, 12-month period See b)(2)a., b)(2)b., c)(4), d)(1), d)(2), e)(2)

(2) Additional Terms and Conditions

a. All vapors displaced or emitted from this emissions unit during product transfer shall be vented to the vapor collection system that shall meet the operational, monitoring and record keeping requirements of this permit, when the emission unit is in operation.

b. The vapor collection system shall vent to the vapor balance to the inlet of the formaldehyde plant to achieve a minimum 98% destruction efficiency, by weight.



c) Operational Restrictions

- (1) The loading rack shall be equipped with a vapor collection system whereby during the transfer of product to any delivery vessel, all vapors displaced from the delivery vessel during loading are vented only to the vapor collection system.
- (2) A means shall be provided to prevent drainage of product from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.
- (3) The permittee shall not permit formaldehyde product to be spilled or handled in any other manner that would result in evaporation.
- (4) All formaldehyde product loading lines and vapor lines shall be equipped with fittings that are vapor tight.
- (5) The maximum annual throughput for this loading station shall not exceed 8,665,000 gallons per rolling, 12-month period.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain the following records on a monthly basis:
 - a. the company name and identification of each product loaded through the emission unit;
 - b. the number of gallons of formaldehyde product loaded through this emissions unit;
 - c. the number of gallons of formaldehyde product loaded through this emissions unit on a rolling, 12-month basis;
 - d. the monthly formaldehyde emissions from this emissions unit, in tons;
 - e. the rolling, 12-month summation of formaldehyde emissions from this unit;
 - f. the monthly individual HAP emissions from this emissions unit, in tons;
 - g. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - h. the monthly combined HAP emissions from the emissions unit, in tons; and
 - i. the rolling, 12-month combined HAP emissions from the emissions unit, in tons.
- (2) The permittee shall collect and record a log of the downtime for the educer pump on the distillate storage tank, the vapor balance to the fresh air intake of the formaldehyde plant and the formaldehyde plant during each day of loading rack operation.



e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
 - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. any exceedance of the 8,665,000 gallon per rolling, 12-month period throughput limitation; and
 - ii. each period of time when the emissions unit was operating and emissions were not vented to the vapor collection system.
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).



- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

0.1 ton formaldehyde per rolling, 12-month period

Applicable Compliance Method:

The annual emission limitation is based on a controlled annual PTE of loading station 5 and an emission factor of 0.03 pound formaldehyde per 1000 gallons loaded as derived using equations in AP-42 at the partial vapor pressure of 0.752 psi at 95 degrees Fahrenheit (average storage temperature). The emission factor is multiplied by the annual throughput of 8,665,000 gallons multiplied by 0.5 (50% of the constituent concentration of formaldehyde and divided by 2,000 pounds per ton to yield 0.1 ton per year.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 320 for formaldehyde or other method as approved.

g) Miscellaneous Requirements

- (1) None.



2. P008, R-4

Operations, Property and/or Equipment Description:

Resin reactor R-4 for melamine resin production w/condenser, cyclone, and chill tank(3,500 connected to emergency containment system)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. b)(1)e., d)(5)-d)(8), and e)(4)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)d., c)(1), c)(2), d)(1), d)(2), d)(4) and e)(2)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 01-12193, as issued 1/10/2008)	Emissions shall not exceed: 2.2 pounds volatile organic compounds (VOC) per hour 0.1 pound per hour and 0.26 ton per year particulate emissions (PE) The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-11(A). See b)(2)a. and b)(2)b.
b.	OAC rule 3745-15-06	See b)(2)b.
c.	OAC rule 3745-17-11(A)(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).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-31-05(D) (Federally enforceable limitation to avoid Title V and MACT requirements)	See 1)b)(1) [Facility-Wide Terms and Conditions] Emissions shall not exceed: 1.64 tons VOC per rolling, 12-month period 0.55 pound formaldehyde per batch and 0.8 ton per rolling, 12-month period 0.24 pound methanol per batch and 0.4 ton per rolling, 12-month period See c)(1), c)(2), d)(1), d)(2), d)(4), and e)(2)
e.	ORC 3704.03(F)(4)(d) (Toxic Air Contaminant Statute)	See d)(5)-d)(8) and e)(4)

(2) Additional Terms and Conditions

- a. The hourly VOC emissions limitation was established to reflect the potential to emit for this emissions unit, taking into consideration the use of a condenser whenever this emissions unit is in operation for the control of VOC emissions. The monitoring, recordkeeping, reporting, and testing requirements associated with the condenser are sufficient to demonstrate compliance with this limitation.
- b. The hourly and annual PE limitations were established to reflect the potential to emit for this emissions unit. It is not necessary to develop monitoring, recordkeeping, or reporting requirements to demonstrate compliance with these limitations.
- c. The permittee shall, prior to production, ensure that this reactor is connected to a fully functional emergency containment system.

 If a disk ruptures, releasing material into the emergency containment system, all resin production shall be stabilized and no new batches will be started or restarted until necessary repairs are made. The emergency containment system shall be drained and prepared for normal kettle operation prior to production restart.
- d. The permittee shall prepare and maintain a preventative maintenance and malfunction abatement plan (PMMAP), that is subject to review by the Director. The approved PMMAP shall be implemented as a condition for operation of this emission unit and operated according to an approved plan.



c) Operational Restrictions

- (1) All of the VOC emissions from this emissions unit shall be vented to the condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- (2) The maximum daily production rate for this emissions unit shall not exceed the following restrictions:
 - a. 8 batches of melamin-formaldehyde resin;
 - b. 4 batches of either urea-formaldehyde resin; or
 - c. 4 batches of acetone-formaldehyde resin.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain the following daily records for this emission unit:
 - a. the total number of melamin-formaldehyde, urea-formaldehyde or acetone-formaldehyde batches processed in this emission unit.
- (2) The permittee shall maintain the following monthly records for this emission unit:
 - a. the monthly VOC emissions from this emissions unit, in tons;
 - b. the rolling, 12-month summation of VOC emissions from this emissions unit;
 - c. the monthly formaldehyde emissions from this emissions unit, in tons;
 - d. the rolling, 12-month summation of formaldehyde emissions from this unit;
 - e. the monthly methanol emissions from this emissions unit, in tons;
 - f. the rolling, 12-month summation of methanol from this emissions unit;
 - g. the monthly individual HAP emissions from this emissions unit, in tons;
 - h. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - i. the monthly combined HAP emissions from this emissions unit, in tons;
 - j. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
- (3) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's



recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:

- a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
- b. a log or record of downtime for the capture (collection) system, condenser, or monitoring equipment, when the associated emissions unit is in operation.

These records shall be maintained at the facility for a period of three years.

- (4) Whenever the monitored, average temperature of the exhaust gases from the condenser exceeds the 77 degree Fahrenheit limit, for any 1-hour block of time, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was deviation;
- j. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.



Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (5) The PTIO application for this emissions unit, P008, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
 - b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
 - c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting



calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or “worst case” toxic contaminant(s):

Toxic Contaminant: Acetone
Maximum Hourly Emission Rate (lbs/hr): 2.12
TLV (mg/m3): 1,782
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 702
MAGLC (ug/m3): 42,428

The permittee, has demonstrated that emissions of acetone, from emissions unit(s) P008, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F).

- (6) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, 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 new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV 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 toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
 - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the “Toxic Air Contaminant Statute” 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 solely due to a non-restrictive change to a parameter or process operation, where compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a “modification”, the permittee shall apply for and obtain a final PTIO prior to the change. The Director may consider any significant departure from the operations of the



emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (7) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (8) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- e) Reporting Requirements
- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified.



Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
 - iii. any exceedance of the daily batch production restrictions from c)(2);
 - iv. any exceedance of the rolling, 12-month methanol emissions limitation;
 - v. any exceedance of the rolling, 12-month formaldehyde emissions limitations; and
 - vi. any exceedance of the rolling, 12-month VOC emissions limitation.
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.



- (4) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

2.2 pounds per hour VOC

Applicable Compliance Method:

The hourly allowable limitation was derived using USEPA emission master calculations and compliance will be ensured so long as the permittee maintains compliance with the operational restrictions, monitoring and record keeping requirements specified in this permit.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 25 or 320 for VOC or other method as approved.

b. Emission Limitation:

1.64 tons VOC per rolling, 12-month period

Applicable Compliance Method:

Compliance will be ensured so long as the permittee maintains compliance with the operational restrictions, monitoring and record keeping requirements specified in this permit. The annual VOC emissions may be derived using an emission factor of 2.2 pounds VOC per batch multiplied by the number of acetone-formaldehyde batcher produced and divided by 2,000 pounds per ton.

c. Emission Limitation:

0.55 pound formaldehyde emissions per batch

Applicable Compliance Method:

The emission limitation for formaldehyde was derived from formulation data using batch act equations from USEPA 450 R-94-020, February 1994 document for melamine-formaldehyde production. The validity of the emissions factor was



demonstrated by emission testing during melamine-formaldehyde resin production on March 12, 2003.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 320 for formaldehyde or other method as approved.

d. Emission Limitation:

0.8 tons formaldehyde emissions per rolling, 12-month period

Applicable Compliance Method:

Compliance will be ensured so long as the permittee maintains compliance with the operational restrictions, monitoring and record keeping requirements specified in this permit. The annual formaldehyde emissions may be demonstrated by multiplying an emission factor of 0.55 pound formaldehyde per batch multiplied by the number of melamine-formaldehyde batches produced and divided by 2,000 pounds per ton.

e. Emission Limitation:

0.24 pound per batch methanol emission

Applicable Compliance Method:

This emission limitation for methanol was derived from emission test data collected by USEPA Method 308 testing during melamine-formaldehyde resin production on March 12, 2003. If required, the permittee may demonstrate compliance with this emission factor through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 308.

f. Emission Limitation:

0.4 ton methanol emissions per rolling, 12-month period

Applicable Compliance Method:

Compliance will be ensured so long as the permittee maintains compliance with the operational restrictions, monitoring and record keeping requirements specified in this permit. The annual methanol emissions may be demonstrated by multiplying an emission factor of 0.24 pound methanol per batch multiplied by the number of melamine-formaldehyde batches produced and dividing by 2,000 pounds per ton.



g. Emission Limitation:

0.1 pound PE per hour

Applicable Compliance Method:

Compliance is based on emission calculations submitted with the permit application for melamine charge during resin production.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 5 for particulate or other method as approved.

h. Emission Limitation:

0.26 ton PE per year

Applicable Compliance Method:

Compliance shall be determined by batch restrictions and record keeping specified in this permit: 0.18 pound PE per batch * 8 batches per day * 365 days per year * 1 ton / 2,000 pounds = 0.26 ton

g) Miscellaneous Requirements

(1) None.



3. P010, Formaldehyde Plant

Operations, Property and/or Equipment Description:

Formaldehyde Plant

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - a. None.
 - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - a. b)(1)b., b)(2)a., c)(1), c)(2), d)(1), e)(2), f)(1)a. and f)(1)c.
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 01-2069, as issued 6/21/1989)	Emissions shall not exceed: 1.71 pounds per hour VOC from catalytic incinerator stack 4.05 pounds per hour and 17.07 tons per year carbon monoxide (CO) See b)(2)a.
b.	OAC rule 3745-31-05(D) (Federally enforceable limitation to avoid Title V and MACT requirements)	See 1)b)(1) [Facility-Wide Terms and Conditions] 7.5 tons per rolling, 12-month period VOC from catalytic incinerator stack See c)(1), c)(2), d)(1), e)(2), f)(1)a. and f)(1)c.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-21-09(DD) 40 CFR Part 60 Subpart VV	See b)(2)c., c)(3)-c)(11), d)(5)-d)(20), e)(4) and e)(5)
d.	OAC rule 3745-21-09(EE) 40 CFR Subpart III	See b)(2)d.

(2) Additional Terms and Conditions

- a. The hourly VOC emission limitation was established to reflect the potential to emit (PTE) for this emissions unit based upon the 98% control efficiency requirement across the catalytic incinerator at the maximum methanol feed rate of 13 gallons/minute and compliance with the requirements of OAC rule 3745-21-09(EE). Therefore, the parametric monitoring of the catalytic incinerator, as established in the following terms and conditions, will ensure compliance with these limits.
- b. The hourly and annual CO limits were established to reflect the potential to emit for this emissions unit. It is not necessary to develop monitoring, recordkeeping, or reporting requirements to demonstrate compliance with these limitations.
- c. The permittee of the process unit, producing one or more of the organic chemicals identified in Appendix A to OAC 3745-21-09 as an intermediate or final product, shall comply with the requirements identified in OAC 3745-21-09 paragraphs (DD)(2) to (DD)(6).
- d. The permittee shall developed and implement a leak detection and repair program for the process unit in accordance with the requirements specified in OAC 3745-21-09 paragraphs (DD)(2)(b) to (DD)(2)(m).

c) Operational Restrictions

- (1) All of the VOC emissions from this emissions unit shall be vented to a catalytic incinerator that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation. The catalytic incinerator shall be designed and operated either to reduce the VOC emissions vented to it with an efficiency of at least 98 percent by weight, or to emit VOC at a concentration less than 20 parts per million, by volume, dry basis.
- (2) The average temperature of exhaust gases immediately upstream of the catalyst bed, for any 3-hour block of time, when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent stack test that demonstrated the emission unit was in compliance. The average temperature difference across the catalyst bed, for any 3-hour block of time when this emissions unit is in operation, shall not be less than 80% of the average temperature difference during the most recent stack test that demonstrated the emission unit was in compliance.



- (3) When a leak is detected the following procedures shall be followed:
 - a. a weatherproof identification tag with the equipment identification number and the date shall be immediately attached to the leaking equipment;
 - b. a record of the leak, the date it was first detected, and any attempt to repair the leak and date is entered into the leak repair log;
 - c. an identification tag that was attached to a leaking valve "in gas/vapor service" or "in light liquid service" may be removed only after the valve is repaired and found to have no leaks for two consecutive months; and
 - d. an identification tag attached to leaking equipment that is exempted from the monitoring requirements of OAC 3745-21-09(DD)(2)(b) may be removed immediately following the repair of the leak.
- (4) Repair of a leak shall be attempted no later than 5 calendar days after it is detected, where practicable, and shall include, but not limited to, the following best maintenance practices:
 - a. tightening of bonnet bolts;
 - b. replacement of bonnet bolts;
 - c. tightening of packing gland nuts; and
 - d. injection of lubricant into lubricated packing.
- (5) Except where meeting one of the conditions defined in OAC 3745-21-09(DD)(11), where a delay in repair is allowed, a leak shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected. Leaking equipment shall be deemed repaired if the maximum VOC concentration is measured to be less than 10,000 ppmv.
- (6) Each compressor shall be equipped with a seal that has a barrier fluid system and sensor which comply with the requirements specified in OAC 3745-21-09(DD)(8), with the following exceptions:
 - a. any compressor designated for "no detectable emissions", and meeting the requirements of OAC 3745-21-09 (DD)(7).
 - b. any compressors equipped with a closed vent system capable of capturing and transporting any leakage from the compressor seal to control equipment, where the closed vent system and the control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
 - c. any reciprocating compressor that meets the following conditions:
 - i. the compressor was installed prior to May 9, 1986; and



- ii. the permittee demonstrates, to the satisfaction of the Director, that recasting the compressor distance piece or replacing the compressor are the only options available to bring it into compliance with the requirements to equip it with a seal with a barrier fluid system and sensor.
- (7) Except as otherwise provided below, any pressure relief device “in gas/vapor service” in the process unit shall comply with the following requirements:
- a. Except during pressure releases, the pressure relief device shall be operated with “no detectable emissions”, as indicated by an instrument reading of less than 500 ppmv above background, as measured by the method specified in OAC 3745-21-10(F)
 - b. No later than 5 calendar days after a pressure release, a pressure relief device shall be tested to confirm the condition of “no detectable emissions” in accordance with the method specified in OAC 3745-21-10(F).
 - c. Except for a delay of repair as provided in OAC 3745-21-09(DD)(11), a pressure relief device shall be returned to a condition of “no detectable emissions” as soon as practicable, but no later than 5 calendar days after a pressure release.

Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to control equipment meeting the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10) is excluded from these requirements.

