John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

11/8/2013

Certified Mail

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

Richard Cutrell
FRANKLIN INTERNATIONAL
2020 Bruck Street
Columbus, OH 43207

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0125040070
Permit Number: P0115352
Permit Type: OAC Chapter 3745-31 Modification
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)728-3778or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

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
FRANKLIN INTERNATIONAL

Facility ID:	0125040070
Permit Number:	P0115352
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	11/8/2013
Effective:	11/8/2013
Expiration:	12/8/2014

Division of Air Pollution Control
Permit-to-Install and Operate
for
FRANKLIN INTERNATIONAL

Table of Contents

Authorization

Facility ID:	0125040070
Application Number(s):	A0048575, A0048826
Permit Number:	P0115352
Permit Description:	Chapter 31 modification to transition two reactors with condensers from batch to continuous operation.
Permit Type:	OAC Chapter 3745-31 Modification
Permit Fee:	$400.00
Issue Date:	11/8/2013
Effective Date:	11/8/2013
Expiration Date:	12/8/2014

Permit Evaluation Report (PER) Annual Date: July 1 - June 30, Due Aug 15

This document constitutes issuance to:

FRANKLIN INTERNATIONAL
2020 Bruck Street
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

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0115352
Permit Description: Chapter 31 modification to transition two reactors with condensers from batch to continuous operation.

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

Emissions Unit ID:	**P114**
Company Equipment ID:	Reactor 5 System
Superseded Permit Number:	P0104737
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P128**
Company Equipment ID:	Pilot Reactor - Polymer Division
Superseded Permit Number:	P0104737
General Permit Category and Type:	Not Applicable

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 beingpermanently shut down without first applying for and obtaining a permit pursuantto 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.

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) Facility-wide emissions shall not exceed 99.9 tons of OC, 9.9 tons of individual hazardous air pollutant (IHAP) emissions and 24.9 tons of total combined hazardous air pollutant (TCHAP) emissions per rolling, 12-month period.

      Facility-wide emissions shall be determined from a summation of monthly emissions from the following emission units: P002, P003, P004, P005, P006, P007, P020, P021, P022, P023, P024, P026, P027, P028, P029, P030, P031, P039, P040, P041, P103, P106, P107, P113, P114, P115, P116, P124, P125, P126, P127, P128 and all emissions units that are exempt or permit by rule (OAC rule 3745-31-03), or deminimis (OAC rule 3745-15-05).

      Therefore, the provisions for Title V permitting, the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing in 40 CFR Part 63 Subpart FFFF, and for the Miscellaneous Coating Manufacturing in 40 CFR Part 63 Subpart HHHHH are not applicable.

      A listing of 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.

      (2) The operational restriction on the facility-wide potential to emit for VOC, individual HAPand combined HAP that establish federally enforceable limitations on emission units P103, P106, P107, P113, P114, P115, P116, P124, P125, P126, P127 and P128 are as follows:

      a. thepermittee shall equip each pre-emulsion tank with a hatch cover that must be closed at all times when the unit is in operation, except for solids addition and/or material sampling. The captured VOC emissions shall be vented to a condenser to achieve a minimum 50% reduction of VOC emissions; and

      b. thepermittee shall equip each reactor with a tightly fitting cover that must be closed at all times when the unit is in operation except for non-solvent material addition and/or material sampling. The captured VOC emissions shall be vented to a reflux condenser that achieves a minimum 90% reduction of VOC emissions.

      (3) The permittee shall maintain the following monthly records on-site to document compliance with the VOC, individual HAP, and combined HAP emission limitation for eachemissions unit and the facility-wide operational restrictions for emission units P002,

P003, P004, P005, P006, P007, P020, P021, P022, P023, P024, P026, P027, P028, P029, P030, P031, P039, P040, P103, P106, P107, P113, P114, P115, P116, P124, P125, P126, P127, P128 and any permit exempt and de minimis emissions units:

a. the calculated VOC emissions for the current month, in pounds or tons, for each the above emissions units;

b. the rolling, 12-month summation of VOC emissions for each of the above emissions units;

c. the calculated individual HAP emissions for the current month, in pounds or tons, for each the above emissions units;

d. the calculated combined HAP emissions for the current month, in pounds or tons, for each the above emissions units;

e. the rolling 12-month summation of individual HAP emissions for all the above emissions units; and

f. therolling 12-month summation of combined HAP emissions for all the above emissions units.