- (8) With the exception of an “in-situ sampling system” (a non-extractive sampler or an in-line sampler), each sampling connection system in the process unit shall be equipped with a closed purge system or a closed vent system that meets one of the following requirements:
- a. the purged process fluid is returned directly to the process line with zero VOC emissions to the ambient air;
 - b. the purged process fluid is collected and recycled with zero VOC emissions to the ambient air; or
 - c. the closed purge system or closed vent system is designed and operated to capture and transport all the purged process fluid to control equipment that meet the control equipment requirements specified in OAC 3745-21-09(DD)(10).
- (9) Each open-ended valve or line in the process unit shall be equipped with a cap, blind flange, plug, or second valve which shall comply with the following requirements:
- a. Except during operations requiring the flow of process fluid through the open-ended valve or line, the cap, blind flange, plug, or second valve shall seal the open end of the open-ended valve or line.
 - b. If equipped with a second valve, the open-ended valve or line shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.



- c. A bleed valve or line from a double block and bleed system may remain open during operations that require venting the line between the block valves, but the line/valve shall be sealed (as in "a" above) at all other times.
- (10) A pump or compressor equipped with a seal that has a barrier fluid system and sensor, which are employed to meet the requirements of OAC 3745-21-09(DD)(2)(d)(ii) for a pump or 3745-21-09(DD)(3)(a) and (b) for a compressor, shall be operated and maintained to comply with the following requirements.
- a. The barrier fluid system shall meet one of the three following conditions:
 - i. The barrier fluid system is operated with a barrier fluid at a pressure that is greater, at all times, than the stuffing box pressure of the pump or compressor.
 - ii. The barrier fluid system is equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to control equipment and the closed vent system and control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
 - iii. The barrier fluid system is equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the ambient air.
 - b. The barrier fluid system shall be "in heavy liquid service" or shall not be "in VOC service".
 - c. The barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both, based on design criteria and operating experience of the permittee.
- (11) A delay of the repair of a detected leak or a delay in returning a pressure relief valve/device to a condition of "no detectable emissions" shall be allowed only if complying with the following requirements:
- a. A delay of repair shall be allowed if the repair is technically infeasible without shutdown of the process unit. However, the repair shall occur before the end of the next process unit shutdown.
 - b. A delay of repair shall be allowed for a piece of equipment that is isolated from the process and that does not remain "in VOC service" (for example, isolated from the process and properly purged).
 - c. A delay of repair for a valve shall be allowed if:
 - i. it can be demonstrated that the emissions from purged material resulting from immediate repair is greater than the emissions likely to result from delay of repair; and
 - ii. the purged material is collected and destroyed or recovered in control equipment that meets the requirements specified in OAC 3745-21-09(DD)(10).



- d. A delay of repair for a valve beyond a process unit shutdown shall be allowed if:
 - i. a valve assembly replacement is necessary during the process unit shutdown, and
 - ii. the valve assembly supplies have been depleted, and
 - iii. valve assembly supplies had been sufficiently stocked before the supplies were depleted.

A delay of repair beyond the next process unit shutdown shall not be allowed for the valve unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

- e. A delay of repair for a pump shall be allowed if:
 - i. the repair requires the use of a dual mechanical seal system and associated barrier fluid system; and
 - ii. the repair is completed as soon as practicable, but no later than 6 months after the leak was detected.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall maintain the following monthly records for this emission unit:
 - a. the monthly VOC emissions from this emissions unit, in tons, and total hours of operation;
 - b. the rolling, 12-month summation of VOC emissions from this emissions unit, in tons;
 - c. the monthly individual HAP emissions from this emissions unit, in tons;
 - d. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - e. the monthly combined HAP emissions from this emissions unit, in tons; and
 - f. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
- (2) The permittee shall properly install, operate, and maintain continuous temperature monitors and recorder(s) that measure and record(s), on a continuous basis, the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit(s) is/are in operation, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The permittee may use a temperature chart recorder or equivalent recording device as the log that documents the temperature differential across the catalyst bed. These records shall be maintained at the facility for a period of no less than 3 years.



- (3) The permittee shall perform preventative maintenance inspections of the catalytic incinerator in accordance with the manufacturer's recommendations. A thorough inspection of the unit is routinely performed every 12-18 months during the Formaldehyde Plant shutdown (for replacement of the catalyst in the Formaldehyde Reactor).
- (4) Whenever the monitored average temperature of the exhaust gases immediately before the catalyst bed and/or the average temperature difference across the catalyst bed deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range(s)/limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the temperature of the exhaust gases immediately before the catalyst and the average temperature difference across the catalyst bed immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted temperature range(s) based upon information obtained during future performance tests



that demonstrate compliance with the allowable emission rate(s) of the controlled pollutant(s). In addition, approved revisions to the temperature range(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (5) Except as otherwise provided in OAC 3745-21-09(DD)(2)(c) and (DD)(2)(d), equipment shall be monitored for leaks in accordance with the method specified OAC 3745-21-10(F) and as follows:
- a. Any pump “in light liquid service” shall be monitored monthly.
 - b. Any valve “in gas/vapor service” or “in light liquid service” shall be monitored monthly, except that quarterly monitoring may be employed where no leaks are detected during two consecutive months. Quarterly monitoring may begin with the next calendar quarter following the two consecutive months of no detected leaks. Monitoring shall be conducted in the first month of each calendar quarter; and quarterly monitoring may continue until a leak is detected, at which time monitoring shall again be employed monthly.
 - c. The following equipment shall be monitored within 5 calendar days after evidence of a leak or potential leak from the equipment by visual, audible, olfactory, or other detection method:
 - i. a pump “in heavy liquid service”;
 - ii. a valve “in heavy liquid service”;
 - iii. a pressure relief device “in light liquid service” or “in heavy liquid service”;
and
 - iv. a flange or other connector.
 - d. Any equipment in which a leak is detected, as defined in OAC 3745-21-09(DD)(2)(g), shall be monitored within 5 working days after each attempt to repair it, unless the equipment was not successfully repaired.
- (6) For any valve “in gas/vapor service” or “in light liquid service”, an alternative monitoring schedule may be employed, in lieu of the monitoring schedule specified in OAC 3745-21-09(DD)(2)(b)(ii), above, if meeting one of the three following requirements:
- a. The valve is designated as “difficult to monitor” and is monitored once each calendar year if meeting all of the following conditions:
 - i. construction of the process unit commenced prior to May 9, 1986;
 - ii. the permittee demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 6 feet above a support surface; and
 - iii. the permittee has a written plan that requires monitoring of the valve at least once per year.



- b. The valve is designated as “unsafe to monitor” and is monitored as frequently as practical during times when it is safe to monitor, provided the following conditions are met:
 - i. the permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of monitoring on a monthly basis; and
 - ii. the permittee adheres to a written plan that requires monitoring of the valve as frequently as practical during times when it is safe to monitor.
 - c. The valve qualifies for an alternative monitoring schedule based on a “skip period” as allowed per OAC 3745-21-09(DD)(12).
- (7) The permittee may elect to implement an alternative monitoring schedule, to that of OAC 3745-21-09(DD)(2)(b)(ii) and as identified below, for the process unit valves if the following conditions are met:
- a. no more than 2.0% of the process unit valves are leaking;
 - b. the permittee notifies the Director (the appropriate district office or local air agency) prior to implementing the alternative monitoring schedule; and such notification identifies:
 - i. which valves will be subject to the alternative monitoring schedule; and
 - ii. which work practice, identified in OAC 3745-21-09(DD)(12)(e), will be implemented;
 - c. the permittee monitors the valves initially monthly, to quarterly, as allowed and according to the requirements specified in OAC 3745-21-09(DD)(2)(b)(ii); and
 - d. the valves continue to meet with the conditions specified in OAC 3745-21-09(DD)(2)(g) to (DD)(2)(m).

If meeting all of the above conditions (“a” through “d”), one of the following monitoring periods for valve leak detection may be implemented:

- e. after two consecutive quarterly leak detection periods with 2.0% or less of the process unit valves leaking, a monitoring program may begin in which the first quarter of every two consecutive quarterly leak detection periods is skipped; or
- f. after 5 consecutive quarterly leak detection periods with 2.0% or less of the process unit valves leaking, a monitoring program may begin in which the first three quarters of every four consecutive quarterly periods is skipped.

The alternative monitoring schedule shall be based on skipping quarterly monitoring periods. Any valve “in vacuum service”, “in heavy liquid service”, or not “in VOC service” shall be excluded from the monitoring schedule. If the percentage of valves leaking from the process unit becomes greater than 2.0%, the permittee shall again comply with the



monitoring requirements specified in OAC 3745-21-09(DD)(2)(b)(ii), but may revert to this alternative monitoring schedule after meeting and documenting all of the above requirements.

- (8) The percentage of valves leaking, used to qualify for "skipped period" alternative monitoring schedule, shall be determined as the sum of the number of those valves found leaking during any portion of the current monitoring period and the number of those valves found leaking during a previous monitoring period for which repair has been delayed during the current monitoring period, divided by the total number of valves, and multiplied by 100.
- (9) The following information shall be recorded in a log, that is kept in a readily accessible location, if the "skipped period" alternative monitoring schedule for leak detection of process unit valves is established:
 - a. the identification numbers of the valves subject to the alternative monitoring schedule;
 - b. the schedule established for monitoring the subject valves;
 - c. the valves exempt from the alternative monitoring schedule and reason for the exemption, i.e., "in vacuum service", "in heavy liquid service", or not "in VOC service";
 - d. the percentage of valves leaking during each monitoring period; and
 - e. the maximum instrument reading and date each valve was monitored.
- (10) The permittee may elect to implement an alternative monitoring schedule to that of OAC 3745-21-09(DD)(2)(b)(ii) for the process unit valves, as provided in OAC 3745-21-09(DD)(2)(d)(v), if the following conditions are met:
 - a. it can be demonstrated that no more than 2.0% of the process unit valves are leaking;
 - b. the permittee notifies the Director (the appropriate district office or local air agency) prior to implementing the alternative monitoring standard;
 - c. the demonstration of compliance to document that the percentage of valves leaking does not exceed 2.0% is conducted initially upon implementation and annually thereafter and as follows:
 - i. all valves subject to the alternative monitoring standard shall be monitored for leaks within a one-week period by the method specified in OAC 3745-21-10(F);
 - ii. any leak detected and measured with an instrument reading of 10,000ppmv or greater shall be recorded as a leak; and



- iii. the percentage of valves leaking shall be determined as the number of valves for which a leak is detected, divided by the number of valves monitored, and multiplied by 100.

All valves "in gas/vapor service" or "in light liquid service" in the process unit shall be subject to this alternative monitoring standard, except for valves not "in VOC service", valves "in vacuum service", and valves which are designated as unsafe to monitor as provided in OAC 3745-21-09(DD)(2)(c)(ii).

- (11) When a leak is detected as described above, the leaking valve shall be repaired in accordance with OAC 3745-21-09(DD)(2)(h) and (DD)(2)(i). If the percentage of valves leaking from the process unit becomes greater than 2.0%, the permittee shall again comply with the monitoring requirements specified in OAC 3745-21-09(DD)(2)(b)(ii), but may revert to this alternative monitoring schedule after meeting and documenting all of the above requirements.
- (12) The following equipment is excluded from the monitoring requirements of OAC 3745-21-09(DD)(2)(b):
 - a. any pump that has no externally actuated shaft penetrating the pump housing and that is designated for no detectable emissions as provided in OAC 3745-21-09(DD)(7);
 - b. any pump that is equipped with a dual mechanical seal which has a barrier fluid system and sensor that comply with the requirements specified in OAC 3745-21-09 (DD)(8);
 - c. any pump that is equipped with a closed vent system capable of capturing and transporting any leakage from the pump seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10);
 - d. any valve that has no externally actuated stem penetrating the valve and that is designated for "no detectable emissions" as provided in OAC 3745-21-09(DD)(7); and
 - e. any valve that qualifies for the alternative monitoring standard based on the percentage of valves leaking, as provided in OAC 3745-21-09(DD)(13).
- (13) Any pump "in light liquid service" shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, unless the pump is equipped with a closed vent system capable of transporting any leakage from the pump seal to control equipment, and the closed vent system and control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
- (14) Any sensor employed pursuant to OAC 3745-21-09(DD)(2)(d)(ii), for a pump equipped with a dual mechanical seal using a barrier fluid system and sensor; or a sensor employed pursuant to OAC 3745-21-09(DD)(3)(b), for a compressor equipped with a seal using a barrier fluid system and sensor; and complying with the requirements



specified in OAC 3745-21-09(DD)(8), shall be checked daily, unless the sensor is equipped with an audible alarm.

- (15) A leak is detected when:
- a. a concentration of 10,000 ppmv or greater is measured from a potential leak interface of any equipment, that is monitored for leaks using the method specified in OAC 3745-21-10(F);
 - b. there is an indication of liquids dripping from the seal of a pump “in light liquid service”; or
 - c. a sensor employed pursuant to OAC 3745-21-09(DD)(2)(d)(ii) or (DD)(3)(b) indicates failure of the seal system, the barrier fluid system, or both.
- (16) When a leak is detected, the following information shall be recorded in the leak repair log:
- a. the identification number of the leaking equipment;
 - b. for each leak required to be monitored, the identification numbers of the leak detection instrument and its operator;
 - c. how the leak was detected, e.g., monitoring, visual inspection, odor detected, or sensor alarm/signal;
 - d. the date on which the leak was detected and the date of each attempt to repair the leaking equipment;
 - e. the methods of repair applied in each attempt to repair the leak;
 - f. one of the following entries within 5 working days after each attempt to repair the leaking equipment:
 - i. “not monitored,” denoting the leaking equipment was presumed to still be leaking and it was not monitored; or
 - ii. if the leaking equipment was monitored with a leak detection instrument, the maximum concentration that was measured as follows:
 - (a) the actual reading in ppmv; or
 - (b) a record stating that the measured concentration was “below 10,000 ppmv”; or
 - (c) a record stating that the measured concentration was “above 10,000 ppmv”;
 - g. if the leak is not repaired within 15 calendar days after the date on which it was detected:



- i. a record stating that repair was delayed and the reason for the delay;
 - ii. if repair is being delayed until the next process unit shutdown due to technical infeasibility of repair, the signature of the operator whose decision it was that repair is technically infeasible without a process unit shutdown;
 - iii. the expected date of successful repair of the leak; and
 - iv. the dates of process unit shutdowns that occur while the leaking equipment is unrepaired; and
 - h. the date on which the leak was successfully repaired.
- (17) The leak repair log shall be kept in a readily accessible location and maintained by the operator of the process unit. Each record shall be retained in the log for a minimum of two years following the date on which it was recorded.
- (18) The following information shall be recorded for the/each process unit in a log that is kept in a readily accessible location:
- a. a list of identification numbers for equipment subject to the requirements of OAC 3745-21-09(DD)(2) to (DD)(10);
 - b. a list of identification numbers for equipment designated for “no detectable emissions” as provided in OAC 3745-21-09(DD)(7), and the signature of the permittee/operator authorizing the designation of each piece of equipment;
 - c. a list of identification numbers for pressure relief devices subject to OAC 3745-21-09(DD)(4);
 - d. a list of identification numbers for closed vent systems subject to OAC 3745-21-09(DD)(9);
 - e. for compliance tests required under OAC 3745-21-09(DD)(4)(c), (DD)(7)(c), and (DD)(9)(c):
 - i. the date each compliance test is conducted;
 - ii. the background VOC emissions level measured during each compliance test; and
 - iii. the maximum instrument reading measured at the equipment during each compliance test;
 - f. the following information pertaining to valves subject to an alternative monitoring schedule, as provided in OAC 3745-21-09(DD)(2)(c):
 - i. a list of identification numbers for valves designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve;



- ii. a list of identification numbers for valves designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve; and
- iii. a list of identification numbers for valves subject to the alternative monitoring schedule based on a “skip period”, a schedule for monitoring these valves, and the percentage of valves leaking during each monitoring period;
- g. the following information pertaining to closed vent systems and control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10):
 - i. detailed schematics, design specifications, and piping and instrumentation diagrams for the closed vent systems and collection and control equipment;
 - ii. the dates and descriptions of any changes in the design specifications above;
 - iii. a description of the parameter(s) monitored, as required in OAC 3745-21-09(DD)(10)(d), to ensure that the control equipment is operated and maintained in conformance with its design, and the reason for selecting the parameter(s);
 - iv. periods when the closed vent systems and control equipment are not operated as designed, including periods when a flare pilot light does not have a flame; and
 - v. dates of startups and shutdowns of the closed vent systems and control equipment;
- h. the following information pertaining to barrier fluid systems and sensors described in OAC 3745-21-09(DD)(8):
 - i. a list of identification numbers of pumps and compressors equipped with such barrier fluid systems and sensors;
 - ii. the criteria that indicate failure of the seal system, the barrier fluid system, or both, as required in OAC 3745-21-09(DD)(8)(d) and an explanation of the criteria; and
 - iii. any changes to such criteria and the reasons for the changes;
- i. the following information for use in determining an exemption for the process unit as provided in OAC 3745-21-09(DD)(17)(a):
 - i. an analysis demonstrating the design capacity of the process unit;
 - ii. a statement listing the feed and raw materials and products from the process unit and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohols; or



- iii. an analysis demonstrating that equipment that is documented as “not in VOC service” meets this condition; and
- j. the following information pertaining to specific equipment that are exempt as provided in OAC 3745-21-09(DD)(17)(b):
 - i. a list of identification numbers of equipment “in vacuum service”;
 - ii. a list of identification numbers of equipment “not in VOC service” and the information or data used to demonstrate this; and
 - iii. a list of equipment subject to an equivalent emission requirement that is approved by the Director pursuant to OAC 3745-21-09(DD)(16).

One recordkeeping system may be used to comply with the recordkeeping requirements for multiple process units provided the system identifies each process unit to which each record pertains.

- (19) The following facility process units are exempted from the requirements of OAC 3745-21-09(DD)(2) to (DD)(6). Records shall be maintained to identify and document the process unit equipment meeting these requirements:
 - a. any process unit that has a design capacity to produce less than 1,100 tons per year;
 - b. any process unit that produces only heavy liquid chemicals from heavy liquid feed or raw materials;
 - c. any process unit that produces beverage alcohol;
 - d. any process unit that has no equipment “in VOC service” as determined in accordance with OAC 3745-21-10(O)(2); and
 - e. any process unit at a petroleum refinery, as defined in OAC 3745-21-01(E)(15).
- (20) The following process equipment are exempt from the requirements of OAC 3745-21-09(DD)(2) to (DD)(6). Records shall be maintained to identify and document the process unit equipment meeting these requirements:
 - a. any equipment “not in VOC service”, as determined in accordance with OAC 3745-21-10(O)(2);
 - b. any equipment “in vacuum service”; and
 - c. any equipment subject to an equivalent emission limitation as provided in OAC 3745-21-09(DD)(16).



e) Reporting Requirements

(1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify:

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases immediately before the catalyst bed and/or the average temperature difference across the catalyst bed was outside of the acceptable ranges;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the catalytic incinerator; and
 - iii. any exceedance of the rolling, 12-month VOC emission limitation.
- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.



The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (4) Semiannual reports shall be submitted to the Director by the first day of February and August and shall include the following information for each preceding semiannual period of operations:
 - a. the process unit identification;
 - b. the number of pumps “in light liquid service” associated with the process unit, excluding:
 - i. pumps that have no externally actuated shaft penetrating the pump housing and designated for “no detectable emissions”; and
 - ii. pumps equipped with a closed vent system capable of capturing and transporting leakage from the pump seal to control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10);
 - c. the number of valves “in gas/vapor service” or “in light liquid service” associated with the process unit, excluding:
 - i. valves that have no externally actuated stem penetrating the valve and designated for “no detectable emission”; and
 - ii. valves qualified for the alternative monitoring standard based on the percentage of valves leaking, under the provision of OAC 3745-21-09(DD)(13);
 - d. the number of compressors associated with the process unit, excluding:
 - i. compressors designated for and meeting the requirements for “no detectable emissions”;
 - ii. compressors equipped with a closed vent system capable of capturing and transporting leakage from the compressor seal to control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10); and/or
 - iii. reciprocating compressors installed prior to 5/9/86, where it can be demonstrated that recasting or replacing the compressor would be the only means of complying with the requirement to equip it with a seal with a barrier fluid system and sensor;



- e. for each month during the semiannual period:
 - i. the number of pumps “in light liquid service” for which leaks were detected (as required in this permit);
 - ii. the number of pumps “in light liquid service” for which leaks were not repaired within 15 calendar days after the date of leak detection;
 - iii. the number of valves “in gas/vapor service” or “in light liquid service” for which leaks were detected (as required in this permit);
 - iv. the number of valves “in gas/vapor service” or “in light liquid service” for which leaks were not repaired within 15 calendar days after the date of leak detection;
 - v. the number of compressors for which leaks were detected (as required in this permit);
 - vi. the number of compressors for which leaks were not repaired within 15 calendar days after the date of leak detection; and
 - vii. for each delay of repair allowed pursuant to OAC 3745-21-09(DD)(11), the reason for the delay;
- f. the dates of process unit shutdowns that occurred within the semiannual period; and
- g. the results of compliance tests for equipment identified as having “no detectable emissions”, along with the associated equipment identification numbers from the compliance log.

Semiannual reports shall be submitted to the appropriate Ohio EPA district office or local air agency by the first day of February and August and shall include information for the preceding semiannual period.

- (5) The permittee shall notify the appropriate Ohio EPA district office or local air agency of the intent-to-test the process control equipment not less than 30 days before the proposed initiation of the testing. The following information shall be included in the notification
 - a. a statement indicating the purpose of the proposed test and the applicable paragraph of OAC 3745-21-09 for which compliance will be demonstrated;
 - b. a detailed description of the process unit and control device to be tested;
 - c. a detailed description of the test procedures, equipment and sampling sites; and
 - d. a timetable, setting forth the dates on which:



- i. the testing will be conducted; and
- ii. the final test report will be submitted.

The results of such compliance tests shall be reported to the appropriate Ohio EPA district office or local air agency within 30 days following the test date.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

The permittee shall vent the process vent stream to a catalytic incinerator that is designed and operated either to reduce the VOC emissions vented to it with an efficiency of at least 98%, by weight, or to emit VOC at a concentration less than 20 parts per million, by volume, dry basis.

- Applicable Compliance Method:

The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- i. the emission testing shall be conducted within 6 months prior to permit expiration (unit was tested May 30,2012);
- ii. the emission testing shall be conducted to demonstrate compliance with the hourly allowables for volatile organic compounds (VOC) and the control efficiency across the thermal oxidizer. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC 3745-21-10(C)(2)(b). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases;
- iii. the following test method shall be employed to demonstrate compliance: Methods 1-4 and 320 of 40 CFR Part 60, Appendix A for total organic compounds (TOC) including formaldehyde and methanol concentrations at the inlet and outlet to determine VOC control efficiency. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA; and
- iv. the test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA, CDO.



Not later than 30 days prior to the proposed test date, the permittee shall submit an "Intent to Test" notification to the Ohio EPA, CDO. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time and date of the test, and the person who will be conducting the test. Failure to submit such notification for review and approval prior to the test may result in the Ohio EPA, CDO refusal to accept the results of the emission test.

Personnel from the Ohio EPA, CDO shall be permitted to witness the test, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, CDO within 30 days following completion of the test. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, CDO.

b. Emission Limitations:

4.05 lbs/hr and 17.7 tons per year CO

Applicable Compliance Method:

The annual limitation is based on the maximum potential to emit and compliance with the annual limit shall be assumed as long as the permittee demonstrates compliance with the hourly emission limitation.

c. Emission Limitations:

1.71 lbs/hr and 7.5 tons per year VOC from catalytic incinerator stack

Applicable Compliance Method:

The annual VOC limitation is based on the maximum potential to emit and compliance with the annual limit shall be assumed as long as the permittee demonstrates compliance with the hourly emission limitation and complies with the monitoring and recordkeeping requirements of this permit.

g) Miscellaneous Requirements

(1) None.



4. P012, R-5

Operations, Property and/or Equipment Description:

Reactor R-5 (4,000 gallons) with a condenser and a dryer

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - a. d)(4)-d)(7), and e)(5)
 - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - a. b)(1)b., c)(1)-c)(4), e)(2), f)(1)d.
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 01-8730, as issued 12/16/03)	Emissions shall not exceed: 2.45 pounds per hour VOC The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-08(B). See b)(2)a., b)(2)b.
b.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V and MACT requirements)	See 1)b)(1) [Facility-Wide Terms and Conditions] Emissions shall not exceed: 1.89 tons per rolling, 12-month period volatile organic compounds (VOC) 8.67 pounds per batch acetonitrile and 1.64 tons per rolling, 12-month period See c)(1)-c)(4), d)(3), e)(2), f)(1)d.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-08(B)	The requirements specified by this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).
d.	ORC 3704.03(F)(4)(d) (Toxic Air Contaminant Statute)	See d)(4)-d)(7) and e)(5)

(2) Additional Terms and Conditions

- a. The permittee shall eliminate visible emissions of fugitive particulate emissions (PE) by charging solids within an enclosed room passively vented inside the building.
- b. Based on formulation data and emission testing, acetonitrile and glycol ether PE represent the total VOC and HAP emissions from this emission unit during the production of acetoguanamine resin.

c) Operational Restrictions

- (1) All of the VOC emissions from this emissions unit shall be vented to the condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- (2) The temperature of the exhaust gases from the condenser on the reactor shall not exceed 77 degrees Fahrenheit, as a one hour average.
- (3) The temperature of the exhaust gases from the condenser on the dryer shall not exceed 75 degrees Fahrenheit, as a one hour average.
- (4) The permittee shall not produce more than 30 batches of acetoguanamine resin during any month.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:



- a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
 - b. a log or record of downtime for the capture (collection) system, condenser, or monitoring equipment, when the associated emissions unit is in operation.
- (2) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was deviation;
- j. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request



revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (3) The permittee shall collect and record the following information for each month for this emissions unit:
- a. the number of batches produced;
 - b. the total acetonitrile emissions, in pounds or tons;
 - c. the rolling, 12-month summation of the acetonitrile emissions, in pounds or tons;
 - d. the monthly VOC emissions from this emissions unit, in tons;
 - e. the rolling, 12-month summation of VOC emissions from this emissions unit;
 - f. the monthly individual HAP emissions from this emissions unit, in tons;
 - g. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - h. the monthly combined HAP emissions from this emissions unit, in tons;
 - i. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
- (4) The PTIO application for this emissions unit, P012, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices";
or



ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: Acetonitrile

TLV (mg/m3): 67

Maximum Hourly Emission Rate (lbs/hr): 2.25

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 655.6

MAGLC (ug/m3): 1,595

The permittee, has demonstrated that emissions of acetonitrile, from emissions unit(s) P012, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

(5) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, 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 new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV 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 toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and



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

If the permittee determines that the "Toxic Air Contaminant Statute" 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 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (6) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

- (7) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio



EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
 - iii. all exceedances of the monthly batch operational restriction in c)(4);
 - iv. all exceedances of the rolling, 12-month acetonitrile emissions; and
 - v. all exceedances of the rolling, 12-month VOC emissions.
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

- (3) The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).



- (4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
 - (5) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
2.45 pounds per hour VOC

Applicable Compliance Method:

This emission limitation was established by summing the maximum hourly emission rates of 2.25 pounds of acetonitrile and 0.195 pound of glycol ether PM determined through emission testing on December 17, 2002 while charging acetonitrile and blending with glycol ether PM. If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18.
 - b. Emission Limitation:
1.89 tons per year of VOC

Applicable Compliance Method:

This emission limitation was established by summing the batch emission rates of 8.67 pounds of acetonitrile and 1.19 pounds of glycol ether PM (9.86 pounds VOC per batch) determined through emission testing on December 17, 2002 and multiplying the total OC batch emission rate by 360 batches per year. An additional 0.12 ton of VOC per year is generated as a working loss during transfer to storage tanks. Compliance with this emission limitation shall be demonstrated based upon the record keeping requirements of this permit.



c. Emission Limitation:

8.67 pounds acetonitrile emissions per batch

Applicable Compliance Method:

This emission limitation was established by summing the hourly acetonitrile emission rates from the reactor and dryer associated with this emission unit as determined through emission testing on December 17, 2002. If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18.

d. Emission Limitation:

1.64 tons acetonitrile emissions per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established by multiplying the batch emission rate of 8.67 pounds of acetonitrile by 360 batches per year. An additional 0.08 ton of acetonitrile per year is generated during transfer to storage tanks. Compliance with this emission limitation shall be demonstrated based upon the record keeping requirements in d)(2) of this permit.

g) Miscellaneous Requirements

(1) None.



5. P014, R-3

Operations, Property and/or Equipment Description:

Reactor 3 (R-3000) 3,000 gallons with condenser

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. g)(1)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., b)(2)a., c)(1), c)(2), d)(3), e)(2), f)(1)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)(a)(ii) (P0082687, as issued 10/9/2008)	The requirements established pursuant to this rule are equivalent to the requirements of OAC rule 3745-31-05(D). See b)(2)a.
b.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V and MACT requirements)	See 1)b)(1) [Facility-Wide Terms and Conditions] Emissions shall not exceed: 1.0 ton per rolling, 12-month period organic compounds (VOC) See c)(1), c)(2), d)(3), e)(2), f)(1)
c.	OAC rule 3745-15-06	See b)(2)a.



(2) Additional Terms and Conditions

- a. The permittee shall, prior to production, ensure that this emission unit is connected to the functional emergency containment system.

If any event causes a rupture disc to open, releasing material to the emergency containment system, all resin production shall be stabilized and no new batches will be started restarted until any necessary repairs are made. The emergency containment system shall be drained and repaired for normal kettle operation prior to production restart.

c) Operational Restrictions

- (1) All of the VOC emissions from this emissions unit shall be vented to the condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- (2) In order to maintain compliance with the applicable emission limitation contained in this permit, the acceptable maximum average temperature of the exhaust gases from the condenser, as a one hour average, shall not be more than 77 degrees Fahrenheit. The condenser shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manual.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
- a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
- b. a log or record of downtime for the capture (collection) system, condenser, or monitoring equipment, when the associated emissions unit is in operation.

These records shall be maintained at the facility for a period of three years.



- (2) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was deviation;
- j. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.



- (3) The permittee shall maintain the following monthly records for this emission unit:
 - a. The number of batches processed in this emissions unit;
 - b. the monthly VOC emissions from this emissions unit, in tons;
 - c. the rolling, 12-month summation of VOC emissions from this emissions unit;
 - d. the monthly individual HAP emissions from this emissions unit, in tons;
 - e. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - f. the monthly combined HAP emissions from this emissions unit, in tons;
 - g. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
- e) Reporting Requirements
 - (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
 - (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
 - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
 - iii. any exceedance of the VOC emission limitation; and



- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

- 1.0 ton per year OC emissions

- Applicable Compliance Method:

- Compliance with this emission limitation shall be demonstrated based upon the record keeping requirements in d)(3)c. of this permit. The annual OC emission limitation was derived at the maximum potential to emit using an emission factor of 1.3 pounds OC per batch derived during phenol-formaldehyde resin production multiplied by 4 batches per day * 365 days per year divided by 2,000 pounds per ton.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Ohio EPA's Air Toxic Policy was not necessary because the increase in emissions due to the modification(s) to the emissions unit was less than 1 ton per year of each toxic pollutant that has a listed Threshold Limit Value (TLV), as documented in the most current version of the American Conference of Governmental Industrial Hygienists (ACGIH's) handbook entitled TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices).



6. P018, AR-3

Operations, Property and/or Equipment Description:

Benzenesulfonic and toluenesulfonic blends, phenol sulfonic acid production

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - a. None.
 - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - a. b)(1)b., c)(1), c)(2), d)(1), d)(2), e)(2), and f)(1)
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions shall not exceed: 0.35 pound toluene per hour 1.1 pounds methanol per hour 2.17 pounds VOC per hour See b)(2)a.,
b.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V and MACT requirements)	See 1)b)(1) [Facility-Wide Terms and Conditions] Emissions shall not exceed: 0.28 ton toluene per rolling, 12-month period 1.4 tons methanol per rolling, 12-month period



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		2.6 tons VOC per rolling, 12-month period See c)(1), c)(2), d)(1), d)(2), e)(2), and f)(1)
c.	OAC rule 3745-21-09(DD)	See b)(2)b., b)(2)c., c)(3)-c)(11), d)(8)-d)(28), e)(4) and e)(5)
d.	40 CFR Part 60, Subpart VV	The requirements established pursuant to this rule are equivalent to the requirements of OAC rule 3745-21-09(DD).