C. Emissions Unit Terms and Conditions

1. P114, Reactor 5 System

Operations, Property and/or Equipment Description:

Reactor 5 System w/pre-emulsion tank venting to condenser and conservation vent and w/reactor venting to reflux 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. b)(1)e.

(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.

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)	BAT has been determined to be venting all emissions from this emissions unit to a condenser with a 90% capture and control efficiency, whenever this emissions unit is in operation. See b)(2)a., b)(2)c., below.
b.	OAC rule 3745-31-05(A)(3), as effective 12/01/06	See b)(2)b. below.
c.	OAC rule 3745-21-07(M)(3)(d)(v)(e)	Emissions of volatile organic compounds (VOC) shall not exceed 8 pounds per hour and 40 pounds per day.
d.	OAC rule 3745-31-05(D) (Synthetic Minor to avoid Title V and MACT)	See B.1.b)(1), B.1.b)(2) and B.1.b)(3), above. See b)(2)d., below.
e.	ORC 3704.03(F)	See d)(9), below.

(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 chilled water and/or refrigerated condensers on the pre-emulsion tank and reactor for this emissions unit shall be operated and maintained in accordance with federally enforceable restrictions as required by this permit.

d. 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 in accordance with OAC rule 3745-31-05(A)(3) above.

c) Operational Restrictions

(1) The pressure setting of the conservation vent, if used on the pre-emulsion tank vent, shall be set by the manufacturer at a minimum of 2 inches of water, and the permittee shall perform annual inspections to ensure that the vents are clean and unobstructed.

(2) The permittee shall maintain an emergency containment system capable of preventing the release of any liquid or solid materials from these emissions units. The purpose of the emergency containment system is public safety and the design shall be adequate to prevent any release of liquid or solid materials.

d) Monitoring and/or Recordkeeping Requirements

(1) The maximum temperature of the exhaust gases from the reactor's condenser shall not exceed 42 degrees Celsius during any hour in which the average temperature is 35 degrees Celsius or above, when the condenser is used to demonstrate compliance with allowable VOC emission limitations. If these conditions are exceeded, the control

efficiency shall be calculated for the batch and the record of representative emissions maintained for the product batch shall not be used.

(2) The maximum temperature of the chilled water and/or refrigerant entering the condenser serving the pre-emulsion tank(s) shall not exceed 17 degrees Celsius at any time, or that temperature established during the most recent emissions test that demonstrated that the condenser achieved a 50% reduction of VOC emissions vented to it, if a pre-emulsion tank's condenser is used to demonstrate compliance with allowable VOC limitations. This temperature shall be monitored at the point the chilled water enters the building containing the reactor. If this temperature is exceeded, the control efficiency shall be calculated for the batch and the record of representative emissions maintained for the product batch shall not be used.

(3) The permittee shall collect and record the following information for each day for each batch of product processed in this emissions unit:

a. the company name, code, and/or identification number for each batch of product processed; the date of production; and the number of batches of each product processed;

b. the amount, in pounds, of each organic material added to pre-emulsion tank(s) and the reactor(this may be maintained on the batch sheet);

c. the highest operating temperature reached during the batch run;

d. the start and stop time for each batch run, recorded on each batch sheet, from which the duration of each batch run (hrs/batch) and the total hours of operation for this emissions unit (hrs/day) can be determined;

e. the actual number of batches of each product processed each day; if the temperature of the chilled water and or refrigerant entering the pre-emulsion tank's condenser does not exceed 5 degrees Celsius, a batch emission rate (see table below) in lbs of vinyl acetate/VOC from the pre-emulsion tank condenser (from emission test data) may be applied in the calculation of emissions contributed to the reactor system by the pre-emulsion tank. This calculation and record may also be maintained in the facility records and may be adjusted upward depending in the recorded highest temperature of the refrigerated coolant temperature entering the condenser serving the reactor pre-emulsion tank;

Average Temp(C)	Condenser Emission (vinyl acetate lbs/batch)
-2.5	0.759
-1	1.09
0	1.31
1	1.53
2	1.8
3	2.02
4	2.24
5	2.52