(2) Additional Terms and Conditions

- a. All of the VOC emissions from this emission unit shall vent to the reactor condenser and then to an activated carbon canister that is designed and operated either to reduce the VOC emissions during TSA vacuum strip phase or acid blending with an efficiency of at least 50 percent control, by weight, or to emit VOC at a concentration less than 1,000 parts per million, by volume, dry basis when the emission unit is in operation.
- b. The permittee of the process unit, producing one or more of the organic chemicals identified in Appendix A to OAC 3745-21-09 as an intermediate or final product, shall comply with the requirements identified in OAC 3745-21-09 paragraphs (DD)(2) to (DD)(6).
- c. The permittee shall developed and implement a leak detection and repair program for the process unit in accordance with the requirements specified in OAC 3745-21-09 paragraphs (DD)(2)(b) to (DD)(2)(m).

c) Operational Restrictions

- (1) All of the VOC emissions from this emissions unit shall be vented to the condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- (2) The permittee shall not complete more than five batches of acid blends in emissions unit P018 in any 24-hour period. The permittee shall not complete more than 152 batches in any monthly period nor more than 1,825 batches during any rolling, 12-month period.
- (3) When a leak is detected the following procedures shall be followed:
 - a. a weatherproof identification tag with the equipment identification number and the date shall be immediately attached to the leaking equipment;
 - b. a record of the leak, the date it was first detected, and any attempt to repair the leak and date is entered into the leak repair log;



- c. an identification tag that was attached to a leaking valve “in gas/vapor service” or “in light liquid service” may be removed only after the valve is repaired and found to have no leaks for two consecutive months; and
 - d. an identification tag attached to leaking equipment that is exempted from the monitoring requirements of OAC 3745-21-09(DD)(2)(b) may be removed immediately following the repair of the leak.
- (4) Repair of a leak shall be attempted no later than 5 calendar days after it is detected, where practicable, and shall include, but not limited to, the following best maintenance practices:
- a. tightening of bonnet bolts;
 - b. replacement of bonnet bolts;
 - c. tightening of packing gland nuts; and
 - d. injection of lubricant into lubricated packing.
- (5) Except where meeting one of the conditions defined in OAC 3745-21-09(DD)(11), where a delay in repair is allowed, a leak shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected. Leaking equipment shall be deemed repaired if the maximum VOC concentration is measured to be less than 10,000 ppmv.
- (6) Each compressor shall be equipped with a seal that has a barrier fluid system and sensor which comply with the requirements specified in OAC 3745-21-09(DD)(8), with the following exceptions:
- a. any compressor designated for “no detectable emissions”, and meeting the requirements of OAC 3745-21-09 (DD)(7).
 - b. any compressors equipped with a closed vent system capable of capturing and transporting any leakage from the compressor seal to control equipment, where the closed vent system and the control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
 - c. any reciprocating compressor that meets the following conditions:
 - i. the compressor was installed prior to May 9, 1986; and
 - ii. the permittee demonstrates, to the satisfaction of the Director, that recasting the compressor distance piece or replacing the compressor are the only options available to bring it into compliance with the requirements to equip it with a seal with a barrier fluid system and sensor.
- (7) Except as otherwise provided below, any pressure relief device “in gas/vapor service” in the process unit shall comply with the following requirements:
- a. Except during pressure releases, the pressure relief device shall be operated with “no detectable emissions”, as indicated by an instrument reading of less



than 500 ppmv above background, as measured by the method specified in OAC 3745-21-10(F)

- b. No later than 5 calendar days after a pressure release, a pressure relief device shall be tested to confirm the condition of "no detectable emissions" in accordance with the method specified in OAC 3745-21-10(F).
- c. Except for a delay of repair as provided in OAC 3745-21-09(DD)(11), a pressure relief device shall be returned to a condition of "no detectable emissions" as soon as practicable, but no later than 5 calendar days after a pressure release.

Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to control equipment meeting the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10) is excluded from these requirements.

- (8) With the exception of an "in-situ sampling system" (a non-extractive sampler or an in-line sampler), each sampling connection system in the process unit shall be equipped with a closed purge system or a closed vent system that meets one of the following requirements:
 - a. the purged process fluid is returned directly to the process line with zero VOC emissions to the ambient air;
 - b. the purged process fluid is collected and recycled with zero VOC emissions to the ambient air; or
 - c. the closed purge system or closed vent system is designed and operated to capture and transport all the purged process fluid to control equipment that meet the control equipment requirements specified in OAC 3745-21-09(DD)(10).
- (9) Each open-ended valve or line in the process unit shall be equipped with a cap, blind flange, plug, or second valve which shall comply with the following requirements:
 - a. Except during operations requiring the flow of process fluid through the open-ended valve or line, the cap, blind flange, plug, or second valve shall seal the open end of the open-ended valve or line.
 - b. If equipped with a second valve, the open-ended valve or line shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
 - c. A bleed valve or line from a double block and bleed system may remain open during operations that require venting the line between the block valves, but the line/valve shall be sealed (as in "a" above) at all other times.
- (10) A pump or compressor equipped with a seal that has a barrier fluid system and sensor, which are employed to meet the requirements of OAC 3745-21-09(DD)(2)(d)(ii) for a pump or 3745-21-09(DD)(3)(a) and (b) for a compressor, shall be operated and maintained to comply with the following requirements.



- a. The barrier fluid system shall meet one of the three following conditions:
 - i. The barrier fluid system is operated with a barrier fluid at a pressure that is greater, at all times, than the stuffing box pressure of the pump or compressor.
 - ii. The barrier fluid system is equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to control equipment and the closed vent system and control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
 - iii. The barrier fluid system is equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the ambient air.
 - b. The barrier fluid system shall be “in heavy liquid service” or shall not be “in VOC service”.
 - c. The barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both, based on design criteria and operating experience of the permittee.
- (11) A delay of the repair of a detected leak or a delay in returning a pressure relief valve/device to a condition of “no detectable emissions” shall be allowed only if complying with the following requirements:
- a. A delay of repair shall be allowed if the repair is technically infeasible without shutdown of the process unit. However, the repair shall occur before the end of the next process unit shutdown.
 - b. A delay of repair shall be allowed for a piece of equipment that is isolated from the process and that does not remain “in VOC service” (for example, isolated from the process and properly purged).
 - c. A delay of repair for a valve shall be allowed if:
 - i. it can be demonstrated that the emissions from purged material resulting from immediate repair is greater than the emissions likely to result from delay of repair; and
 - ii. the purged material is collected and destroyed or recovered in control equipment that meets the requirements specified in OAC 3745-21-09(DD)(10).
 - d. A delay of repair for a valve beyond a process unit shutdown shall be allowed if:
 - i. a valve assembly replacement is necessary during the process unit shutdown, and
 - ii. the valve assembly supplies have been depleted, and



- iii. valve assembly supplies had been sufficiently stocked before the supplies were depleted.

A delay of repair beyond the next process unit shutdown shall not be allowed for the valve unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

- e. A delay of repair for a pump shall be allowed if:
 - i. the repair requires the use of a dual mechanical seal system and associated barrier fluid system; and
 - ii. the repair is completed as soon as practicable, but no later than 6 months after the leak was detected.

- (12) The average temperature of the exhaust gases from the condenser, for any 3-hour block of time, shall not be greater than 100 degrees Fahrenheit during production of toluenesulfonic acid (TSA), phenolsulfonic acid (PSA), and peratertiaryoctophenol (PTO).

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall collect and record the following information for each day during which acid sulfonating and blending occurs:
 - a. the identification of each emissions unit in service;
 - b. the identification and completion date of each product batch for each emissions unit;
 - c. the number of batches of PSA, TSA and PTO completed in each emission unit during each 24 hour period;
 - d. the number of batches of acid blends completed in P018 during each 24-hour period;
 - e. during the first working day of each month, a summation of the number of batches of TSA, PSA and PTO completed during the previous monthly period and previous rolling, 12-month period for emission unit; and
 - f. during the first working day of each month, a summation for P018 of the number of acid blends completed during the previous monthly period and previous rolling, 12-month period.
- (2) The permittee shall collect and record the following information for each month for this emissions unit:
 - a. the number of batches produced;
 - b. the total toluene emissions, in pounds or tons;



- c. the rolling, 12-month summation of the toluene emissions, in pounds or tons;
 - d. the total methanol emissions, in pounds or tons;
 - e. the rolling, 12-month summation of the methanol emissions, in pounds or tons;
 - f. the monthly VOC emissions from this emissions unit, in tons;
 - g. the rolling, 12-month summation of VOC emissions from this emissions unit;
 - h. the monthly individual HAP emissions from this emissions unit, in tons;
 - i. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - j. the monthly combined HAP emissions from this emissions unit, in tons;
 - k. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
- (3) The permittee shall vent all process stack emissions from each emission unit to an activated carbon canister that achieves a 50 percent reduction in VOC concentration during sulfonating and acid blending processes. The outlet gases from the activated carbon shall be monitored monthly with currently approved OVA 108 monitor or a Method 21 compliant device, approved for use in the Leak Detection and Repair (LDAR) plan. The activated carbon shall be replaced whenever the outlet gas concentration exceeds an action level of 1,000 ppm as readout on OVA 108, or equivalent ppm as carbon using a different Method 21 compliant device during methanol charge for acid blending or vacuum strip during toluene sulfonic acid production.
- (4) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
- a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
 - b. a log or record of downtime for the capture (collection) system, condenser, or monitoring equipment, when the associated emissions unit is in operation.



- (5) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
 - a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

- (6) In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:
 - a. a description of the corrective action;
 - b. the date corrective action was completed;
 - c. the date and time the deviation ended;
 - d. the total period of time (in minutes) during which there was deviation;
 - e. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
 - f. the name(s) of the personnel who performed the work.

- (7) The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (8) The permittee shall monitor, during each calendar month, the VOC concentration at the outlet from the activated carbon canister on the emission unit with a Method 21 compliant device approved for use in the LDAR program. The monitoring shall be conducted using a device, as calibrated with methane, during the methanol charge phase for acid blending or the vacuum strip exhaust phase for TSA.



- a. the permittee shall identify in the revised checklist for the LDAR plan for P018 sufficient slots for recording the VOC concentration with pertinent process data and, if the action level had been exceeded, the date for replacing the activated carbon; and
 - b. the permittee shall monitor the outlet concentration of VOC emissions in ppm, as carbon, from the activated carbon canister during monthly LDAR monitoring. The permittee shall record the batch identification, production phase, and outlet gas concentration as readout by Method 21 compliant device or OVA 108 monitor.
- (9) Except as otherwise provided in OAC 3745-21-09(DD)(2)(c) and (DD)(2)(d), equipment shall be monitored for leaks in accordance with the method specified OAC 3745-21-10(F) and as follows:
- a. Any pump “in light liquid service” shall be monitored monthly.
 - b. Any valve “in gas/vapor service” or “in light liquid service” shall be monitored monthly, except that quarterly monitoring may be employed where no leaks are detected during two consecutive months. Quarterly monitoring may begin with the next calendar quarter following the two consecutive months of no detected leaks. Monitoring shall be conducted in the first month of each calendar quarter; and quarterly monitoring may continue until a leak is detected, at which time monitoring shall again be employed monthly.
 - c. The following equipment shall be monitored within 5 calendar days after evidence of a leak or potential leak from the equipment by visual, audible, olfactory, or other detection method:
 - i. a pump “in heavy liquid service”;
 - ii. a valve “in heavy liquid service”;
 - iii. a pressure relief device “in light liquid service” or “in heavy liquid service”;
and
 - iv. a flange or other connector.
 - d. Any equipment in which a leak is detected, as defined in OAC 3745-21-09(DD)(2)(g), shall be monitored within 5 working days after each attempt to repair it, unless the equipment was not successfully repaired.
- (10) For any valve “in gas/vapor service” or “in light liquid service”, an alternative monitoring schedule may be employed, in lieu of the monitoring schedule specified in OAC 3745-21-09(DD)(2)(b)(ii), above, if meeting one of the three following requirements:
- a. The valve is designated as “difficult to monitor” and is monitored once each calendar year if meeting all of the following conditions:
 - i. construction of the process unit commenced prior to May 9, 1986;



- ii. the permittee demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 6 feet above a support surface; and
 - iii. the permittee has a written plan that requires monitoring of the valve at least once per year.
 - b. The valve is designated as “unsafe to monitor” and is monitored as frequently as practical during times when it is safe to monitor, provided the following conditions are met:
 - i. the permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of monitoring on a monthly basis; and
 - ii. the permittee adheres to a written plan that requires monitoring of the valve as frequently as practical during times when it is safe to monitor.
 - c. The valve qualifies for an alternative monitoring schedule based on a “skip period” as allowed per OAC 3745-21-09(DD)(12).
- (11) The permittee may elect to implement an alternative monitoring schedule, to that of OAC 3745-21-09(DD)(2)(b)(ii) and as identified below, for the process unit valves if the following conditions are met:
 - a. no more than 2.0% of the process unit valves are leaking;
 - b. the permittee notifies the Director (the appropriate district office or local air agency) prior to implementing the alternative monitoring schedule; and such notification identifies:
 - i. which valves will be subject to the alternative monitoring schedule; and
 - ii. which work practice, identified in OAC 3745-21-09(DD)(12)(e), will be implemented;
 - c. the permittee monitors the valves initially monthly, to quarterly, as allowed and according to the requirements specified in OAC 3745-21-09(DD)(2)(b)(ii); and
 - d. the valves continue to meet with the conditions specified in OAC 3745-21-09(DD)(2)(g) to (DD)(2)(m).
- (12) If meeting all of the above conditions (“a” through “d”), one of the following monitoring periods for valve leak detection may be implemented:
 - a. after two consecutive quarterly leak detection periods with 2.0% or less of the process unit valves leaking, a monitoring program may begin in which the first quarter of every two consecutive quarterly leak detection periods is skipped; or



- b. after 5 consecutive quarterly leak detection periods with 2.0% or less of the process unit valves leaking, a monitoring program may begin in which the first three quarters of every four consecutive quarterly periods is skipped.
- (13) The alternative monitoring schedule shall be based on skipping quarterly monitoring periods. Any valve “in vacuum service”, “in heavy liquid service”, or not “in VOC service” shall be excluded from the monitoring schedule. If the percentage of valves leaking from the process unit becomes greater than 2.0%, the permittee shall again comply with the monitoring requirements specified in OAC 3745-21-09(DD)(2)(b)(ii), but may revert to this alternative monitoring schedule after meeting and documenting all of the above requirements.
- (14) The percentage of valves leaking, used to qualify for “skipped period” alternative monitoring schedule, shall be determined as the sum of the number of those valves found leaking during any portion of the current monitoring period and the number of those valves found leaking during a previous monitoring period for which repair has been delayed during the current monitoring period, divided by the total number of valves, and multiplied by 100.
- (15) The following information shall be recorded in a log, that is kept in a readily accessible location, if the “skipped period” alternative monitoring schedule for leak detection of process unit valves is established:
- a. the identification numbers of the valves subject to the alternative monitoring schedule;
 - b. the schedule established for monitoring the subject valves;
 - c. the valves exempt from the alternative monitoring schedule and reason for the exemption, i.e., “in vacuum service”, “in heavy liquid service”, or not “in VOC service”;
 - d. the percentage of valves leaking during each monitoring period; and
 - e. the maximum instrument reading and date each valve was monitored.
- (16) The permittee may elect to implement an alternative monitoring schedule to that of OAC 3745-21-09(DD)(2)(b)(ii) for the process unit valves, as provided in OAC 3745-21-09(DD)(2)(d)(v), if the following conditions are met:
- a. it can be demonstrated that no more than 2.0% of the process unit valves are leaking;
 - b. the permittee notifies the Director (the appropriate district office or local air agency) prior to implementing the alternative monitoring standard;
 - c. the demonstration of compliance to document that the percentage of valves leaking does not exceed 2.0% is conducted initially upon implementation and annually thereafter and as follows:



- i. all valves subject to the alternative monitoring standard shall be monitored for leaks within a one-week period by the method specified in OAC 3745-21-10(F);
 - ii. any leak detected and measured with an instrument reading of 10,000 ppmv or greater shall be recorded as a leak; and
 - iii. the percentage of valves leaking shall be determined as the number of valves for which a leak is detected, divided by the number of valves monitored, and multiplied by 100.
- (17) All valves “in gas/vapor service” or “in light liquid service” in the process unit shall be subject to this alternative monitoring standard, except for valves not “in VOC service”, valves “in vacuum service”, and valves which are designated as unsafe to monitor as provided in OAC 3745-21-09(DD)(2)(c)(ii).
- (18) When a leak is detected as described above, the leaking valve shall be repaired in accordance with OAC 3745-21-09(DD)(2)(h) and (DD)(2)(i). If the percentage of valves leaking from the process unit becomes greater than 2.0%, the permittee shall again comply with the monitoring requirements specified in OAC 3745-21-09(DD)(2)(b)(ii), but may revert to this alternative monitoring schedule after meeting and documenting all of the above requirements.
- (19) The following equipment is excluded from the monitoring requirements of OAC 3745-21-09(DD)(2)(b):
- a. any pump that has no externally actuated shaft penetrating the pump housing and that is designated for no detectable emissions as provided in OAC 3745-21-09(DD)(7);
 - b. any pump that is equipped with a dual mechanical seal which has a barrier fluid system and sensor that comply with the requirements specified in OAC 3745-21-09 (DD)(8);
 - c. any pump that is equipped with a closed vent system capable of capturing and transporting any leakage from the pump seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10);
 - d. any valve that has no externally actuated stem penetrating the valve and that is designated for “no detectable emissions” as provided in OAC 3745-21-09(DD)(7); and
 - e. any valve that qualifies for the alternative monitoring standard based on the percentage of valves leaking, as provided in OAC 3745-21-09(DD)(13).



- (20) Any pump “in light liquid service” shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, unless the pump is equipped with a closed vent system capable of transporting any leakage from the pump seal to control equipment, and the closed vent system and control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
- (21) Any sensor employed pursuant to OAC 3745-21-09(DD)(2)(d)(ii), for a pump equipped with a dual mechanical seal using a barrier fluid system and sensor; or a sensor employed pursuant to OAC 3745-21-09(DD)(3)(b), for a compressor equipped with a seal using a barrier fluid system and sensor; and complying with the requirements specified in OAC 3745-21-09(DD)(8), shall be checked daily, unless the sensor is equipped with an audible alarm.
- (22) A leak is detected when:
- a. a concentration of 10,000 ppmv or greater is measured from a potential leak interface of any equipment, that is monitored for leaks using the method specified in OAC 3745-21-10(F);
 - b. there is an indication of liquids dripping from the seal of a pump “in light liquid service”; or
 - c. a sensor employed pursuant to OAC 3745-21-09(DD)(2)(d)(ii) or (DD)(3)(b) indicates failure of the seal system, the barrier fluid system, or both.
- (23) When a leak is detected, the following information shall be recorded in the leak repair log:
- a. the identification number of the leaking equipment;
 - b. for each leak required to be monitored, the identification numbers of the leak detection instrument and its operator;
 - c. how the leak was detected, e.g., monitoring, visual inspection, odor detected, or sensor alarm/signal;
 - d. the date on which the leak was detected and the date of each attempt to repair the leaking equipment;
 - e. the methods of repair applied in each attempt to repair the leak;
 - f. one of the following entries within 5 working days after each attempt to repair the leaking equipment:
 - i. “not monitored,” denoting the leaking equipment was presumed to still be leaking and it was not monitored; or
 - ii. if the leaking equipment was monitored with a leak detection instrument, the maximum concentration that was measured as follows:
 - (a) the actual reading in ppmv; or



- (b) a record stating that the measured concentration was “below 10,000 ppmv”; or
 - (c) a record stating that the measured concentration was “above 10,000 ppmv”;
 - g. if the leak is not repaired within 15 calendar days after the date on which it was detected:
 - i. a record stating that repair was delayed and the reason for the delay;
 - ii. if repair is being delayed until the next process unit shutdown due to technical infeasibility of repair, the signature of the operator whose decision it was that repair is technically infeasible without a process unit shutdown;
 - iii. the expected date of successful repair of the leak; and
 - iv. the dates of process unit shutdowns that occur while the leaking equipment is unrepaired; and
 - v. the date on which the leak was successfully repaired.
- (24) The leak repair log shall be kept in a readily accessible location and maintained by the operator of the process unit. Each record shall be retained in the log for a minimum of two years following the date on which it was recorded.
- (25) The following information shall be recorded for the/each process unit in a log that is kept in a readily accessible location:
 - a. a list of identification numbers for equipment subject to the requirements of OAC 3745-21-09(DD)(2) to (DD)(10);
 - b. a list of identification numbers for equipment designated for “no detectable emissions” as provided in OAC 3745-21-09(DD)(7), and the signature of the permittee/operator authorizing the designation of each piece of equipment;
 - c. a list of identification numbers for pressure relief devices subject to OAC 3745-21-09(DD)(4);
 - d. a list of identification numbers for closed vent systems subject to OAC 3745-21-09(DD)(9);
 - e. for compliance tests required under OAC 3745-21-09(DD)(4)(c), (DD)(7)(c), and (DD)(9)(c):
 - i. the date each compliance test is conducted;
 - ii. the background VOC emissions level measured during each compliance test; and



- iii. the maximum instrument reading measured at the equipment during each compliance test;
- f. the following information pertaining to valves subject to an alternative monitoring schedule, as provided in OAC 3745-21-09(DD)(2)(c):
 - i. a list of identification numbers for valves designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve;
 - ii. a list of identification numbers for valves designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve; and
 - iii. a list of identification numbers for valves subject to the alternative monitoring schedule based on a "skip period", a schedule for monitoring these valves, and the percentage of valves leaking during each monitoring period;
- g. the following information pertaining to closed vent systems and control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10):
 - i. detailed schematics, design specifications, and piping and instrumentation diagrams for the closed vent systems and collection and control equipment;
 - ii. the dates and descriptions of any changes in the design specifications above;
 - iii. a description of the parameter(s) monitored, as required in OAC 3745-21-09(DD)(10)(d), to ensure that the control equipment is operated and maintained in conformance with its design, and the reason for selecting the parameter(s);
 - iv. periods when the closed vent systems and control equipment are not operated as designed, including periods when a flare pilot light does not have a flame; and
 - v. dates of startups and shutdowns of the closed vent systems and control equipment;
- h. the following information pertaining to barrier fluid systems and sensors described in OAC 3745-21-09(DD)(8):
 - i. a list of identification numbers of pumps and compressors equipped with such barrier fluid systems and sensors;
 - ii. the criteria that indicate failure of the seal system, the barrier fluid system, or both, as required in OAC 3745-21-09(DD)(8)(d) and an explanation of the criteria; and



- iii. any changes to such criteria and the reasons for the changes;
 - i. the following information for use in determining an exemption for the process unit as provided in OAC 3745-21-09(DD)(17)(a):
 - i. an analysis demonstrating the design capacity of the process unit;
 - ii. a statement listing the feed and raw materials and products from the process unit and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohols; or
 - iii. an analysis demonstrating that equipment that is documented as “not in VOC service” meets this condition; and
 - j. the following information pertaining to specific equipment that are exempt as provided in OAC 3745-21-09(DD)(17)(b):
 - i. a list of identification numbers of equipment “in vacuum service”;
 - ii. a list of identification numbers of equipment “not in VOC service” and the information or data used to demonstrate this; and
 - iii. a list of equipment subject to an equivalent emission requirement that is approved by the Director pursuant to OAC 3745-21-09 (DD)(16).
- (26) One recordkeeping system may be used to comply with the recordkeeping requirements for multiple process units provided the system identifies each process unit to which each record pertains.
- (27) The following facility process units are exempted from the requirements of OAC 3745-21-09(DD)(2) to (DD)(6). Records shall be maintained to identify and document the process unit equipment meeting these requirements:
- a. any process unit that has a design capacity to produce less than 1,100 tons per year;
 - b. any process unit that produces only heavy liquid chemicals from heavy liquid feed or raw materials;
 - c. any process unit that produces beverage alcohol;
 - d. any process unit that has no equipment “in VOC service” as determined in accordance with OAC 3745-21-10(O)(2); and
 - e. any process unit at a petroleum refinery, as defined in OAC 3745-21-01(E)(15).
- (28) The following process equipment are exempt from the requirements of OAC 3745-21-09(DD)(2) to (DD)(6). Records shall be maintained to identify and document the process unit equipment meeting these requirements:



- a. any equipment "not in VOC service", as determined in accordance with OAC 3745-21-10(O)(2);
- b. any equipment "in vacuum service"; and
- c. any equipment subject to an equivalent emission limitation as provided in OAC 3745-21-09(DD)(16).

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
 - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
 - iii. any exceedance of the rolling, 12-month methanol emission limitations;
 - iv. any exceedance of the rolling, 12-month toluene emission limitations;
 - v. any exceedance of the rolling, 12-month VOC emission limitations; and
 - vi. any exceedance of the acid batch restrictions noted in c)(2) above.
 - b. the probable cause of each deviation (excursion);



- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (4) Semiannual reports shall be submitted to the Director by the first day of February and August and shall include the following information for each preceding semiannual period of operations:
 - a. the process unit identification;
 - b. the number of pumps “in light liquid service” associated with the process unit, excluding:
 - i. pumps that have no externally actuated shaft penetrating the pump housing and designated for “no detectable emissions”; and
 - ii. pumps equipped with a closed vent system capable of capturing and transporting leakage from the pump seal to control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10);
 - c. the number of valves “in gas/vapor service” or “in light liquid service” associated with the process unit, excluding:
 - i. valves that have no externally actuated stem penetrating the valve and designated for “no detectable emission”; and
 - ii. valves qualified for the alternative monitoring standard based on the percentage of valves leaking, under the provision of OAC 3745-21-09(DD)(13);
 - d. the number of compressors associated with the process unit, excluding:
 - i. compressors designated for and meeting the requirements for “no detectable emissions”;



- ii. compressors equipped with a closed vent system capable of capturing and transporting leakage from the compressor seal to control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10); and/or
 - iii. reciprocating compressors installed prior to 5/9/86, where it can be demonstrated that recasting or replacing the compressor would be the only means of complying with the requirement to equip it with a seal with a barrier fluid system and sensor;
- e. for each month during the semiannual period:
- i. the number of pumps “in light liquid service” for which leaks were detected (as required in this permit);
 - ii. the number of pumps “in light liquid service” for which leaks were not repaired within 15 calendar days after the date of leak detection;
 - iii. the number of valves “in gas/vapor service” or “in light liquid service” for which leaks were detected (as required in this permit);
 - iv. the number of valves “in gas/vapor service” or “in light liquid service” for which leaks were not repaired within 15 calendar days after the date of leak detection;
 - v. the number of compressors for which leaks were detected (as required in this permit);
 - vi. the number of compressors for which leaks were not repaired within 15 calendar days after the date of leak detection; and
 - vii. for each delay of repair allowed pursuant to OAC 3745-21-09(DD)(11), the reason for the delay;
- f. the dates of process unit shutdowns that occurred within the semiannual period; and
- g. the results of compliance tests for equipment identified as having “no detectable emissions”, along with the associated equipment identification numbers from the compliance log.

Semiannual reports shall be submitted to the appropriate Ohio EPA district office or local air agency by the first day of February and August and shall include information for the preceding semiannual period.

- (5) The permittee shall notify the appropriate Ohio EPA district office or local air agency of the intent-to-test the process control equipment not less than 30 days before the proposed initiation of the testing. The following information shall be included in the notification



- a. a statement indicating the purpose of the proposed test and the applicable paragraph of OAC 3745-21-09 for which compliance will be demonstrated;
- b. a detailed description of the process unit and control device to be tested;
- c. a detailed description of the test procedures, equipment and sampling sites; and
- d. a timetable, setting forth the dates on which:
 - i. the testing will be conducted; and
 - ii. the final test report will be submitted.

The results of such compliance tests shall be reported to the appropriate Ohio EPA district office or local air agency within 30 days following the test date.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

0.35 pound toluene per hour and 0.28 ton per year

Applicable Compliance Method:

Outlet concentrations of less than 1,000 ppm, as readout on Method 21 compliant device, from carbon canister during TSA vacuum strip phase. Limitations derived from the equation: 0.76 pound toluene per batch * number of batches / 365 days in a year * 1 ton / 2,000 pounds.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for toluene, or other method as approved.

b. Emission Limitation:

1.1 pounds methanol per hour and 1.4 tons per year

Applicable Compliance Method:

Outlet concentrations of less than 1,000 ppm, as readout on Method 21 compliant device, from carbon canister during methanol charge. Limitations derived from the equation: 1.55 pound methanol per batch * number of batches / 365 days in a year * 1 ton / 2,000 pounds.



If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for methanol, or other method as approved.

c. Emission Limitation:

2.17 pounds volatile organic compounds (VOC) per hour and 2.6 tons per year

Applicable Compliance Method:

Compliance with the short term and long term VOC limitation is ensured by adhering to the control equipment standards stated in b)(2)a. and the batch restrictions specified in c)(1) and c)(2).

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for VOC, or other method as approved.

g) Miscellaneous Requirements

(1) None.



7. P026, SPH

Operations, Property and/or Equipment Description:

paraformaldehyde handling system

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - a. None.
 - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - a. b)(1)b., b)(2)a., c)(1)-c)(3), d)(3)-d)(5), e)(2), and f)(1)
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 01-7882, as issued 11/17/99)	Emissions shall not exceed: 3.6 pounds formaldehyde emissions per hour See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(D) (Federally enforceable limitation to avoid Title V and MACT requirements)	See 1)b)(1) [Facility-Wide Terms and Conditions] 0.72 ton formaldehyde emissions per rolling, 12-month period See b)(2)a., c)(1)-c)(3), d)(3)-d)(5), e)(2), and f)(1)



(2) Additional Terms and Conditions

- a. The final cartridge filter shall achieve 99 percent control of paraformaldehyde emissions during use of the pneumatic conveying system. Paraformaldehyde sublimates to formaldehyde vapors in the pneumatic system.
- b. The 3.6 pounds formaldehyde per hour limit was established for PTI purposes to reflect the potential to emit for this emission unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.

c) Operational Restrictions

- (1) All of the formaldehyde emissions from this emissions unit shall be vented to the final cartridge filter that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- (2) The permittee shall not charge more than 6,000 pounds of solid paraformaldehyde per batch during the production of solid paraformaldehyde-based resin.
- (3) The permittee shall not produce more than 800 batches of solid paraformaldehyde-based resins during any subsequent rolling, 12-month period.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the final cartridge filter when the controlled emission units are in operation. The permittee shall record the pressure drop across the final cartridge filter on daily basis when the unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.
- (2) Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
 - a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified in this permit, unless the



permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

This range or limit on the pressure drop across the final cartridge filter is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the final cartridge filter is between two to ten inches of water.
- (4) The permittee shall maintain the following records on a daily basis for the solid paraformaldehyde handling system:
 - a. the total number of solid paraformaldehyde-based resin batches produced each day.
- (5) The permittee shall maintain the following records on a monthly basis for the solid paraformaldehyde handling system to be completed during the first week of the following month:
 - a. the monthly formaldehyde emissions from this emissions unit, in pounds or tons;
 - b. the rolling, 12-month summation of formaldehyde emissions from this emissions unit;



- c. any batch of solid paraformaldehyde-based resin produced using more than 6,000 lbs of solid paraformaldehyde;
- d. the total number of solid paraformaldehyde-based resin batches produced during each month; and,
- e. a summation of the total number of solid paraformaldehyde-based resin batches produced during the rolling twelve-month period.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
 - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the pressure drop across the final cartridge filter was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the final cartridge filter;
 - iii. any exceedance of the 6,000 pound batch weight restriction for the solid paraformaldehyde system; and
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).