(4) At the end of each calendar month the permittee shall calculate and record the following information for each day of the preceding month:

a. the total number of batches of each individual product processed in this emissions unit during the calendar quarter, for each day of operation;

b. an identification of how the emissions were calculated for each day, showing each batch or all batches calculated using one of the following methods:

i. product batches are representative of normal operations and the estimated emissions are calculated by using existing documented, conservative and/or worst-case variables for each product batch or product batch group, and records maintained;

ii. product batch(s) is/are individually calculated;

iii. product batch(s) deviate(s) from normal operating parameters and is/are individually calculated, including adjustments to the efficiency due to condenser temperature deviations; and/or

iv. product batch(s) is/are made without the condenser control or during a malfunction of the condenser and the control efficiency is not applied;

c. the total actual VOC and HAP emissions for each day of operation (lbs/day), from all product batches produced each day, and calculated using one of the following methods:

i. the sum of the actual VOC and HAP emissions calculated from all batches run for each day of operation; or

ii. the sum of the actual VOC and HAP emissions from all batches run each day, calculated by multiplying the conservatively calculated or worst-case emissions for one batch of each product or product group times the number of batches of each product run, and adding the resultant OC and HAP emissions for all products made in this emissions unit each day, including those calculated individually for abnormal operations or for new products; and

d. theVOC emissions from this emissions unit for each month of operation, calculated by summing the emissions recorded, for each day .

* The controlled emissions from each batch produced under normal operating conditions shall be calculated by multiplying the emissions for each product batch or product batch group. The calculated controlled emissions of each organic chemical component shall be added to get the total OC/batch. The controlled emissions, in pounds/batch, for each product or product batch group, may be added for each day to satisfy this requirement.

(5) When the reactor's condenser is used to demonstrate compliance, the permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser serving the reactor, when the emissions unit is in operation. Units shall be in degrees Celsius. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within + or - 1 percent of the temperature being measured or + or - 2.8 degrees Celsius, 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.

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

a. the computer record of the continuous temperature monitor, which shall document the average temperature of the exhaust gases from the condenser serving the reactor, during each one-hour period of operation when the maximum temperature exceeded 42 degrees Celsius;

b. a record (continuous temperature monitoring graph or equivalent) of the operating time for the reactor and its associated condenser, temperature control device, and monitoring equipment for each product batch; and

c. for any batch in which the peak temperature of the exhaust gases from the condenser serving the reactor exceeded 42 degrees Celsius in any hour in which the average temperature was 35 degrees Celsius or above.

(6) When the pre-emulsion tanks' condenser are used to demonstrate compliance, the permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the chilled water entering the condenser serving the pre-emulsion tank(s) when the emissions unit is in operation. Units shall be in degrees Celsius. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within + or - 1 percent of the temperature being measured or + or - 2.8 degrees Celsius, 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, and may be monitored at the point the chilled water enters the building containing the reactor.

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

a. the computer record of the continuous temperature monitor which shall document the peak temperature of the chilled water entering the condenser serving the pre-emulsion tank(s);

b. a record (continuous temperature monitoring graph or equivalent) of the operating time for the pre-emulsion tank(s) and its/their associated condenser, temperature control device, and monitoring equipment for each product batch*; and

c. for any batch in which the peak temperature of the chilled-water entering the condenser serving the pre-emulsion tank(s) exceeded 17 degrees Celsius at any time or that temperature established during the most recent emissions test that demonstrated that the condenser effectively limited VOC emissions.

* If the pre-emulsion tank(s) has/have operated in association with the reactor in the production of any batch, and during the same period of time, the log for the reactor may so indicate this, to alleviate the second record for the pre-emulsion tank(s).

(7) 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.

(8) 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.

(9) 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) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit quarterly deviation (excursion) reports that include the following information:

a. an identification of any time during which the maximum temperature of the exhaust gases from the condenser serving the reactor exceeded 42 degrees Celsius during any hour in which the average temperature was 35 degrees Celsius or above, and for which the control efficiency and estimated emissions were not adjusted for the temperature deviation from normal conditions, for any batch in which the reactor's condenser is used to demonstrate compliance;

b. an identification of all periods of time during which the maximum temperature of the chilled water entering the condenser serving the pre-emulsion tank(s) (or chilled water entering the building containing the reactor) exceeded 17 degrees Celsius, and for which the control efficiency and estimated emissions were not adjusted for the temperature deviation from normal conditions, for any batch in which the pre-emulsion tank's(s') condenser(s) is/are used to demonstrate compliance;

c. the rolling 12-month summation of IHAP, TCHAP and VOC emissions;

d. the operational restriction on the pre-emulsion tank chilled water or refrigerated condenser;

e. the probable cause of each deviation (excursion);

f. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

g. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, thepermittee 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 of Ohio EPA, Central District Office.

(3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA e-Business Center: Air Services 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: Emissions of VOC shall not exceed 8 pounds per hour, 40 pounds per day.

i. Applicable Compliance Method: Compliance with this emission limitation has been demonstrated by the engineering analysis submitted with the permit application. Future compliance shall be determined based upon any revised engineering analysis established pursuant to the requirements of this permit and the records required pursuant to the Monitoring and Record Keeping Requirements in d). The emission limitations calculations are based upon U.S. EPA Guideline Series "Control of Volatile Organic Compounds Emissions from Batch Processes" and are based upon the ideal gas law, Raoult's law and Antione's equation.

ii. Applicable Compliance Method: The permittee shall conduct, or have conducted emissions testing for this emissions unit to determine the validity of the submitted engineering analysis. The emissions testing shall be conducted in accordance with the following requirements within six months of commencing operation:

(a) Emission testing shall be conducted to demonstrate compliance with the allowable emission rates for VOC.

The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

(i) VOC – Methods 1-4 and 2D, Methods 25 and/or 25A and/or Method 18 of 40 CFR, Part 60, Appendix A or Method 320 of 40 CFR, Part 63.

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

(b) The test(s) shall be conducted over an entire batch cycle of a reactor and shall occur during a period of warm, representative ambient air temperatures (60 degrees or more, Fahrenheit).

(c) Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).

(d) Personnel from the Ohio EPA Central District Office 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.

(e) 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 Ohio EPA Central District Office 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 Ohio EPA Central District Office.

b. Emission Limitations: Condenser shall achieve and operate at 90% capture and control efficiency.

Applicable Compliance Method: The permittee shall conduct, or have conducted emissions testing for this emissions unit to determine compliance with the stated control efficiency. The emissions testing shall be conducted in accordance with the following requirements within six months of commencing operation:

i. Emission testing shall be conducted to demonstrate compliance with the condenser control efficiency for VOC.

The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

(a) VOC – Methods 1-4 and 2D, Methods 25 and/or 25A and/or Method 18 of 40 CFR, Part 60, Appendix A or Method 320 of 40 CFR, Part 63.

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

(b) The test(s) shall be conducted over an entire batch cycle of a reactor and shall occur during a period of warm, representative ambient air temperatures (60 degrees or more, Fahrenheit).

(c) Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).

(d) Personnel from the Ohio EPA Central District Office 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.

(e) 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 Ohio EPA Central District Office 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 Ohio EPA Central District Office.

g) Miscellaneous Requirements

(1) None.

2. P128, Pilot Reactor - Polymer Division

Operations, Property and/or Equipment Description:

Pilot reactor (58 gallon) with condenser and 2 pre-emulsion tanks

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)d.

(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) and d)(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)	BAT has been determined to be venting all emissions from this emissions unit to a condenser with a 90% capture and control efficiency, whenever this emissions unit is in operation. See b)(2)a., c)(1) below.
b.	OAC rule 3745-21-07(M)(4)	Emissions of volatile organic compounds (VOC) shall not exceed 3 pounds per hour and 15 pounds per day.
c.	OAC rule 3745-31-05(D) (Synthetic Minor to avoid Title V and MACT)	See B.1.b)(1), B.1.b)(2) and B.1.b)(3) above.
d.	ORC 3704.03(F)	See d)(3), below.

(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 chilled water and/or refrigerated condensers on the pre-emulsion tank and reactor for this emissions unit shall be operated and maintained in accordance with federally enforceable restrictions as required by this permit.

d. 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 in accordance with OAC rule 3745-31-05(A)(3) above.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record the following information for each day for each batch of product processed in this emissions unit:

a. the company name, code, and/or identification number for each batch of product processed; the date of production; and the number of batches of each product processed;

b. the amount, in pounds, of each organic material added to pre-emulsion tank(s) and the reactor(this may be maintained on the batch sheet);

c. the highest operating temperature reached during the batch run;

d. the start and stop time for each batch run, recorded on each batch sheet, from which the duration of each batch run (hrs/batch) and the total hours of operation for this emissions unit (hrs/day) can be determined; and

e. the actual number of batches of each product processed each day.

(2) At the end of each calendar month the permittee shall calculate and record the following information for each day of the preceding month:

a. the total number of batches of each individual product processed in this emissions unit during the calendar quarter, for each day of operation;

b. an identification of how the emissions were calculated for each day, showing each batch or all batches calculated using one of the following methods:

i. product batches are representative of normal operations and the estimated emissions are calculated by using existing documented, conservative and/or worst-case variables for each product batch or product batch group, and records maintained;

ii. product batch(s) is/are individually calculated because an existing record, does not exist;

iii. product batch(s) deviate(s) from normal operating parameters and is/are individually calculated, including adjustments to the efficiency due to condenser temperature deviations; and/or

iv. product batch(s) is/are made without the condenser control or during a malfunction of the condenser and the control efficiency is not applied.

c. the total actual OC and HAP emissions for each day of operation (lbs/day), from all product batches produced each day, and calculated using one of the following methods:

i. the sum of the actual OC and HAP emissions calculated from all batches run for each day of operation; or

ii. the sum of the actual OC and HAP emissions from all batches run each day, calculated by multiplying the conservatively calculated or worst-case emissions for one batch of each product or product group times the number of batches of each product run, and adding the resultant VOC and HAP emissions for all products made in this emissions unit each day, including those calculated individually for abnormal operations or for new products.

d. the OC emissions from this emissions unit for each month of operation, calculated by summing the emissions for each day; and

e. therolling, 12-month summation of OC emissions from this emissions unit, calculated by summing the emissions recorded for each month.

* The controlled emissions from each batch produced under normal operating conditions shall be calculated by multiplying the emissions for each product batch or product batch group. The calculated controlled VOC emissions of each organic chemical component shall be added to get the total VOC/batch. The controlled emissions, in pounds/batch, maintained for each product or product batch group, may be added for each day to satisfy this requirement.

(3) 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) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

(2) The permittee shall submit quarterly deviation (excursion) reports for the following emissions unit(s) 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:

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

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (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 completed electronically and submitted via the Ohio EPA e-Business Center: Air Services 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. Emissions Limitation: VOC emissions shall not exceed 3 pounds per hour, 15 pounds per day.

i. Applicable Compliance Method: Compliance with this emission limitation has been demonstrated by the engineering analysis submitted with the permit application. Future compliance shall be determined based upon any revised engineering analysis established pursuant to the requirements of this permit and the records required pursuant to the Monitoring and Record Keeping Requirements in d). The emission limitations calculations are based upon U.S. EPA Guideline Series "Control of Volatile Organic Compounds Emissions from Batch Processes" and are based upon the ideal gas law, Raoult's law and Antione's equation.

ii. Applicable Compliance Method: The permittee shall conduct, or have conducted emissions testing for this emissions unit to determine the validity of the submitted engineering analysis. The emissions testing shall be conducted in accordance with the following requirements within six months of commencing operation:

(a) Emission testing shall be conducted to demonstrate compliance with the allowable emission rates for VOC.

The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

(i) VOC – Methods 1-4 and 2D, Methods 25 and/or 25A and/or Method 18 of 40 CFR, Part 60, Appendix A or Method 320 of 40 CFR, Part 63.

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

(b) The test(s) shall be conducted over an entire batch cycle of a reactor and shall occur during a period of warm, representative ambient air temperatures (60 degrees or more, Fahrenheit).

(c) Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).

(d) Personnel from the Ohio EPA Central District Office 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.

(e) 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 Ohio EPA Central District Office 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 Ohio EPA Central District Office.

b. Emissions Limitation: Condenser shall achieve and operate at 90% capture and control efficiency.

Applicable Compliance Method: The permittee shall conduct, or have conducted emissions testing for this emissions unit to determine compliance with the stated control efficiency. The emissions testing shall be conducted in accordance with the following requirements within six months of commencing operation:

i. Emission testing shall be conducted to demonstrate compliance with the condenser control efficiency.

The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

(a) VOC – Methods 1-4 and 2D, Methods 25 and/or 25A and/or Method 18 of 40 CFR, Part 60, Appendix A or Method 320 of 40 CFR, Part 63.

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

(b) The test(s) shall be conducted over an entire batch cycle of a reactor and shall occur during a period of warm, representative ambient air temperatures (60 degrees or more, Fahrenheit).

(c) Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. 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 Central District Office's refusal to accept the results of the emission test(s).

(d) Personnel from the Ohio EPA Central District Office 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.

(e) 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 Ohio EPA Central District Office 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 Ohio EPA Central District Office.

g) Miscellaneous Requirements

(1) None.