If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

3.6 pounds per hour and 0.72 ton per year formaldehyde emissions

Applicable Compliance Method:

The batch emission rate is calculated from the PM10 component in the 6,000 lbs paraformaldehyde charged and a sublimated component in the 18,000 cubic feet of air conveyed during a 30-minute period. The particulate component assumes that 0.01% of the weight is PM10 capable of passing through the cartridge filter plus a vapor component that sublimates at a vacuum according to equation 3-7 from the USEPA Batch Act Document EPA 450/R-94-020. The hourly emission rate is based on emission calculations for three 2,000 lb charges per batch.

$$6,000 \text{ lbs formaldehyde/batch} * (1 - 0.9999) = 0.6 \text{ lb formaldehyde from filter}$$

$$18,000 \text{ cubic feet of air/batch} * 30.06 \text{ lb formaldehyde/lb mole} * 0.00204 \text{ mole formaldehyde/mole air} * 0.33 \text{ atm} / (1.3114 \text{ atm ft}^3/\text{lbmolK} * 305 \text{ K}) = 0.91 \text{ lb formaldehyde /batch.}$$

$$0.91 \text{ lb vapor} + 0.6 \text{ lb from filter} = 1.51 \text{ lbs formaldehyde} * 2 \text{ batch/hr} \leq 3.6 \text{ lb formaldehyde/hr}$$

The annual emission rate is calculated from 1.51 lb formaldehyde/batch times the number of batches produced per year.

$$1.51 \text{ lb formaldehyde} * 800 \text{ batches/yr} * 1 \text{ ton}/2,000 \text{ lbs} \leq 0.72 \text{ ton formaldehyde/yr}$$



Final Permit-to-Install and Operate

CAPITAL RESIN CORP

Permit Number: P0113412

Facility ID: 0125040238

Effective Date: 5/7/2014

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for formaldehyde, or other method as approved.

g) Miscellaneous Requirements

(1) None.



8. P028, Pilot Tray Dryer

Operations, Property and/or Equipment Description:

Heated Tray Dryer with Wet Scrubber (500 lb batch)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., c)(1), c)(2), d)(3), e)(2), and f)(1)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	The requirements established pursuant to this rule are equivalent to the requirements of OAC rule 3745-31-05(D).
b.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V and MACT requirement)	See 1)b)(1) [Facility-Wide Terms and Conditions] Emissions shall not exceed: 0.0125 ton VOC per month averaged over a twelve month rolling period. See c)(1), c)(2), d)(3), e)(2) and f)(1)

(2) Additional Terms and Conditions

a. None.



c) Operational Restrictions

- (1) Desorbed organic compound (OC) emissions from the emission unit shall, at a minimum, be vented to a wet scrubber during the first hour of drying PD 206 ion exchange beads.
- (2) The permittee shall not dry more than 120 batches of PD 206 ion exchange beads during any roll, 12-month period.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in inches of water) during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with good engineering practices. The acceptable pressure drop across the wet scrubber shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

- (2) Whenever the monitored value for any parameter deviates from the range of not less than 1 inch nor greater than 10 inch static pressure drop in inches of water established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;



- j. the pressure drop immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

These range(s) and/or limit(s) for the pressure drop across the scrubber are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted range or limit for the pressure drop based upon information obtained during future emission tests that demonstrate compliance with the allowable HAP emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (3) The permittee shall collect and record the following information for each month for this emissions unit:
 - a. the number of batches produced;
 - b. the monthly VOC emissions from this emissions unit, in tons;
 - c. the monthly VOC emissions from this emissions unit averaged over a twelve month period;
 - d. the monthly PD 206 ion exchange bead batches;
 - e. the rolling, 12-month summation of PD 206 ion exchange bead batches;
 - f. the monthly individual HAP emissions from this emissions unit, in tons;
 - g. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - h. the monthly combined HAP emissions from this emissions unit, in tons;
 - i. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District



Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. any deviation whereas emissions were not vented to the wet scrubber during drying of PD 206 for the first hour; and
 - ii. any exceedance of the VOC emission limitation from the stack serving this emission unit.
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

0.0125 ton VOC per month, averaged over a twelve month period

Applicable Compliance Method:

The individual batch emissions rate is derived using a mass balance calculation based on the documented evaporative losses (500 lb batch * 0.05 methanol) multiplied times the removal efficiency of the wet scrubber system (1 – 0.90) multiplied times the number of batches (120) divided by 2,000 lbs per ton then divided by twelve months per year.

g) Miscellaneous Requirements

(1) None.



9. P029, R8000

Operations, Property and/or Equipment Description:

8000 gallon reactor system for phenolic, melamine formaldehyde and urea formaldehyde resin production with condenser, vacuum and emergency containment

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(6)-d)(9), e)(4)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)c., c)(1), d)(1), e)(2)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/31/01 (P0114668, as issued 8/2/2013)	BAT is equivalent to the volatile organic compound (VOC), pound per batch limitation established under OAC rule 3745-31-05(D) below. See b)(2)a.
b.	OAC rule 3745-31-05(A)(3), as effective 12/01/06	See b)(2)b.
c.	OAC rule 3745-31-05(D) Federally enforceable limitations to avoid Title V	See 1)b)(1) [Facility-Wide Terms and Conditions] Emissions shall not exceed: 4.16 pounds VOC per batch of resin produced 3.10 tons VOC per rolling, 12-month period See c)(1), d)(1), e)(2), B.1.b)(1)



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	ORC 3704.03(F)(4)(d) (Toxic Air Contaminant Statute)	See d)(6)-d)(9) and e)(4)

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

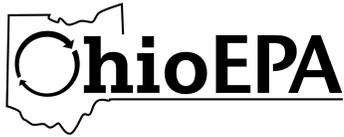
The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source since the calculated annual emission rate for this pollutant is less than 10 tons per year.

c. The permittee developed the batch emission limitation based on calculation of the maximum "worst case" emission rates to which an 89.1% control and capture efficiency was applied.

d. The permittee shall, prior to production, ensure that this emission unit is connected to a fully functional emergency containment system.

If a disk ruptures, releasing material into the emergency containment system, all resin production shall be stabilized and no new batches will be started or restarted until necessary repairs are made. The emergency containment system shall be drained and prepared for normal kettle operation prior to production restart.

e. The average temperature of the exhaust gases from the condenser, for any 1-hour period when the emission unit controlled by the condenser is in operation, shall not exceed 77 degrees Fahrenheit.



- c) Operational Restrictions
 - (1) All of the VOC emissions from these emission units shall be vented to the condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when these emission units are in operation.
- d) Monitoring and/or Recordkeeping Requirements
 - (1) The permittee shall collect and record the following information for each month for this emissions unit:
 - a. the identification (resin type) and date of completion for each batch produced;
 - b. the number of batches produced;
 - c. the VOC, individual HAP, and combined HAPs emissions, in pounds, per batch produced;
 - d. the monthly VOC emissions from this emissions unit, in tons;
 - e. the rolling, 12-month VOC emissions from this emissions unit, in tons;
 - f. the monthly individual HAP emissions from this emissions unit, in tons;
 - g. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - h. the monthly combined HAP emissions from this emissions unit, in tons;
 - i. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
 - (2) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within + 1 percent of the temperature being measured or + 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
 - a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and



- b. a log or record of downtime time for the capture (collection) system, condenser, or monitoring equipment, when the associated emissions unit is in operation.

These records shall be maintained at the facility for a period of three years.

- (3) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

- (4) In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- a. a description of the corrective action;
- b. the date corrective action was completed;
- c. the date and time the deviation ended;
- d. the total period of time (in minutes) during which there was deviation;
- e. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

- (5) The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved



revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (6) The PTI application for this emissions unit, P029, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this emissions unit for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
 - b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
 - c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):
$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$
 - d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):



Toxic Contaminant: methanol
TLV (mg/m³): 262 mg/m³
Maximum Hourly Emission Rate (lbs/hr): 0.36
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 12.06
MAGLC (ug/m³): 6238

The permittee, has demonstrated that emissions of methanol, from emissions unit P029, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

- (7) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, 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 new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV 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 toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
 - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" 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 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (8) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s)



modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);

- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
- (9) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- e) Reporting Requirements
- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
 - (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
 - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:



- i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser; and
 - iii. any exceedance of the 3.10 tons VOC per rolling, 12-month period limitation.
- b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (4) The permittee shall submit annual reports that include any changes to any parameter or value used in the dispersion model used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1 hour maximum concentration. The report should include:
 - a. the original model input;
 - b. the updated model input;
 - c. the reason for the change(s) to the input parameter(s); and
 - d. a summary of the results of the updated modeling, including the input changes; and
 - e. a statement that the model results indicate that the 1-hour maximum ground-level concentration is less than 80% of the MAGLC.

If no changes to the emissions, emissions unit(s), or the exhaust stack have been made during the reporting period, then the report shall include a statement to that effect.



f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

3.10 tons VOC per rolling, 12-month period

Applicable Compliance Method:

Compliance shall be demonstrated through the record keeping requirements established in d)(1).

b. Emission Limitation:

4.16 pounds VOC per batch

Applicable Compliance Method:

Compliance shall be determined in accordance with the testing requirements established in f)(2) below.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after startup of phenolic resin production.

b. The emission testing shall be conducted to demonstrate compliance with the VOC pound per batch limitation. In order to demonstrate compliance with the pound per batch limitation, each test run shall be conducted for the duration of one representative batch of phenolic resin, from charging through completion.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

i. Method 18 or Method 25 from 40 CFR Part 60, Appendix A for VOCs or Method 320 from 40 CFR Part 63, Appendix A for VOCs

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is



deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.

- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
- f. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

g) Miscellaneous Requirements

- (1) None.



10. Emissions Unit Group -Acid Reactors: P006,P013,

EU ID	Operations, Property and/or Equipment Description
P006	Toluene Sulfonic Acid (TSA), Phenol Sulfonic Acid (PSA), Paratertiary-Octylphenol (PTO) and Methanol Blends Manufacturing Reactor
P013	Manufacture of Toluene Sulfonic Acid, Organic Blends, ParatertiaryOctyl phenol

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
- (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
- a. d)(21)
- (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
- a. b)(1)c., b)(2)c., b)(2)d., c)(1), d)(1), d)(3), d)(4), e)(2), and f)(1)a.-f)(1)c.
- b) Applicable Emissions Limitations and/or Control Requirements
- (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001 (P0109009, as issued 2/14/2012)	BAT is equivalent to the condenser efficiency stated in b)(2)c., below. See b)(2)a., and b)(2)c.
b.	OAC rule 3745-31-05(A)(3), as effective 12/01/2006	See b)(2)b.
c.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V and MACT)	See B.1)(b). [Facility-Wide Terms and Conditions] Emissions shall not exceed: <u>Emissions unit P006</u> 0.24 ton per rolling, 12-month period of methanol emissions 0.28 ton per rolling, 12-month period of toluene emissions



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.57 ton per rolling, 12-month period of (VOC) emissions <u>Emissions unit P013</u> 0.12 ton per rolling, 12-month period of methanol emissions 0.28 ton per rolling, 12-month period of toluene emissions 0.28 ton per rolling, 12-month period of (VOC) emissions See b)(2)c., c)(1), d)(1), d)(3), d)(4), e)(2), and f)(1)a.-f)(1)c.
d.	OAC rule 3745-21-09(DD)	See b)(2)d., b)(2)e., c)(2)-c)(10), d)(5)-d)(20), e)(4) and e)(5)
e.	40 CFR 60.480 – 40.489 (40 CFR Part 60, Subpart VV)	The requirements established pursuant to this rule are equivalent to the requirements of OAC rule 3745-21-09(DD).
f.	ORC 3704.03(F)(4)(d) (Air Toxic Contaminant Statute)	See d)(21).

(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulation for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio’s State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally–approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. These rule paragraphs apply once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the volatile organic compound (VOC) emissions from



this air contaminant source since the uncontrolled potential to emit for VOC is less than 10 tons/year.

- c. The permittee shall vent the reactor condenser vapors to an activated carbon canister that is designed and operated either to reduce VOC emissions during toluene sulfonic acid (TSA) vacuum strip phase or acid blending with an efficiency of 50%, by weight, or to emit VOC at a concentration less than 1,000 parts per million (ppm), by volume, dry basis.
- d. The permittee of the process unit, producing one or more of the organic chemicals identified in Appendix A to OAC 3745-21-09 as an intermediate or final product, shall comply with the requirements identified in OAC 3745-21-09 paragraphs (DD)(2) to (DD)(6).
- e. The permittee shall developed and implement a leak detection and repair program for the process unit in accordance with the requirements specified in OAC 3745-21-09 paragraphs (DD)(2)(b) to (DD)(2)(m).

c) Operational Restrictions

- (1) All of the VOC emissions from this emissions unit shall be vented to a condenser/activated carbon canister that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- (2) When a leak is detected the following procedures shall be followed:
 - a. a weatherproof identification tag with the equipment identification number and the date shall be immediately attached to the leaking equipment;
 - b. a record of the leak, the date it was first detected, and any attempt to repair the leak and date is entered into the leak repair log;
 - c. an identification tag that was attached to a leaking valve "in gas/vapor service" or "in light liquid service" may be removed only after the valve is repaired and found to have no leaks for two consecutive months; and
 - d. an identification tag attached to leaking equipment that is exempted from the monitoring requirements of OAC 3745-21-09(DD)(2)(b) may be removed immediately following the repair of the leak.
- (3) Repair of a leak shall be attempted no later than 5 calendar days after it is detected, where practicable, and shall include, but not limited to, the following best maintenance practices:
 - a. tightening of bonnet bolts;
 - b. replacement of bonnet bolts;
 - c. tightening of packing gland nuts; and
 - d. injection of lubricant into lubricated packing.



- (4) Except where meeting one of the conditions defined in OAC 3745-21-09(DD)(11), where a delay in repair is allowed, a leak shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected. Leaking equipment shall be deemed repaired if the maximum VOC concentration is measured to be less than 10,000 ppmv.
- (5) Each compressor shall be equipped with a seal that has a barrier fluid system and sensor which comply with the requirements specified in OAC 3745-21-09(DD)(8), with the following exceptions:
- a. any compressor designated for “no detectable emissions”, and meeting the requirements of OAC 3745-21-09 (DD)(7).
 - b. any compressors equipped with a closed vent system capable of capturing and transporting any leakage from the compressor seal to control equipment, where the closed vent system and the control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
 - c. any reciprocating compressor that meets the following conditions:
 - i. the compressor was installed prior to May 9, 1986; and
 - ii. the permittee demonstrates, to the satisfaction of the Director, that recasting the compressor distance piece or replacing the compressor are the only options available to bring it into compliance with the requirements to equip it with a seal with a barrier fluid system and sensor.
- (6) Except as otherwise provided below, any pressure relief device “in gas/vapor service” in the process unit shall comply with the following requirements:
- a. Except during pressure releases, the pressure relief device shall be operated with “no detectable emissions”, as indicated by an instrument reading of less than 500 ppmv above background, as measured by the method specified in OAC 3745-21-10(F)
 - b. No later than 5 calendar days after a pressure release, a pressure relief device shall be tested to confirm the condition of “no detectable emissions” in accordance with the method specified in OAC 3745-21-10(F).
 - c. Except for a delay of repair as provided in OAC 3745-21-09(DD)(11), a pressure relief device shall be returned to a condition of “no detectable emissions” as soon as practicable, but no later than 5 calendar days after a pressure release.

Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to control equipment meeting the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10) is excluded from these requirements.

- (7) With the exception of an “in-situ sampling system” (a non-extractive sampler or an in-line sampler), each sampling connection system in the process unit shall be equipped with a closed purge system or a closed vent system that meets one of the following requirements:



- a. the purged process fluid is returned directly to the process line with zero VOC emissions to the ambient air;
 - b. the purged process fluid is collected and recycled with zero VOC emissions to the ambient air; or
 - c. the closed purge system or closed vent system is designed and operated to capture and transport all the purged process fluid to control equipment that meet the control equipment requirements specified in OAC 3745-21-09(DD)(10).
- (8) Each open-ended valve or line in the process unit shall be equipped with a cap, blind flange, plug, or second valve which shall comply with the following requirements:
- a. Except during operations requiring the flow of process fluid through the open-ended valve or line, the cap, blind flange, plug, or second valve shall seal the open end of the open-ended valve or line.
 - b. If equipped with a second valve, the open-ended valve or line shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
 - c. A bleed valve or line from a double block and bleed system may remain open during operations that require venting the line between the block valves, but the line/valve shall be sealed (as in "a" above) at all other times.
- (9) A pump or compressor equipped with a seal that has a barrier fluid system and sensor, which are employed to meet the requirements of OAC 3745-21-09(DD)(2)(d)(ii) for a pump or 3745-21-09(DD)(3)(a) and (b) for a compressor, shall be operated and maintained to comply with the following requirements.
- a. The barrier fluid system shall meet one of the three following conditions:
 - i. The barrier fluid system is operated with a barrier fluid at a pressure that is greater, at all times, than the stuffing box pressure of the pump or compressor.
 - ii. The barrier fluid system is equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to control equipment and the closed vent system and control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
 - iii. The barrier fluid system is equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the ambient air.
 - b. The barrier fluid system shall be "in heavy liquid service" or shall not be "in VOC service".
 - c. The barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both, based on design criteria and operating experience of the permittee.



- (10) A delay of the repair of a detected leak or a delay in returning a pressure relief valve/device to a condition of “no detectable emissions” shall be allowed only if complying with the following requirements:
- a. A delay of repair shall be allowed if the repair is technically infeasible without shutdown of the process unit. However, the repair shall occur before the end of the next process unit shutdown.
 - b. A delay of repair shall be allowed for a piece of equipment that is isolated from the process and that does not remain “in VOC service” (for example, isolated from the process and properly purged).
 - c. A delay of repair for a valve shall be allowed if:
 - i. it can be demonstrated that the emissions from purged material resulting from immediate repair is greater than the emissions likely to result from delay of repair; and
 - ii. the purged material is collected and destroyed or recovered in control equipment that meets the requirements specified in OAC 3745-21-09(DD)(10).
 - d. A delay of repair for a valve beyond a process unit shutdown shall be allowed if:
 - i. a valve assembly replacement is necessary during the process unit shutdown, and
 - ii. the valve assembly supplies have been depleted, and
 - iii. valve assembly supplies had been sufficiently stocked before the supplies were depleted.

A delay of repair beyond the next process unit shutdown shall not be allowed for the valve unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
 - e. A delay of repair for a pump shall be allowed if:
 - i. the repair requires the use of a dual mechanical seal system and associated barrier fluid system; and
 - ii. the repair is completed as soon as practicable, but no later than 6 months after the leak was detected.
- (11) The average temperature of the exhaust gases from the condenser serving these units, for any 3-hour block of time, shall not be greater than 100 degrees Fahrenheit.



d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
 - a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
 - b. a log of the downtime for the capture (collection) system, condenser, and monitoring equipment when the associated emissions unit(s) was/were in operation.
- (2) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
 - a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;



- i. the total period of time (in minutes) during which there was deviation;
- j. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (3) The permittee shall collect and record the following information for each month for this emissions unit:
 - a. the total toluene emissions, in pounds or tons;
 - b. the rolling, 12-month summation of the toluene emissions, in pounds or tons;
 - c. the total methanol emissions, in pounds or tons;
 - d. the rolling, 12-month summation of the methanol emissions, in pounds or tons;
 - e. the monthly VOC emissions from this emissions unit, in tons;
 - f. the rolling, 12-month summation of VOC emissions from this emissions unit;
 - g. the monthly individual HAP emissions from this emissions unit, in tons;
 - h. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - i. the monthly combined HAP emissions from this emissions unit, in tons;
 - j. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.
- (4) The activated carbon shall be replaced in the activated carbon canister whenever the outlet gas concentration exceeds an action level of 1,000 parts per million (ppm) on the OVA 108 monitor, or other Method 21 device, approved for use in the LDAR program during monthly monitoring during vacuum strip phase of toluene sulfonating or methanol charge phase of acid blending.



- (5) Except as otherwise provided in OAC 3745-21-09(DD)(2)(c) and (DD)(2)(d), equipment shall be monitored for leaks in accordance with the method specified OAC 3745-21-10(F) and as follows:
- a. Any pump “in light liquid service” shall be monitored monthly.
 - b. Any valve “in gas/vapor service” or “in light liquid service” shall be monitored monthly, except that quarterly monitoring may be employed where no leaks are detected during two consecutive months. Quarterly monitoring may begin with the next calendar quarter following the two consecutive months of no detected leaks. Monitoring shall be conducted in the first month of each calendar quarter; and quarterly monitoring may continue until a leak is detected, at which time monitoring shall again be employed monthly.
 - c. The following equipment shall be monitored within 5 calendar days after evidence of a leak or potential leak from the equipment by visual, audible, olfactory, or other detection method:
 - i. a pump “in heavy liquid service”;
 - ii. a valve “in heavy liquid service”;
 - iii. a pressure relief device “in light liquid service” or “in heavy liquid service”;
and
 - iv. a flange or other connector.
 - d. Any equipment in which a leak is detected, as defined in OAC 3745-21-09(DD)(2)(g), shall be monitored within 5 working days after each attempt to repair it, unless the equipment was not successfully repaired.
- (6) For any valve “in gas/vapor service” or “in light liquid service”, an alternative monitoring schedule may be employed, in lieu of the monitoring schedule specified in OAC 3745-21-09(DD)(2)(b)(ii), above, if meeting one of the three following requirements:
- a. The valve is designated as “difficult to monitor” and is monitored once each calendar year if meeting all of the following conditions:
 - i. construction of the process unit commenced prior to May 9, 1986;
 - ii. the permittee demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 6 feet above a support surface; and
 - iii. the permittee has a written plan that requires monitoring of the valve at least once per year.
 - b. The valve is designated as “unsafe to monitor” and is monitored as frequently as practical during times when it is safe to monitor, provided the following conditions are met:



- i. the permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of monitoring on a monthly basis; and
 - ii. the permittee adheres to a written plan that requires monitoring of the valve as frequently as practical during times when it is safe to monitor.
 - c. The valve qualifies for an alternative monitoring schedule based on a “skip period” as allowed per OAC 3745-21-09(DD)(12).
- (7) The permittee may elect to implement an alternative monitoring schedule, to that of OAC 3745-21-09(DD)(2)(b)(ii) and as identified below, for the process unit valves if the following conditions are met:
 - a. no more than 2.0% of the process unit valves are leaking;
 - b. the permittee notifies the Director (the appropriate district office or local air agency) prior to implementing the alternative monitoring schedule; and such notification identifies:
 - i. which valves will be subject to the alternative monitoring schedule; and
 - ii. which work practice, identified in OAC 3745-21-09(DD)(12)(e), will be implemented;
 - c. the permittee monitors the valves initially monthly, to quarterly, as allowed and according to the requirements specified in OAC 3745-21-09(DD)(2)(b)(ii); and
 - d. the valves continue to meet with the conditions specified in OAC 3745-21-09(DD)(2)(g) to (DD)(2)(m).

If meeting all of the above conditions (“a” through “d”), one of the following monitoring periods for valve leak detection may be implemented:

- e. after two consecutive quarterly leak detection periods with 2.0% or less of the process unit valves leaking, a monitoring program may begin in which the first quarter of every two consecutive quarterly leak detection periods is skipped; or
- f. after 5 consecutive quarterly leak detection periods with 2.0% or less of the process unit valves leaking, a monitoring program may begin in which the first three quarters of every four consecutive quarterly periods is skipped.

The alternative monitoring schedule shall be based on skipping quarterly monitoring periods. Any valve “in vacuum service”, “in heavy liquid service”, or not “in VOC service” shall be excluded from the monitoring schedule. If the percentage of valves leaking from the process unit becomes greater than 2.0%, the permittee shall again comply with the monitoring requirements specified in OAC 3745-21-09(DD)(2)(b)(ii), but may revert to this alternative monitoring schedule after meeting and documenting all of the above requirements.



- (8) The percentage of valves leaking, used to qualify for “skipped period” alternative monitoring schedule, shall be determined as the sum of the number of those valves found leaking during any portion of the current monitoring period and the number of those valves found leaking during a previous monitoring period for which repair has been delayed during the current monitoring period, divided by the total number of valves, and multiplied by 100.
- (9) The following information shall be recorded in a log, that is kept in a readily accessible location, if the “skipped period” alternative monitoring schedule for leak detection of process unit valves is established:
- a. the identification numbers of the valves subject to the alternative monitoring schedule;
 - b. the schedule established for monitoring the subject valves;
 - c. the valves exempt from the alternative monitoring schedule and reason for the exemption, i.e., “in vacuum service”, “in heavy liquid service”, or not “in VOC service”;
 - d. the percentage of valves leaking during each monitoring period; and
 - e. the maximum instrument reading and date each valve was monitored.
- (10) The permittee may elect to implement an alternative monitoring schedule to that of OAC 3745-21-09(DD)(2)(b)(ii) for the process unit valves, as provided in OAC 3745-21-09(DD)(2)(d)(v), if the following conditions are met:
- a. it can be demonstrated that no more than 2.0% of the process unit valves are leaking;
 - b. the permittee notifies the Director (the appropriate district office or local air agency) prior to implementing the alternative monitoring standard;
 - c. the demonstration of compliance to document that the percentage of valves leaking does not exceed 2.0% is conducted initially upon implementation and annually thereafter and as follows:
 - i. all valves subject to the alternative monitoring standard shall be monitored for leaks within a one-week period by the method specified in OAC 3745-21-10(F);
 - ii. any leak detected and measured with an instrument reading of 10,000ppmv or greater shall be recorded as a leak; and
 - iii. the percentage of valves leaking shall be determined as the number of valves for which a leak is detected, divided by the number of valves monitored, and multiplied by 100.



All valves "in gas/vapor service" or "in light liquid service" in the process unit shall be subject to this alternative monitoring standard, except for valves not "in VOC service", valves "in vacuum service", and valves which are designated as unsafe to monitor as provided in OAC 3745-21-09(DD)(2)(c)(ii).

- (11) When a leak is detected as described above, the leaking valve shall be repaired in accordance with OAC 3745-21-09(DD)(2)(h) and (DD)(2)(i). If the percentage of valves leaking from the process unit becomes greater than 2.0%, the permittee shall again comply with the monitoring requirements specified in OAC 3745-21-09(DD)(2)(b)(ii), but may revert to this alternative monitoring schedule after meeting and documenting all of the above requirements.
- (12) The following equipment is excluded from the monitoring requirements of OAC 3745-21-09(DD)(2)(b):
 - a. any pump that has no externally actuated shaft penetrating the pump housing and that is designated for no detectable emissions as provided in OAC 3745-21-09(DD)(7);
 - b. any pump that is equipped with a dual mechanical seal which has a barrier fluid system and sensor that comply with the requirements specified in OAC 3745-21-09 (DD)(8);
 - c. any pump that is equipped with a closed vent system capable of capturing and transporting any leakage from the pump seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10);
 - d. any valve that has no externally actuated stem penetrating the valve and that is designated for "no detectable emissions" as provided in OAC 3745-21-09(DD)(7); and
 - e. any valve that qualifies for the alternative monitoring standard based on the percentage of valves leaking, as provided in OAC 3745-21-09(DD)(13).
- (13) Any pump "in light liquid service" shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, unless the pump is equipped with a closed vent system capable of transporting any leakage from the pump seal to control equipment, and the closed vent system and control equipment comply with the requirements specified in OAC 3745-21-09(DD)(9) and (DD)(10).
- (14) Any sensor employed pursuant to OAC 3745-21-09(DD)(2)(d)(ii), for a pump equipped with a dual mechanical seal using a barrier fluid system and sensor; or a sensor employed pursuant to OAC 3745-21-09(DD)(3)(b), for a compressor equipped with a seal using a barrier fluid system and sensor; and complying with the requirements specified in OAC 3745-21-09(DD)(8), shall be checked daily, unless the sensor is equipped with an audible alarm.



- (15) A leak is detected when:
- a. a concentration of 10,000 ppmv or greater is measured from a potential leak interface of any equipment, that is monitored for leaks using the method specified in OAC 3745-21-10(F);
 - b. there is an indication of liquids dripping from the seal of a pump "in light liquid service"; or
 - c. a sensor employed pursuant to OAC 3745-21-09(DD)(2)(d)(ii) or (DD)(3)(b) indicates failure of the seal system, the barrier fluid system, or both.
- (16) When a leak is detected, the following information shall be recorded in the leak repair log:
- a. the identification number of the leaking equipment;
 - b. for each leak required to be monitored, the identification numbers of the leak detection instrument and its operator;
 - c. how the leak was detected, e.g., monitoring, visual inspection, odor detected, or sensor alarm/signal;
 - d. the date on which the leak was detected and the date of each attempt to repair the leaking equipment;
 - e. the methods of repair applied in each attempt to repair the leak;
 - f. one of the following entries within 5 working days after each attempt to repair the leaking equipment:
 - i. "not monitored," denoting the leaking equipment was presumed to still be leaking and it was not monitored; or
 - ii. if the leaking equipment was monitored with a leak detection instrument, the maximum concentration that was measured as follows:
 - (a) the actual reading in ppmv; or
 - (b) a record stating that the measured concentration was "below 10,000 ppmv"; or
 - (c) a record stating that the measured concentration was "above 10,000 ppmv";
 - g. if the leak is not repaired within 15 calendar days after the date on which it was detected:
 - i. a record stating that repair was delayed and the reason for the delay;



- ii. if repair is being delayed until the next process unit shutdown due to technical infeasibility of repair, the signature of the operator whose decision it was that repair is technically infeasible without a process unit shutdown;
 - iii. the expected date of successful repair of the leak; and
 - iv. the dates of process unit shutdowns that occur while the leaking equipment is unrepaired; and
 - h. the date on which the leak was successfully repaired.
- (17) The leak repair log shall be kept in a readily accessible location and maintained by the operator of the process unit. Each record shall be retained in the log for a minimum of two years following the date on which it was recorded.
- (18) The following information shall be recorded for the/each process unit in a log that is kept in a readily accessible location:
- a. a list of identification numbers for equipment subject to the requirements of OAC 3745-21-09(DD)(2) to (DD)(10);
 - b. a list of identification numbers for equipment designated for “no detectable emissions” as provided in OAC 3745-21-09(DD)(7), and the signature of the permittee/operator authorizing the designation of each piece of equipment;
 - c. a list of identification numbers for pressure relief devices subject to OAC 3745-21-09(DD)(4);
 - d. a list of identification numbers for closed vent systems subject to OAC 3745-21-09(DD)(9);
 - e. for compliance tests required under OAC 3745-21-09(DD)(4)(c), (DD)(7)(c), and (DD)(9)(c):
 - i. the date each compliance test is conducted;
 - ii. the background VOC emissions level measured during each compliance test; and
 - iii. the maximum instrument reading measured at the equipment during each compliance test;
 - f. the following information pertaining to valves subject to an alternative monitoring schedule, as provided in OAC 3745-21-09(DD)(2)(c):
 - i. a list of identification numbers for valves designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve;



- ii. a list of identification numbers for valves designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve; and
- iii. a list of identification numbers for valves subject to the alternative monitoring schedule based on a “skip period”, a schedule for monitoring these valves, and the percentage of valves leaking during each monitoring period;
- g. the following information pertaining to closed vent systems and control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10):
 - i. detailed schematics, design specifications, and piping and instrumentation diagrams for the closed vent systems and collection and control equipment;
 - ii. the dates and descriptions of any changes in the design specifications above;
 - iii. a description of the parameter(s) monitored, as required in OAC 3745-21-09(DD)(10)(d), to ensure that the control equipment is operated and maintained in conformance with its design, and the reason for selecting the parameter(s);
 - iv. periods when the closed vent systems and control equipment are not operated as designed, including periods when a flare pilot light does not have a flame; and
 - v. dates of startups and shutdowns of the closed vent systems and control equipment;
- h. the following information pertaining to barrier fluid systems and sensors described in OAC 3745-21-09(DD)(8):
 - i. a list of identification numbers of pumps and compressors equipped with such barrier fluid systems and sensors;
 - ii. the criteria that indicate failure of the seal system, the barrier fluid system, or both, as required in OAC 3745-21-09(DD)(8)(d) and an explanation of the criteria; and
 - iii. any changes to such criteria and the reasons for the changes;
- i. the following information for use in determining an exemption for the process unit as provided in OAC 3745-21-09(DD)(17)(a):
 - i. an analysis demonstrating the design capacity of the process unit;
 - ii. a statement listing the feed and raw materials and products from the process unit and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohols; or



- iii. an analysis demonstrating that equipment that is documented as “not in VOC service” meets this condition; and
- j. the following information pertaining to specific equipment that are exempt as provided in OAC 3745-21-09(DD)(17)(b):
 - i. a list of identification numbers of equipment “in vacuum service”;
 - ii. a list of identification numbers of equipment “not in VOC service” and the information or data used to demonstrate this; and
 - iii. a list of equipment subject to an equivalent emission requirement that is approved by the Director pursuant to OAC 3745-21-09(DD)(16).

One recordkeeping system may be used to comply with the recordkeeping requirements for multiple process units provided the system identifies each process unit to which each record pertains.

- (19) The following facility process units are exempted from the requirements of OAC 3745-21-09(DD)(2) to (DD)(6). Records shall be maintained to identify and document the process unit equipment meeting these requirements:
 - a. any process unit that has a design capacity to produce less than 1,100 tons per year;
 - b. any process unit that produces only heavy liquid chemicals from heavy liquid feed or raw materials;
 - c. any process unit that produces beverage alcohol;
 - d. any process unit that has no equipment “in VOC service” as determined in accordance with OAC 3745-21-10(O)(2); and
 - e. any process unit at a petroleum refinery, as defined in OAC 3745-21-01(E)(15).
- (20) The following process equipment are exempt from the requirements of OAC 3745-21-09(DD)(2) to (DD)(6). Records shall be maintained to identify and document the process unit equipment meeting these requirements:
 - a. any equipment “not in VOC service”, as determined in accordance with OAC 3745-21-10(O)(2);
 - b. any equipment “in vacuum service”; and
 - c. any equipment subject to an equivalent emission limitation as provided in OAC 3745-21-09(DD)(16).
- (21) Modeling to demonstrate compliance with, the Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions unit’s maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and



obtain a new or modified federally enforceable permit-to-install and operate (FEPTIO) prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new FEPTIO.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
 - a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range; and/or
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
 - iii. any exceedance of the rolling, 12-month methanol limitation;
 - iv. any exceedance of the rolling, 12-month toluene limitation; and
 - v. any exceedance of the rolling, 12-month VOC limitation.
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).



If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (4) Semiannual reports shall be submitted to the Director by the first day of February and August and shall include the following information for each preceding semiannual period of operations:
 - a. the process unit identification;
 - b. the number of pumps “in light liquid service” associated with the process unit, excluding:
 - i. pumps that have no externally actuated shaft penetrating the pump housing and designated for “no detectable emissions”; and
 - ii. pumps equipped with a closed vent system capable of capturing and transporting leakage from the pump seal to control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10);
 - c. the number of valves “in gas/vapor service” or “in light liquid service” associated with the process unit, excluding:
 - i. valves that have no externally actuated stem penetrating the valve and designated for “no detectable emission”; and
 - ii. valves qualified for the alternative monitoring standard based on the percentage of valves leaking, under the provision of OAC 3745-21-09(DD)(13);
 - d. the number of compressors associated with the process unit, excluding:
 - i. compressors designated for and meeting the requirements for “no detectable emissions”;
 - ii. compressors equipped with a closed vent system capable of capturing and transporting leakage from the compressor seal to control equipment meeting the requirements of OAC 3745-21-09(DD)(9) and (DD)(10); and/or



- iii. reciprocating compressors installed prior to 5/9/86, where it can be demonstrated that recasting or replacing the compressor would be the only means of complying with the requirement to equip it with a seal with a barrier fluid system and sensor;
- e. for each month during the semiannual period:
 - i. the number of pumps “in light liquid service” for which leaks were detected (as required in this permit);
 - ii. the number of pumps “in light liquid service” for which leaks were not repaired within 15 calendar days after the date of leak detection;
 - iii. the number of valves “in gas/vapor service” or “in light liquid service” for which leaks were detected (as required in this permit);
 - iv. the number of valves “in gas/vapor service” or “in light liquid service” for which leaks were not repaired within 15 calendar days after the date of leak detection;
 - v. the number of compressors for which leaks were detected (as required in this permit);
 - vi. the number of compressors for which leaks were not repaired within 15 calendar days after the date of leak detection; and
 - vii. for each delay of repair allowed pursuant to OAC 3745-21-09(DD)(11), the reason for the delay;
- f. the dates of process unit shutdowns that occurred within the semiannual period; and
- g. the results of compliance tests for equipment identified as having “no detectable emissions”, along with the associated equipment identification numbers from the compliance log.

Semiannual reports shall be submitted to the appropriate Ohio EPA district office or local air agency by the first day of February and August and shall include information for the preceding semiannual period.

- (5) The permittee shall notify the appropriate Ohio EPA district office or local air agency of the intent-to-test the process control equipment not less than 30 days before the proposed initiation of the testing. The following information shall be included in the notification
 - a. a statement indicating the purpose of the proposed test and the applicable paragraph of OAC 3745-21-09 for which compliance will be demonstrated;
 - b. a detailed description of the process unit and control device to be tested;



- c. a detailed description of the test procedures, equipment and sampling sites; and
- d. a timetable, setting forth the dates on which:
 - i. the testing will be conducted; and
 - ii. the final test report will be submitted.

The results of such compliance tests shall be reported to the appropriate Ohio EPA district office or local air agency within 30 days following the test date.

f) **Testing Requirements**

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

i. Emission Unit P006

0.24 ton/yr of methanol

Applicable Compliance Method

Compliance with the annual emission limitation by multiplying the company derived emission factor for each type of batch by the number of batches produced and summing the different batches together using the equation below:

$$E_{Methanol} = \sum_{i=1}^n \left(\frac{lb \text{ methanol}}{batch} \right)_i \times \left(\frac{number \ of \ batches}{year} \right)_i \times \left(\frac{1 \ ton}{2000 \ lbs} \right)$$

$E_{Methanol}$ = the emissions from a batch in ton/yr;

i = an individual batch; and

n = the total number of individual batches

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for methanol, or other method as approved.

ii. Emission Unit P013

0.12 ton/yr of methanol

Applicable Compliance Method



Compliance with the annual emission limitation by multiplying the company derived emission factor for each type of batch by the number of batches produced and summing the different batches together using the equation below:

$$E_{Methanol} = \sum_{i=1}^n \left(\frac{lb \text{ methanol}}{batch} \right)_i \times \left(\frac{number \text{ of batches}}{year} \right)_i \times \left(\frac{1 \text{ ton}}{2000 \text{ lbs}} \right)$$

$E_{Methanol}$ = the emissions from a batch in ton/yr;
i = an individual batch; and

n = the total number of individual batches

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for methanol, or other method as approved.

b. Emission Limitation:

i. Emission Unit P006

0.28 ton/yr of toluene

Applicable Compliance Method

Compliance with the annual emission limitation by multiplying the company derived emission factor for each type of batch by the number of batches produced and summing the different batches together using the equation below:

$$E_{Toluene} = \sum_{i=1}^n \left(\frac{lb \text{ toluene}}{batch} \right)_i \times \left(\frac{number \text{ of batches}}{year} \right)_i \times \left(\frac{1 \text{ ton}}{2000 \text{ lbs}} \right)$$

$E_{Toluene}$ = the emissions from a batch in ton/yr;
i = an individual batch; and

n = the total number of individual batches

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for toluene, or other method as approved.



ii. Emission Unit P013

0.28 ton/yr of toluene

Applicable Compliance Method

Compliance with the annual emission limitation by multiplying the company derived emission factor for each type of batch by the number of batches produced and summing the different batches together using the equation below:

$$E_{Toluene} = \sum_{i=1}^n \left(\frac{\text{lb toluene}}{\text{batch}} \right)_i \times \left(\frac{\text{number of batches}}{\text{year}} \right)_i \times \left(\frac{1 \text{ ton}}{2000 \text{ lbs}} \right)$$

$E_{Toluene}$ = the emissions from a batch in ton/yr;

i = an individual batch; and

n = the total number of individual batches

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for toluene, or other method as approved.

c. Emission Limitation:

i. Emission Unit P006

0.57 ton/yr of volatile organic compounds (VOC)

Applicable Compliance Method

Compliance with the annual emission limitation by multiplying the company derived emission factor for each type of batch by the number of batches produced and summing the different batches together using the equation below:

$$E_{VOC} = \sum_{i=1}^n \left(\frac{\text{lb VOC}}{\text{batch}} \right)_i \times \left(\frac{\text{number of batches}}{\text{year}} \right)_i \times \left(\frac{1 \text{ ton}}{2000 \text{ lbs}} \right)$$

E_{VOC} = the emissions from a batch in ton/yr;

i = an individual batch; and

n = the total number of individual batches

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part



60, Appendix A, Methods 1-4 and 18 or 320 for VOC, or other method as approved.

ii. Emission Unit P013

0.28 ton/yr of volatile organic compounds (VOC)

Applicable Compliance Method

Compliance with the annual emission limitation by multiplying the company derived emission factor for each type of batch by the number of batches produced and summing the different batches together using the equation below:

$$E_{VOC} = \sum_{i=1}^n \left(\frac{lb\ VOC}{batch} \right)_i \times \left(\frac{number\ of\ batches}{year} \right)_i \times \left(\frac{1\ ton}{2000\ lbs} \right)$$

E_{VOC} = the emissions from a batch in ton/yr;

i = an individual batch; and

n = the total number of individual batches.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for VOC, or other method as approved.

g) Miscellaneous Requirements

(1) None.



11. Emissions Unit Group -Resin Reactors: P004,P016,

EU ID	Operations, Property and/or Equipment Description
P004	Resin reactor R-1 (2,500 gallon) w/condenser, wet scrubber and solid paraformaldehyde handling system connected to emergency containment.
P016	Resin reactor R-2 (2,500 gallon) w/condenser, wet scrubber and solid paraformaldehyde handling system connected to emergency containment.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. g)(1)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., b)(2)a., c)(1)-c)(4), d)(1), d)(2), e)(2), f)(1)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 01-08750, issued 12/6/03)	Emissions shall not exceed: 8.0 pounds per hour VOC The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-05(D). See b)(2)b.
b.	OAC rule 3745-31-05(D) (Federally enforceable limitations to avoid Title V and MACT)	See B.1)(b). [Facility-Wide Terms and Conditions] Emissions shall not exceed: 5.8 tons VOC emissions per rolling, 12-month period



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.55 pound per batch methanol emissions 0.4 pound per batch formaldehyde emissions 0.4 ton methanol emissions per rolling, 12-month period 0.3 ton formaldehyde emissions per rolling, 12-month period See b)(2)a., c)(1)-c)(4), d)(1), d)(2), e)(2), f)(1)
c.	ORC 3704.03(F)(4)(d) (Air Toxic Contaminant Statute)	See g)(1)

(2) Additional Terms and Conditions

- a. The permittee developed the batch emission limitation based on calculation of maximum “worst case” emission rates to which a 95% control efficiency was applied to yield a 0.55 pound methanol during a 9-hour batch cycle during alkoxy modified resins production. During alkoxy/arloxy resin production, the permittee shall vent VOC emissions to the wet packed tower impingement scrubber that is designed and operated to reduce the VOC emissions vented to it with an efficiency of at least 95% by weight. Compliance with the hourly and annual emission limitations is assured so long as the permittee complies with the operational restrictions of this permit for parametric monitoring of exhaust gas scrubber pressure drop and daily batch production rates.

- b. The permittee shall, prior to production, ensure that this emission unit is connected to a fully functional emergency containment system.

If a disk ruptures, releasing material into the emergency containment system, all resin production shall be stabilized and no new batches will be started or restarted until necessary repairs are made. The emergency containment system shall be drained and prepared for normal kettle operation prior to production restart.

c) Operational Restrictions

- (1) All of the VOC emissions from these emission units shall be vented to the condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when these emission units are in operation.
- (2) The permittee shall maintain the following at all times during alkoxy/arloxy resin production:



- a. the pH of the scrubber liquor between 7 and 9;
 - b. the pressure drop across the scrubber between 1 and 4 inches of water; and
 - c. the scrubber water flow rate at a value of not less than 120 gallons per minute per cubic feet of gas flow.
- (3) The permittee shall not complete more than 2 batches of alkoxy/arloxy resins, 4 batches of phenolic resins or 8 batches of melamine-formaldehyde, respectively, in reactor R-1 and R-2 during any 24-hour period.
- (4) The average temperature of the exhaust gases from the condenser, for any 1-hour period when the emission unit controlled by the condenser is in operation, shall not exceed 77 degrees Fahrenheit.
- d) **Monitoring and/or Recordkeeping Requirements**
- (1) The permittee shall collect and record the following information for each day for this emissions unit:
- a. the identification and number of each batch produced;
 - b. the total methanol, formaldehyde and VOC emissions.
- (2) The permittee shall collect and record the following information for each month for this emissions unit:
- a. the identification and date of completion for each batch produced;
 - b. the numbers of each batch produced;
 - c. the total methanol emissions, in pounds or tons;
 - d. the rolling, 12-month summation of the methanol emissions, in pounds or tons;
 - e. the total formaldehyde emissions, in pounds or tons;
 - f. the rolling, 12-month summation of formaldehyde emissions from this unit;
 - g. the monthly VOC emissions from this emissions unit, in tons;
 - h. the rolling, 12-month summation of VOC emissions from this emissions unit;
 - i. the monthly individual HAP emissions from this emissions unit, in tons;
 - j. the rolling, 12-month individual HAP emissions from this emissions unit, in tons;
 - k. the monthly combined HAP emissions from this emissions unit, in tons;
 - l. the rolling, 12-month combined HAP emissions from this emissions unit, in tons.



- (3) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within + 1 percent of the temperature being measured or + 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
- a. all 1-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
 - b. a log or record of downtime for the capture (collection) system, condenser, or monitoring equipment, when the associated emissions unit is in operation.

These records shall be maintained at the facility for a period of three years.

- (4) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.
- (5) In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:
- a. a description of the corrective action;
 - b. the date corrective action was completed;
 - c. the date and time the deviation ended;



- d. the total period of time (in minutes) during which there was deviation;
- e. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

- (6) The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.
 - (7) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor during production of alkoxy/arloxy modified products. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendation, instructions and operating manuals.
 - (8) The permittee shall collect and record the following information during production of alkoxy/arloxy modified products:
 - a. the pH of the scrubber liquid;
 - b. the pressure drop across the scrubber;
 - c. the scrubber water flow rate in gallons per minute per cubic feet of gas flow; and
 - d. a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
- e) Reporting Requirements
- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically



identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - i. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the acceptable range;
 - ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
 - iii. any deviations from the alkoxy/arloxy resin restrictions set in c)(2);
 - iv. any exceedance of daily batch production rates;
 - v. any exceedance of the rolling, 12-month limitation for formaldehyde;
 - vi. any exceedance of the rolling, 12-month limitation for methanol; and
 - vii. any exceedance of the rolling, 12-month limitation for VOC.
 - b. the probable cause of each deviation (excursion);
 - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
 - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.



f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

0.55 pound methanol emissions per batch

Applicable Compliance Method:

Compliance with the batch methanol emission limitation may be demonstrated by summing the calculated uncontrolled methanol emission rate of 10.973 pounds per batch multiplied by the control efficiency of the scrubber (1-0.95) which is equal to 0.549 pound methanol per batch.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for methanol, or other method as approved.

b. Emission Limitation:

0.4 ton methanol emissions per rolling, 12-month period

Applicable Compliance Method:

The emission limitation was established by using an emission factor of 0.27 pound methanol emissions per batch of melamine resin multiplied by 240 batches per month * 12 months per year / by 2,000 pounds per ton. Compliance with this emissions limitation shall be demonstrated based upon the record keeping requirements of this permit.

c. Emission Limitation:

0.4 pound formaldehyde emissions per batch

Applicable Compliance Method:

The emission limitation was established by emission testing during phenolic resin production on November 20, 1997 and during melamine resin production on March 12, 2003. If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 308.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for formaldehyde, or other method as approved.



d. Emission Limitation:

0.3 ton formaldehyde emissions per rolling, 12-month period

Applicable Compliance Method:

The emission limitation was established by using an emission factor of 0.4 pound formaldehyde emissions per batch of phenol-formaldehyde resin multiplied by 124 batches per month * 12 months a year / 2,000 pounds per ton. Compliance is ensured, if the permittee demonstrates compliance with the operational restrictions, and monitoring and record keeping requirements of this permit.

e. Emission Limitation:

8.0 pounds VOC per hour

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in d)(1) of this permit.

If required, the permittee shall conduct emissions testing to demonstrate compliance with the emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 or 320 for VOC, or other method as approved.

f. Emission Limitation:

5.8 tons VOC per year

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in d)(2) of this permit.

g) **Miscellaneous Requirements**

- (1) Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the increase in emissions due to the modification(s) to the emissions unit was less than 1 ton per year of each toxic pollutant that has a listed Threshold Limit Value (TLV), as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIHs) handbook entitled "TLVs and BEIs ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices).