



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

5/16/2016

Certified Mail

Mr. Pierre El-Hindi
 TREMCO INC. - MAMECO DIVISION
 4475 E. 175th Street
 Cleveland, OH 44128

Yes	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: 1318002813
 Permit Number: P0120078
 Permit Type: Renewal
 County: Cuyahoga

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**
- **What should you do if you notice a spill or environmental emergency?**

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.

What should you do if you notice a spill or environmental emergency?

Any spill or environmental emergency which may endanger human health or the environment should be reported to the Emergency Response 24-HOUR EMERGENCY SPILL HOTLINE toll-free at (800) 282-9378. Report non-emergency complaints to the appropriate district office or local air agency.

If you have any questions regarding your permit, please contact Cleveland Division of Air Quality at (216)664-2297 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.
Assistant Chief, Permitting Section, DAPC

Cc: CDAQ



Response to Comments

Facility ID:	1318002813
Facility Name:	TREMCO INC. - MAMECO DIVISION
Facility Description:	Sealant and weatherproofing manufacturing.
Facility Address:	4475 EAST 175TH ST. CLEVELAND, OH 44128 Cuyahoga County
Permit:	P0120078, Permit-To-Install and Operate - Renewal
A public notice for the draft permit issuance was published in the Ohio EPA Weekly Review and appeared in the The Plain Dealer on 04/12/2016. The comment period ended on 05/12/2016.	
Hearing date (if held)	None
Hearing Public Notice Date (if different from draft public notice)	None

The following comments were received during the comment period specified. Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. PDF copies of the original comments in the format submitted are available upon request.

1. Topic: None

- a. Comment: None
- b. Response: None

We have not received any comments on the Draft permit that was issued on 3/30/2016 and we have not made any further changes to the permit recommendation.



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
TREMCO INC. - MAMECO DIVISION**

Facility ID:	1318002813
Permit Number:	P0120078
Permit Type:	Renewal
Issued:	5/16/2016
Effective:	5/16/2016
Expiration:	5/16/2021



Division of Air Pollution Control
Permit-to-Install and Operate
for
TREMCO INC. - MAMECO DIVISION

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Final Permit-to-Install and Operate
TREMCO INC. - MAMECO DIVISION
Permit Number: P0120078
Facility ID: 1318002813
Effective Date: 5/16/2016

Authorization

Facility ID: 1318002813
Application Number(s): A0055019
Permit Number: P0120078
Permit Description: FEPTIO renewal permit for emissions units P012, P013, P024, P027, and P028 which are blending vessels with powder dryers for the production of coatings and adhesives. Each emissions unit is vented to a dust collector for control of particulate emissions.
Permit Type: Renewal
Permit Fee: \$0.00
Issue Date: 5/16/2016
Effective Date: 5/16/2016
Expiration Date: 5/16/2021
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

TREMCO INC. - MAMECO DIVISION
4475 EAST 175TH ST.
CLEVELAND, OH 44128

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:

Cleveland Division of Air Quality
2nd Floor
75 Erievue Plaza
Cleveland, OH 44114
(216)664-2297

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: P0120078

Permit Description: FEPTIO renewal permit for emissions units P012, P013, P024, P027, and P028 which are blending vessels with powder dryers for the production of coatings and adhesives. Each emissions unit is vented to a dust collector for control of particulate emissions.

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

Emissions Unit ID:	P012
Company Equipment ID:	BLENDING AND STORAGE OF POLYURETHANE
Superseded Permit Number:	P0094422
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P013
Company Equipment ID:	STORAGE OF POLYURETHANE
Superseded Permit Number:	P0094422
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P024
Company Equipment ID:	K24
Superseded Permit Number:	P0116825
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P027
Company Equipment ID:	Kettle 16
Superseded Permit Number:	P0108271
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P028
Company Equipment ID:	K18
Superseded Permit Number:	P0108271
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
TREMCO INC. - MAMECO DIVISION
Permit Number: P0120078
Facility ID: 1318002813
Effective Date: 5/16/2016

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
TREMCO INC. - MAMECO DIVISION
Permit Number: P0120078
Facility ID: 1318002813
Effective Date: 5/16/2016

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) None.

C. Emissions Unit Terms and Conditions

1. P012, BLENDING AND STORAGE OF POLYURETHANE

Operations, Property and/or Equipment Description:

Kettle 20- 1050 gallon, blending and storage vessel with dedicated, hot oil fed powder dryer vented to a dust collector.

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)(5), d)(6), and d)(7)

(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)(2)d., d)(7), e)(4), f)(1)f., and f)(1)g.

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 13-04586 issued 11/30/06) This emissions unit was installed in 1998.	Volatile organic compound (VOC) emissions shall not exceed 3.50 lbs/batch and 1.28 tons/year. Particulate emissions (PE) shall not exceed 2.15 lbs/batch and 0.78 ton/year. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D). See b)(2)a. and b)(2)b. below
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
d.	OAC rule 3745-21-07(M)	See b)(2)c. below.
e.	OAC rule 3745-31-05(D) FEPTIO to avoid Title V and MACT	See b)(2)d. below.

(2) Additional Terms and Conditions

- a. This emissions unit operates using a batch cycle. The minimum batch size for this emissions unit is 400 gallons. The minimum amount of time for one batch cycle is 12 hours, with a maximum number of batches produced per year of 730.
- b. The short-term (lbs/batch) and annual (tons/year) emissions limitations for PE from this emissions unit were established based on potential to emit. Therefore, no record keeping or reporting requirements are necessary for these limitations.
- c. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit based on the fact that there is no chemical reaction taking place as there is only mixing occurring in this process. Additionally, there is no control device for VOC emissions, and there is no baking or heat curing of the material.
- d. The total allowable emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from all emissions units at this facility, (listed in b)(2)e. below) shall not exceed 9.5 tons/year for any individual HAP or 24.5 tons/year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation of emissions for this emissions unit plus the annual HAP contribution from all other emissions units at this facility (listed in b)(2)e. below).
- e. The current emissions units located at this facility are P004, P008, P009, P010, P011, P012, P013, P014, P015, P016, P017, P024, T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, B001, B002, B003, B004, B005, and 14 storage tanks (less than 10,000 gallons each) without separate EU identification numbers.

c) Operational Restrictions

- (1) None.

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

- (1) The permittee shall properly operate and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the dust collector during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the dust collector on a daily basis.

Whenever the monitored value for the pressure drop deviates from the range specified below, 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(s) the investigation was conducted;
- d. the names 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 below, 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 readings immediately after the corrective action was implemented; and
- k. the names of the personnel who performed the work.

Investigation and records required by this paragraph does 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 acceptable range for the pressure drop across the dust collector shall be based upon the manufacturer's specifications until such time as any required emissions testing is conducted.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range 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.

- (2) The permittee shall collect and record the following information each day for emissions unit P012:
- a. the company identification of each final product produced;
 - b. the vapor pressure of the loaded material for each batch (according to MSDS of each material), in psia;
 - c. the volume of the each material loaded, in gallons for each step of the batch;
 - d. the molecular weight of each material loaded, in lb/lb mole;
 - e. the final vapor pressure of the material, if heated, in psia;
 - f. the flow rate of the purge into the vessel, in ft³/min;
 - g. the temperature of the exhaust gas (conservatively determined by measuring the temperature of the final product);
 - h. the total emissions for each batch produced [calculated as shown by the equations and methodologies in f)(1)a.], in pounds; and
 - i. the annual summation of the VOC emissions [sum of (h)], in tons.
- (3) The permittee shall collect and record the following information each month for the entire facility [list of emissions units identified in b)(2)e.]:
- a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content contained in the final product for each HAP, in percent by weight;
 - c. the total of each individual HAP emissions from the emissions unit, in pounds or tons per month, using the following:
 - i. the individual HAP emissions will be determined by applying the equations* found in f)(1)a. for each individual HAP species or by multiplying the VOC emissions rate, as determined by the equations* found in f)(1)a. below for all blending vessels (P004, P008, P009, P010, P011, P012, P013, P014, P015, P016, P017, and P024);
 - ii. the latest version of U.S. EPA's TANKS or U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, Compilation of

Air Pollution Emission Factors, Section 7.1, Organic Liquid Storage Tanks (9/97) for all storage tanks (T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, and 14 exempt storage tanks) by the individual HAP content of each solvent contained in the final product for each HAP, in percent by weight;

- iii. in order to determine individual HAP emissions from boilers B001, B002, B003, B004, and B005, U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, External Combustion Sources, Section 1.4, Natural Gas Combustion (7/98) will be used;
- iv. any emission factors shall be updated based on the results of any new emissions data or stack testing data obtained.

*These equations are the calculation methodologies found in the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8".

- d. the total combined HAP emissions from the emissions unit in pounds or tons per month [the sum of (c) for all individual HAPs];
- e. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
- f. the updated rolling, 12-month summation of emissions for total combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar 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 CDAQ contact. This information does not have to be kept on an individual emission unit basis.

- (4) The permit to install 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 in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Xylene
TLV (mg/m³): 434.19
Maximum Hourly Emission Rate (lbs/hr): 3.50 lbs/hr

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 4776
MAGLC ($\mu\text{g}/\text{m}^3$): 10,338

- (5) Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emissions of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)", than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
- (6) If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.
- (7) The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emission unit will still satisfy the "Air Toxic Policy."
- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

e) Reporting Requirements

- (1) 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.
- (2) The permittee shall include in the annual PER the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.
- (3) The permittee shall include in the annual PER information that identifies all exceedances of the short-term (lbs/batch) and annual emission limitations for VOC.
- (4) 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. an identification of each month during which the rolling, 12-month individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) exceeded 9.5 tons, and the actual rolling, 12-month summation of each individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) for each such month; and
 - ii. an identification of each month during which the rolling, 12-month combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) exceeded 24.5 tons, and the actual rolling, 12-month summation of the combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) for each such month.
 - 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.

- (5) 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 Cleveland Division of Air Quality.
- (6) 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.

f) Testing Requirements

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

- a. Emission Limitation:

VOC emissions shall not exceed 3.50 lbs/batch

- Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(2) and the following equations taken from the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8."

Loading Loss Equation, EIIP Equation 8.4-1

$$E_{VOC} = \frac{(12.46)(S)(P)(M)(Q)}{(T)}$$

Where:

12.46 = Universal gas constant

S = Saturation factor

P = System vapor pressure, (psia)
M = Vapor molecular weight, (lb/lb mole)
Q = Volume of material loaded, (1000 gal)
T = Temperature of liquid loaded, (R)

Gas Sweep or Purge Equation, EIIP Equation 8.4-23

$$\text{Exp} = \left[\frac{(P_x)(F)(M_x)(60)(OH)}{(R)(T)} \right] * \left[\frac{(PT)}{(PT - \text{sum}P_x)} \right]$$

Where:

Exp = Emission of VOC species x, (lbs)
P_x = Partial pressure of VOC species x, (psia)
F = Flow rate into vessel, (ft³/min)
M_x = Molecular weight of VOC species x, (lb/lb-mole)
60 = Minutes per hour
OH = Hours of purge, (hr)
R = 10.73 gas constant
T = Temperature of exhaust gas, (R)
PT = Total system pressure, (psia)

Heatup Loss Equation, EIIP Equation 8.4-10

$$\text{Evoc} = \left\{ \frac{\left[\frac{\text{sum}(P_x)T_1}{(14.7 - \text{sum}(P_x)T_1)} \right] + \left[\frac{\text{sum}(P_x)T_2}{(14.7 - \text{sum}(P_x)T_2)} \right]}{2} \right\} * (n)(M_a)$$

Where:

Evoc = VOC emissions from heat up, (lbs)
(P_x)T₁ = Initial partial pressure of VOC species x at T₁, (psia)
(P_x)T₂ = Final partial pressure of VOC species x at T₂, (psia)
M_a = Vapor molecular weight, (lb/lb-mole)
n = Number of pound-moles of gas displaced, (lb-mole)

$$n = \left(\frac{V}{R} \right) * \left[\left(\frac{Pa_1}{T_1} \right) - \left(\frac{Pa_2}{T_2} \right) \right] = \left(\frac{V}{R} \right) * \left[\left(\frac{14.7 - (P_x)T_1}{T_1} \right) - \left(\frac{14.7 - (P_x)T_2}{T_2} \right) \right]$$

Where:

V = volume of free space in the vessel, ft³
R = 10.73 gas constant
Pa₁ = 14.7 - (P_x)T₁
Pa₂ = 14.7 - (P_x)T₂
T₁ = R (F + 460)
T₂ = R (F + 460)

The batch cycle steps for initial kettle inerting, kettle washing, loading raws, and packaging shall use the loading loss EIIP equation 8.4-1. The batch cycle steps for purging from powder loading and nitrogen line purging shall use the gas sweep or purge EIIP Equation 8.4-23. The batch cycle steps for blending heatup shall use the heatup loss EIIP Equation 8.4-10. Any contributing fugitive emissions shall be calculated using SOCM1 emission factors found in "Protocol

for Equipment Leak Emission Estimates" EPA453/R-95-017, November 1995. Any additional batch cycle steps shall be calculated using the equations contained in the STAPPA/ALAPCO-EPA documents, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 and/or Methods for Estimating Air emissions from Chemical Manufacturing Facilities, Volume II: Chapter 16." The short-term (lb/batch) emissions shall be determined by summing the values calculated from all batch steps and adding any contributing fugitive emissions calculated.

If required by the Ohio EPA or the CDAQ, compliance with the VOC emission limitation shall be determined through emission testing conducted in accordance with U.S. EPA Method 25 or 25A of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

b. Emission Limitation:

VOC emissions shall not exceed 1.28 tons/year

Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(6) including the equations and methodologies found in f)(1)a..

c. Emission Limitation:

PE shall not exceed 2.15 lbs/batch.

Applicable Compliance Method:

Compliance with the mass emissions limitation shall be determined by using the following one-time calculation for potential to emit:

$$(4300 \text{ lbs PE/batch}) \times (1 - 0.95) \times (1 - 0.99) = 2.15 \text{ lbs PE/batch}$$

Where:

4300 lbs = maximum process feed rate

0.95 = conservative assumption of the amount of solids captured by solvent

0.99 = conservative control efficiency of dust collector

If required by Ohio EPA or the CDAQ, compliance with the PE limitation shall be determined through emission testing conducted in accordance with U.S. EPA Methods 1 through 5 of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

d. Emission Limitation:

PE shall not exceed 0.78 ton/year.

Applicable Compliance Method:

The annual limitation was developed by multiplying the lbs/batch limitation by the maximum annual production rate of 730 batches/year, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lbs/batch limitation, compliance will also be shown with the annual limitation.

e. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

f. Emission Limitation:

9.5 tons individual HAPs/year for the list of emissions units in b)(2)e), as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g. Emission Limitation:

24.5 tons combined HAPs/year for the list of emissions units in b)(2)e., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g) Miscellaneous Requirements

- (1) None.

2. P013, BLENDING AND STORAGE OF POLYURETHANE COATINGS

Operations, Property and/or Equipment Description:

Kettle 22 - 1050 gallon blending and storage vessel with dedicated, hot oil powder dryer, venting to a dust collector

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)(3), d)(4), d)(5), and d)(6)

(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)(2)c., d)(6), e)(3), f)(1)c., and 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 3745-17-07(A) (PTI 13-04586 issued 11/30/06)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.
b.	OAC rule 3745-17-11(B)	Particulate emissions (PE) shall not exceed 6.85 lbs/hour.
c.	OAC rule 3745-21-07(M)	See b)(2) b. below.
d.	OAC rule 3745-31-05(D) FEPTIO to avoid Title V and MACT	See b)(2)c. below.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	VOC emissions shall not exceed 3.80 lbs/batch and 2.08 tons per year (TPY). PE shall not exceed 3.75 TPY. See b)(2)e. below.
f.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/06 This emissions unit was installed in 2006.	See b)(2)f. below.

(2) Additional Terms and Conditions

- a. This emissions unit operates using a batch cycle. The minimum batch size for this emissions unit is 400 gallons. The minimum amount of time for one batch cycle is 8 hours, with a maximum number of batches produced per year of 1095.
- b. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit based on the fact that there is no chemical reaction taking place; there is only mixing occurring in this process. Additionally, there is no control device for the VOC emissions and there is no baking or heat curing of the material.
- c. The total allowable emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from all emissions units at this facility, (listed in b)(2)d. below) shall not exceed 9.5 tons/year for any individual HAP or 24.5 tons/year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation of emissions for this emissions unit plus the annual HAP contribution from all other emissions units at this facility (listed in b)(2)d. below).
- d. The current emissions units located at this facility are, P004, P008, P009, P010, P011, P012, P013, P014, P015, P016, P017, P024 T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, B001, B002, B003, B004, B005, and 14 storage tanks (less than 10,000 gallons each) without separate EU identification numbers.
- e. 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 regulations 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 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 3745-31-05, then these emission limits/control measures no longer apply.

- f. 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.
 - i. The BAT requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for PE is less than 10 tons/year taking into account the federally enforceable rule limit of 6.85 lbs/hour under OAC rule 3745-17-11(B). The calculated annual emissions rate was determined by multiplying the federally enforceable rule limit (6.85 lbs/hour) by the maximum annual number of hours solids are loaded (1095 hours) and dividing by 2000 lbs/ton.
 - ii. 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 emissions are less than 10 tons/year.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the dust collector during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the the pressure drop, in inches of water, across the dust collector on a daily basis.

Whenever the monitored value for the pressure drop deviates from the range specified below, 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(s) the investigation was conducted;
- d. the names 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 below, unless the permittee determines that a 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 readings immediately after the corrective action was implemented; and
- k. the names of the personnel who performed the work.

Investigation and records required by this paragraph does 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 acceptable range for the pressure drop across the dust collector shall be based upon the manufacturer's specifications until such time as any required emissions testing is conducted.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range 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.

(2) The permittee shall collect and record the following information each month for the entire facility (list of emissions units identified in b)(2)d.):

- a. the name and identification number of each HAP containing material employed;
- b. the individual HAP content contained in the final product for each HAP, in percent by weight;
- c. the total of each individual HAP emissions from the emissions unit, in pounds or tons per month, using the following:
 - i. the individual HAP emissions will be determined by applying the equations* found in f)(1)a. for each individual HAP species or by multiplying the VOC emissions rate, as determined by the equations*

found in f)(1)a. below for all blending vessels (P004, P008, P009, P010, P011, P012, P013, P014, P015, P016, P017, and P024);

- ii. the latest version of U.S. EPA's TANKS or U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, Compilation of Air Pollution Emission Factors, Section 7.1, Organic Liquid Storage Tanks (9/97) for all storage tanks (T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, and 14 exempt storage tanks) by the individual HAP content of each solvent contained in the final product for each HAP, in percent by weight;
- iii. in order to determine individual HAP emissions from boilers B001, B002, B003, B004, and B005, U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, External Combustion Sources, Section 1.4, Natural Gas Combustion (7/98) will be used;
- iv. any emission factors shall be updated based on the results of any new emissions data or stack testing data obtained.

*These equations are the calculation methodologies found in the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8";

- d. the total combined HAP emissions from the emissions unit in pounds or tons per month [the sum of (c) for all individual HAPs];
- e. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.; and
- f. the updated rolling, 12-month summation of emissions for total combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar 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 CDAQ contact. This information does not have to be kept on an individual emission unit basis.

- (3) The permit to install for this emissions unit, P013, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level

Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Xylene
TLV (mg/m³): 434.19
Maximum Hourly Emission Rate (lbs/hr): 4.00 lbs/hr
Predicted 1-Hour Maximum Ground-Level Concentration (µg/m³): 954.6
MAGLC (µg/m³): 10,338

- (4) Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emissions of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)", than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
- (5) If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.
- (6) The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emission unit will still satisfy the "Air Toxic Policy."
- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

e) Reporting Requirements

- (1) 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.
- (2) The permittee shall include in the annual PER the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.
- (3) 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. an identification of each month during which the rolling, 12-month individual HAP emissions rate (from the list of emissions units referenced in b)(2)d.) exceeded 9.5 tons, and the actual rolling, 12-month summation of each individual HAP emissions rate (from the list of emissions units referenced in b)(2)d.) for each such month; and
 - ii. an identification of each month during which the rolling, 12-month combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)d.) exceeded 24.5 tons, and the actual rolling, 12-month summation of the combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)d.) for each such month.
 - 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 Cleveland Division of Air Quality.

(4) 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.

f) Testing Requirements

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

a. Emission Limitation:

PE shall not exceed 6.85 lbs/hour.

Applicable Compliance Method:

Compliance with the PE limitation shall be determined through emission testing conducted in accordance with U.S. EPA Methods 1 through 5 of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

b. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

c. Emission Limitation:

9.5 tons individual HAPs/year for the list of emissions units in b)(2)d., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(2).

d. Emission Limitation:

24.5 tons combined HAPs/year for the list of emissions units in b)(2)d., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(2).

e. Emission Limitation:

VOC emissions shall not exceed 3.80 lbs/batch

Applicable Compliance Method:

The pound per batch emission rate was established at potential to emit based on the calculations in g) below.

f. Emission Limitation:

VOC emissions shall not exceed 2.08 TPY

Applicable Compliance Method:

The ton per year emission rate was established at potential to emit based the calculations in g) below.

g. Emission Limitation:

PE shall not exceed 3.75 TPY

Applicable Compliance Method:

The calculated annual emissions rate was determined by multiplying the federally enforceable rule limit (6.85 lbs/hour) by the maximum annual number of hours solids are loaded (1095 hours) and dividing by 2000 lbs/ton.

g) Miscellaneous Requirements

- (1) The uncontrolled potential to emit for VOC emissions for this emissions unit was determined as follows:

- Step 1) Initial kettle inerting
- Step 2) Kettle wash (loading loss)
- Step 3) Loading raws (loading loss)
- Step 4) Purge from powder loading (purge loss)
- Step 5) Blending heat-up (heat-up loss)
- Step 6) Nitrogen line purging (purge loss)
- Step 7) Packaging (loading loss)
- Step 8) Fugitive

The following equations were taken from the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8".

Calculation of Steps:

Step 1)

Loading Loss Equation, EIIP Equation 8.4-1

$$E_{\text{VOC}} = \frac{(12.46)(S)(P)(M)(Q)}{(T)} = \frac{(12.46)(1.0)(0.172)(106.17)(0.825)}{(540)} = 0.348 \text{ lb}$$

Where:

12.46 = Universal gas constant

S = Saturation factor = 1.0

P = System vapor pressure, (psia) = 0.172

M = Vapor molecular weight, (lb/lb mole) = 106.17

Q = Volume of material loaded, (1000 gal) = 1.125 (assumes that 75% of volume is displaced with N₂)

T = Temperature of liquid loaded, (R) = 540 (460 + 80)

Step 2)

$$E_{\text{VOC}} = \frac{(12.46)(S)(P)(M)(Q)}{(T)} = \frac{(12.46)(1.45)(0.172)(106.17)(0.12)}{(540)} = 0.073 \text{ lb}$$

Where:

12.46 = Universal gas constant

S = Saturation factor = 1.45

P = System vapor pressure, (psia) aka VP of material = 0.172

M = Vapor molecular weight, (lb/lb mole) = 106.17

Q = Volume of material loaded, (1000 gal) = 0.12 (120 gallons loaded)

T = Temperature of liquid loaded, (R) = 540 (460 + 80)

Step 3)

$$E_{\text{VOC}} = \frac{(12.46)(S)(P)(M)(Q)}{(T)} = \frac{(12.46)(1.45)(0.172)(106.17)(1.5)}{(540)} = 0.916 \text{ lb}$$

Where:

12.46 = Universal gas constant

S = Saturation factor = 1.45

P = System vapor pressure, (psia) aka VP of material = 0.172

M = Vapor molecular weight, (lb/lb mole) = 106.17

Q = Volume of material loaded, (1000 gal) = 1.5 (1500 gallons loaded)

T = Temperature of liquid loaded, (R) = 540 (460 + 80)

Step 4)

Gas Sweep or Purge Equation, EIIP Equation 8.4-23

$$\text{Exp} = \left[\frac{(P_x)(F)(M_x)(60)(OH)}{(R)(T)} \right] * \left[\frac{(PT)}{(PT - \text{sum}P_x)} \right]$$

$$\text{Exp} = \left[\frac{(0.172)(10)(106.17)(60)(0.25)}{(10.73)(540)} \right] * \left[\frac{(14.7)}{(14.7 - 0.172)} \right] = 0.478 \text{ lb}$$

Where:

Exp = Emission of VOC species x, (lbs)

P_x = Partial pressure of VOC species x, (psia) = 0.172

F = Flow rate into vessel, (ft³/min) = 10

M_x = Molecular weight of VOC species x, (lb/lb-mole) = 106.17

60 = Minutes per hour

OH = Hours of purge, (hr) = 0.25

R = 10.73 gas constant

T = Temperature of exhaust gas, (R) = 540 (460 + 80)

PT = Total system pressure, (psia) = 14.7

Step 5)

Heatup Loss Equation, EIIP Equation 8.4-10

$$E_{\text{VOC}} = \left\{ \frac{\left[\frac{\text{sum}(P_x)T_1}{(14.7 - \text{sum}(P_x)T_1)} \right] + \left[\frac{\text{sum}(P_x)T_2}{(14.7 - \text{sum}(P_x)T_2)} \right]}{2} \right\} * (n)(Ma)$$

$$E_{\text{VOC}} = \left\{ \frac{\left[\frac{0.172}{(14.7 - 0.172)} \right] + \left[\frac{2.32}{(14.7 - 2.32)} \right]}{2} \right\} * (0.00)(106.17) = 0.00 \text{ lb}$$

$$n = \left(\frac{0.00}{10.73} \right) * \left[\left(\frac{14.7 - 0.172}{540} \right) - \left(\frac{14.7 - 2.32}{640} \right) \right] = 0.00$$

Where:

E_{voc} = VOC emissions from heat up, (lbs)

(Px)T1 = Initial partial pressure of VOC species x at T1, (psia) = 0.172
(Px)T2 = Final partial pressure of VOC species x at T2, (psia) = 2.32
n = Number of pound-moles of gas displaced, (lb-mole)

$$n = \left(\frac{V}{R}\right) * \left[\left(\frac{Pa1}{T1}\right) - \left(\frac{Pa2}{T2}\right)\right] = \left(\frac{V}{R}\right) * \left[\left(\frac{14.7 - (Px)T1}{T1}\right) - \left(\frac{14.7 - (Px)T2}{T2}\right)\right]$$

where:

V = volume of free space in vessel, ft³

V = (1500 - 1500) = 0 gallons * 0.13368 cubic ft/gal = 0.00 ft³

R = 10.73 gas constant

Pa1 = 14.7 - (Px)T1

Pa2 = 14.7 - (Px)T2

T1 = 540 (460 + 80)

T2 = 640 (460 + 180)

Ma = Vapor molecular weight, (lb/lb-mole) = 106.17

Step 6)

Gas Sweep or Purge Equation, EIIP Equation 8.4-23

$$\text{Exp} = \left[\frac{(Px)(F)(Mx)(60)(OH)}{(R)(T)}\right] * \left[\frac{(PT)}{(PT - \text{sum}Px)}\right]$$

$$\text{Exp} = \left[\frac{(0.323)(5)(106.17)(60)(0.1667)}{(10.73)(560)}\right] * \left[\frac{(14.7)}{(14.7 - 0.323)}\right] = 0.29 \text{ lb}$$

Where:

Exp = Emission of VOC species x, (lbs)

Px = Partial pressure of VOC species x, (psia) = 0.323

F = Flow rate into vessel, (ft³/min) = 5

Mx = Molecular weight of VOC species x, (lb/lb-mole) 106.17

60 = Minutes per hour

OH = Hours of purge, (hr) = 0.1667

R = 10.73 gas constant

T = Temperature of exhaust gas, (R) = 560 (460 + 100)

PT = Total system pressure, (psia) 14.7

Step 7)

Loading Loss Equation, EIIP Equation 8.4-1

$$E_{\text{VOC}} = \frac{(12.46)(S)(P)(M)(Q)}{(T)} = \frac{(12.46)(1.0)(0.445)(106.17)(1.5)}{(570)} = 1.549 \text{ lbs}$$

Where:

12.46 = Universal gas constant

S = Saturation factor = 1.0

P = System vapor pressure, (psia) = 0.445

M = Vapor molecular weight, (lb/lb mole) = 106.17



Q = Volume of material loaded, (1000 gal) = 1.5 (1500 gallons)
T = Temperature of liquid loaded, (R) = 570 (460 + 110)

Step 8)

SOCMI fugitive emission factors (e.f.) were taken from EPA453/R-95-017 "Protocol for Equipment Leak Emission Estimates"

Pumps = 1 (e.f. = 0.0041 kg/hr);

Valves, gas = 9 (e.f. = 0.00261 kg/hr);

Valves, liquid = 7 (e.f. = 0.00252 kg/hr);

Flanges, gas = 13 (e.f. = 0.00234 kg/hr);

Flanges, liquid = 6 (e.f. = 0.00108 kg/hr);

Open Ended Lines = 2 (e.f. = 0.0034 kg/hr)

$[(1 \text{ Pump})(0.0041 \text{ kg/hr}) + (9 \text{ Valves, gas})(0.00261 \text{ kg/hr}) + (7 \text{ Valves, liquid})(0.00252 \text{ kg/hr}) + (13 \text{ Flanges, gas})(0.00234 \text{ kg/hr}) + (6 \text{ Flanges, liquid})(0.00108 \text{ kg/hr}) + (2 \text{ Open Ended Lines})(0.0034 \text{ kg/hr})] * (0.09) = 0.008 \text{ kg/hr}$

To convert to lbs/hr:

$(0.008 \text{ kg/hr}) * (2.2046 \text{ lbs/kg}) = 0.0176 \text{ lb/hr fugitives}$

$\text{Fugitives} = (0.0176 \text{ lb/hr}) * (8 \text{ hrs/batch}) = 0.14 \text{ lb/batch}$

TOTALS FROM ABOVE:

$\text{Emissions (lbs)} = \text{Step 1} + \text{Step 2} + \text{Step 3} + \text{Step 4} + \text{Step 5} + \text{Step 6} + \text{Step 7} + \text{Step 8}$
 $= 0.35 + 0.07 + 0.92 + 0.48 + 0.00 + 0.29 + 1.55 + 0.14$
 $= 3.80 \text{ lbs/batch}$

$(3.80 \text{ lbs/batch}) * (1095 \text{ batches/yr}) * (1 \text{ ton}/2000 \text{ lbs}) = 2.08 \text{ tons/yr}$

3. P024, K24

Operations, Property and/or Equipment Description:

Kettle 24, 1100 gallon blending vessel with powder dryer, vented to a dust collector (located outdoors) at the end of the blending process (during the process, when solids are added, there is a fabric filter used for product recovery that is vented indoors).

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)(5), d)(6), 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)e., b)(2)d., d)(3), e)(3), f)(1)e., and f)(1)f.

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.	ORC 3704.03(T) OAC rule 3745-31-05(A)(3), as effective 6/30/2008 FEPTIO P0116825 issued 9/3/2014	See b)(2)b., b)(2)c., and b)(2)f. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 6/30/2008	See b)(2)g. below.
c.	OAC rule 3745-17-07(A)	Visible particulate emissions from the baghouse stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) shall not exceed 6.85 lbs/hour.
e.	OAC rule 3745-31-05(D) FEPTIO to avoid Title V and MACT	See b)(2)d. below.

(2) Additional Terms and Conditions

- a. This emissions unit operates using a batch cycle. The minimum batch size for this emissions unit is 400 gallons. The minimum amount of time for one batch cycle is 8 hours, with a maximum number of batches produced per year of 1095.
- b. Particulate emissions from P024 shall not exceed 0.10 ton per month averaged over a 12-month rolling period.
- c. VOC emissions from P024 shall not exceed 0.26 ton per month averaged over a 12-month rolling period.
- d. The total allowable emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from all emissions units at this facility, (listed in b)(2)e. below) shall not exceed 9.5 tons/year for any individual HAP or 24.5 tons/year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation of emissions for this emissions unit plus the annual HAP contribution from all other emissions units at this facility (listed in b)(2)e. below).
- e. The current emissions units located at this facility are, P004, P008, P009, P011, P012, P013, P014, P015, P016, P017, P024, P027, P028, P029, T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T043, B001, B002, B004, B005, and 14 storage tanks (less than 10,000 gallons each) without separate EU identification numbers.
- f. 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 regulations 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 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 3745-31-05, then these emission limits/control measures no longer apply.

g. 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.

- i. The BAT requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the calculated annual emission rate for PE is less than 10 tons/year taking into account the federally enforceable rule limit of 6.85 lbs/hour under OAC rule 3745-17-11(B). The calculated annual emissions rate was determined by multiplying the federally enforceable rule limit (6.85 lbs/hour) by the maximum annual number of hours solids are loaded (1095 batches/year @ 1 hr/batch) and dividing by 2000 lbs/ton.
- ii. 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 emissions are less than 10 tons/year.

c) Operational Restrictions

- (1) The emissions from this emissions unit shall be vented to a dust collector at all times the emissions unit is in operation.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate and maintain equipment to continuously monitor the pressure drop, in inches of water, across the dust collector during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the the pressure drop, in inches of water, across the dust collector on a daily basis.

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.

The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications, until such time as any required performance testing is conducted and an alternative pressure drop range and/or limit is established.

This range or limit on the pressure drop across the baghouse 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.

- (2) The permittee shall collect and record the following information each day for emissions unit P024:
- a. the company identification of each final product produced;
 - b. the vapor pressure of the loaded material for each batch (according to MSDS of each material), in psia;
 - c. the volume of each material loaded, in gallons, for each step of the batch;
 - d. the molecular weight of each material loaded, in lb/lb mole;
 - e. the final vapor pressure of the material, if heated, in psia;
 - f. the flow rate of the purge into the vessel, in ft³/min;
 - g. the temperature of the exhaust gas (conservatively determined by measuring the temperature of the final product);

- h. the total emissions for each batch produced (calculated as shown by the equations and methodologies in f)(1)b., in pounds; and
 - i. the annual summation of the VOC emissions [sum of (h)], in tons.
- (3) The permittee shall collect and record the following information each month for the entire facility (list of emissions units identified in b)(2)e.):
- a. the name and identification number of each HAP containing material employed;
 - b. the individual HAP content contained in the final product for each HAP, in percent by weight;
 - c. the total of each individual HAP emissions from the emissions unit, in pounds or tons per month, using the following:
 - i. the individual HAP emissions will be determined by applying the equations* found in f)(1)b. for each individual HAP species or by multiplying the VOC emissions rate, as determined by the equations* found in f)(1)b. below for all blending vessels (P004, P008, P009, P011, P012, P013, P014, P015, P016, P017, P024, P027, P028, and P029);
 - ii. the latest version of U.S. EPA's TANKS or U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, Compilation of Air Pollution Emission Factors, Section 7.1, Organic Liquid Storage Tanks (9/97) for all storage tanks (T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T043, and 14 exempt storage tanks) by the individual HAP content of each solvent contained in the final product for each HAP, in percent by weight;
 - iii. in order to determine individual HAP emissions from boilers B001, B002, B004, and B005, U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, External Combustion Sources, Section 1.4, Natural Gas Combustion (7/98) will be used;
 - iv. any emission factors shall be updated based on the results of any new emissions data or stack testing data obtained.
- *These equations are the calculation methodologies found in the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8";
- d. the total combined HAP emissions from the emissions unit in pounds or tons per month [the sum of (c) for all individual HAPs];
 - e. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.; and

- f. the updated rolling, 12-month summation of emissions for total combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar 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 Cleveland DAQ contact. This information does not have to be kept on an individual emission unit basis.

- (4) The FEPTIO application for this/these emissions unit(s), P024, 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/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: Xylene
TLV (mg/m³): 434.19
Maximum Hourly Emission Rate (lbs/hr): 5.70
Predicted 1-Hour Maximum Ground-Level Concentration (µg/m³): 599.0
MAGLC (µg/m³): 10,338

The permittee, has demonstrated that emissions of Xylene, from emissions unit(s) P024, 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).

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:

- e. 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;
- f. 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
- g. 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 FEPTIO 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.

- (5) 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.
- (6) 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) 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.
 - (2) The permittee shall include in the annual PER the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time (start time and date, and end time and date) when the pressure drop across the baghouse was outside of the range specified by the manufacturer and outside of the acceptable range following any required compliance demonstration; and
 - b. 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 baghouse.
 - (3) 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. an identification of each month during which the rolling, 12-month individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) exceeded 9.5 tons, and the actual rolling, 12-month summation of each individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) for each such month; and
 - ii. an identification of each month during which the rolling, 12-month combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) exceeded 24.5 tons, and the actual rolling, 12-month summation of the combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) for each such month.
- 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 Cleveland Division of Air Quality.

- (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.
- (5) 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.

f) Testing Requirements

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

a. Emission Limitation:

Particulate emissions from P024 shall not exceed 0.10 ton per month averaged over a 12-month rolling period.

Applicable Compliance Method:

The monthly PE limit has been established according to the following emission calculation:

$$4300 \text{ lbs/batch} * (1-0.95) * (1-0.99) * 1095 \text{ batch/yr} * \text{ton}/2000 \text{ lbs} * \text{yr}/12 \text{ months} = 0.10 \text{ ton PE/month}$$

Where:

- 4300 lbs = maximum process feed rate
- 0.95 = conservative assumption of the amount of solids captured by solvent
- 0.99 = conservative control efficiency of the baghouse

b. Emission Limitation:

VOC emissions from P024 shall not exceed 0.26 ton per month averaged over a 12-month rolling period.

Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(2) and the following equations taken from the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8."

Loading Loss Equation, EIIP Equation 8.4-1

$$E_{\text{VOC}} = \frac{(12.46)(S)(P)(M)(Q)}{(T)}$$

Where:

- 12.46 = Universal gas constant
- S = Saturation factor
- P = System vapor pressure, (psia)
- M = Vapor molecular weight, (lb/lb mole)

Q = Volume of material loaded, (1000 gal)
T = Temperature of liquid loaded, (R)

Gas Sweep or Purge Equation, EIIP Equation 8.4-23

$$\text{Exp} = \left[\frac{(P_x)(F)(M_x)(60)(OH)}{(R)(T)} \right] * \left[\frac{(PT)}{(PT - \text{sum}P_x)} \right]$$

Where:

Exp = Emission of VOC species x, (lbs)
P_x = Partial pressure of VOC species x, (psia)
F = Flow rate into vessel, (ft³/min)
M_x = Molecular weight of VOC species x, (lb/lb-mole)
60 = Minutes per hour
OH = Hours of purge, (hr)
R = 10.73 gas constant
T = Temperature of exhaust gas, (R)
PT = Total system pressure, (psia)

Heatup Loss Equation, EIIP Equation 8.4-10

$$\text{Evoc} = \left\{ \frac{\left[\frac{\text{sum}(P_x)T_1}{(14.7 - \text{sum}(P_x)T_1)} \right] + \left[\frac{\text{sum}(P_x)T_2}{(14.7 - \text{sum}(P_x)T_2)} \right]}{2} \right\} * (n)(M_a)$$

Where:

Evoc = VOC emissions from heat up, (lbs)
(P_x)T₁ = Initial partial pressure of VOC species x at T₁, (psia)
(P_x)T₂ = Final partial pressure of VOC species x at T₂, (psia)
M_a = Vapor molecular weight, (lb/lb-mole)
n = Number of pound-moles of gas displaced, (lb-mole)

$$n = \left(\frac{V}{R} \right) * \left[\left(\frac{Pa_1}{T_1} \right) - \left(\frac{Pa_2}{T_2} \right) \right] = \left(\frac{V}{R} \right) * \left[\left(\frac{14.7 - (P_x)T_1}{T_1} \right) - \left(\frac{14.7 - (P_x)T_2}{T_2} \right) \right]$$

Where:

V = volume of free space in the vessel, ft³
R = 10.73 gas constant
Pa₁ = 14.7 - (P_x)T₁
Pa₂ = 14.7 - (P_x)T₂
T₁ = R (F + 460)
T₂ = R (F + 460)

The batch cycle steps for initial kettle inerting, kettle washing, loading raws, and packaging shall use the loading loss EIIP equation 8.4-1. The batch cycle steps for purging from powder loading and nitrogen line purging shall use the gas sweep or purge EIIP Equation 8.4-23. The batch cycle steps for blending heatup shall use the heatup loss EIIP Equation 8.4-10. Any contributing fugitive emissions shall be calculated using SOCM emission factors found in "Protocol for Equipment Leak Emission Estimates" EPA453/R-95-017, November 1995.

Any additional batch cycle steps shall be calculated using the equations contained in the STAPPA/ALAPCO-EPA documents, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 and/or Methods for Estimating Air emissions from Chemical Manufacturing Facilities, Volume II: Chapter 16." The short-term (lb/batch) emissions shall be determined by summing the values calculated from all batch steps and adding any contributing fugitive emissions calculated.

c. Emission Limitation:

Visible particulate emissions from the baghouse stack shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9 of 40 CFR Part 60, Appendix A.

d. Emission Limitation:

PE shall not exceed 6.85 lbs/hour.

Applicable Compliance Method:

If required, compliance with the PE limitation shall be determined through emission testing conducted in accordance with U.S. EPA Methods 1 through 5 of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

e. Emission Limitation:

9.5 tons individual HAPs/year for the list of emissions units in b)(2)e., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

f. Emission Limitation:

24.5 tons combined HAPs/year for the list of emissions units in b)(2)e., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 2006 and declared DeMinimis. It will now be repurposed for solvent coatings and adhesive mixing.

4. P027, Kettle 16

Operations, Property and/or Equipment Description:

The process consists of a 1100 gallon blending vessel and a powder dryer. Liquid raw materials are added to the blender. Solids are dried in the drier and then added to the blender and mixed. The finished product is then pumped into pails or drums. The blender and powder drier are vented to a cartridge baghouse for particulate control. (P010 has been separated into P027 & P028)

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)(2)d., d)(7), e)(4), f)(1)f., and f)(1)g.

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 13-2917 issued 9/27/95) This emissions unit was installed in 1994.	<p>Volatile organic compound (VOC) emissions shall not exceed 3.47 lbs/batch and 1.90 tons/year.</p> <p>Particulate emissions (PE) shall not exceed 4.78 lbs/batch and 2.62 tons/year.</p> <p>Visible particulate emissions from the baghouse stack shall not exceed 5% opacity as a 6-minute average.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D). See b)(2)a. and b)(2)b. below.
b.	OAC rule 3745-17-07(A)	The visible particulate emission limitation specified by this rule is less stringent than the visible particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-11(B)	The particulate emission limitation specified by this rule is less stringent than the particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
d.	OAC rule 3745-21-07(M)	See b)(2)c. below.
e.	OAC rule 3745-31-05(D) FEPTIO to avoid Title V and MACT	See b)(2)d. below.

(2) Additional Terms and Conditions

- a. This emissions unit operates using a batch cycle. The standard batch size for this emissions unit is 900 gallons. The minimum amount of time for one batch cycle is 6.25 hours, with a maximum number of batches produced per year of 1095.
- b. The short-term (lbs/batch) and annual (tons/year) emissions limitations for PE from this emissions unit were established based on potential to emit. Therefore, no record keeping or reporting requirements are necessary for these limitations.
- c. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit based on the fact that there is no chemical reaction taking place; there is only mixing occurring in this process. Additionally, there is no control device for the VOC emissions and there is no baking or heat curing of the material.
- d. The total allowable emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from all emissions units at this facility, (listed in b)(2)e. below) shall not exceed 9.5 tons/year for any individual HAP or 24.5 tons/year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation of emissions for this emissions unit plus the annual HAP contribution from all other emissions units at this facility (listed in b)(2)e. below).

- e. The current emissions units located at this facility are P004, P008, P009, P011, P012, P013, P014, P015, P016, P017, P024, P027, P028, T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, B001, B002, B003, B004, B005, and 14 storage tanks (less than 10,000 gallons each) without separate EU identification numbers.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the dust collector during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the dust collector on a daily basis.

Whenever the monitored value for the pressure drop deviates from the range specified below, 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(s) the investigation was conducted;
- d. the names of the personnel who conducted the investigation;
- 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 below, 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 readings immediately after the corrective action was implemented; and
- k. the names of the personnel who performed the work.

Investigation and records required by this paragraph does 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 acceptable range for the pressure drop across the dust collector shall be based upon the manufacturer's specifications until such time as any required emissions testing is conducted.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range 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.

- (2) The permittee shall collect and record the following information each day for emissions unit P027:
 - a. the company identification of each final product produced;
 - b. the vapor pressure of the loaded material for each batch (according to MSDS of each material), in psia;
 - c. the volume of the each material loaded, in gallons, for each step of the batch;
 - d. the molecular weight of each material loaded, in lb/lb mole;
 - e. the final vapor pressure of the material, if heated, in psia;
 - f. the flow rate of the purge into the vessel, in ft³/min;
 - g. the temperature of the exhaust gas (conservatively determined by measuring the temperature of the final product);
 - h. the total emissions for each batch produced (calculated as shown by the equations and methodologies in f)(1)a., in pounds; and
 - i. the annual summation of the VOC emissions [sum of (h)], in tons.
- (3) The permittee shall collect and record the following information each month for the entire facility (list of emissions units identified in b)(2)e.):
 - a. the name and identification number of each HAP containing material employed;

- b. the individual HAP content contained in the final product for each HAP, in percent by weight;
- c. the total of each individual HAP emissions from the emissions unit in, pounds or tons per month, using the following:
 - i. the individual HAP emissions will be determined by applying the equations* found in f)(1)a. for each individual HAP species or by multiplying the VOC emissions rate, as determined by the equations* found in f)(1)a. below for all blending vessels (P004, P008, P009, P011, P012, P013, P014, P015, P016, P017, P024, P027, and P028);
 - ii. the latest version of U.S. EPA's TANKS or U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, Compilation of Air Pollution Emission Factors, Section 7.1, Organic Liquid Storage Tanks (9/97) for all storage tanks (T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, and 14 exempt storage tanks) by the individual HAP content of each solvent contained in the final product for each HAP, in percent by weight;
 - iii. in order to determine individual HAP emissions from boilers B001, B002, B003, B004, and B005, U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, External Combustion Sources, Section 1.4, Natural Gas Combustion (7/98) will be used;
 - iv. any emission factors shall be updated based on the results of any new emissions data or stack testing data obtained.

*These equations are the calculation methodologies found in the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8";

- d. the total combined HAP emissions from the emissions unit in pounds or tons per month [the sum of (c) for all individual HAPs];
- e. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
- f. the updated rolling, 12-month summation of emissions for total combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar 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 CDAQ contact. This information does not have to be kept on an individual emission unit basis.

e) Reporting Requirements

- (1) 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.
- (2) The permittee shall include in the annual PER the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.
- (3) The permittee shall include in the annual PER information that identifies all exceedances of the short-term (lbs/batch) and annual emission limitations for VOC.
- (4) 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. an identification of each month during which the rolling, 12-month individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) exceeded 9.5 tons, and the actual rolling, 12-month summation of each individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) for each such month; and
 - ii. an identification of each month during which the rolling, 12-month combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) exceeded 24.5 tons, and the actual rolling, 12-month summation of the combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) for each such month.
 - 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 Cleveland Division of Air Quality.

- (5) 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.

f) Testing Requirements

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

- a. Emission Limitation:

VOC emissions shall not exceed 3.47 lbs/batch

- Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(2) and the following equations taken from the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8."

Loading Loss Equation, EIIP Equation 8.4-1

$$E_{VOC} = \frac{(12.46)(S)(P)(M)(Q)}{(T)}$$

Where:

- 12.46 = Universal gas constant
- S = Saturation factor

P = System vapor pressure, (psia)
M = Vapor molecular weight, (lb/lb mole)
Q = Volume of material loaded, (1000 gal)
T = Temperature of liquid loaded, (R)

Gas Sweep or Purge Equation, EIIP Equation 8.4-23

$$\text{Exp} = \left[\frac{(P_x)(F)(M_x)(60)(OH)}{(R)(T)} \right] * \left[\frac{(PT)}{(PT - \text{sum}P_x)} \right]$$

Where:

Exp = Emission of VOC species x, (lbs)
P_x = Partial pressure of VOC species x, (psia)
F = Flow rate into vessel, (ft³/min)
M_x = Molecular weight of VOC species x, (lb/lb-mole)
60 = Minutes per hour
OH = Hours of purge, (hr)
R = 10.73 gas constant
T = Temperature of exhaust gas, (R)
PT = Total system pressure, (psia)

Heatup Loss Equation, EIIP Equation 8.4-10

$$\text{Evoc} = \left\{ \frac{\left[\frac{\text{sum}(P_x)T_1}{(14.7 - \text{sum}(P_x)T_1)} \right] + \left[\frac{\text{sum}(P_x)T_2}{(14.7 - \text{sum}(P_x)T_2)} \right]}{2} \right\} * (n)(M_a)$$

Where:

Evoc = VOC emissions from heat up, (lbs)
(P_x)T₁ = Initial partial pressure of VOC species x at T₁, (psia)
(P_x)T₂ = Final partial pressure of VOC species x at T₂, (psia)
M_a = Vapor molecular weight, (lb/lb-mole)
n = Number of pound-moles of gas displaced, (lb-mole)

$$n = \left(\frac{V}{R} \right) * \left[\left(\frac{P_{a1}}{T_1} \right) - \left(\frac{P_{a2}}{T_2} \right) \right] = \left(\frac{V}{R} \right) * \left[\left(\frac{14.7 - (P_x)T_1}{T_1} \right) - \left(\frac{14.7 - (P_x)T_2}{T_2} \right) \right]$$

Where:

V = volume of free space in the vessel, ft³
R = 10.73 gas constant
P_{a1} = 14.7 - (P_x)T₁
P_{a2} = 14.7 - (P_x)T₂
T₁ = R (F + 460)
T₂ = R (F + 460)

The batch cycle steps for initial kettle inerting, kettle washing, loading raws, and packaging shall use the loading loss EIIP equation 8.4-1. The batch cycle steps for purging from powder loading and nitrogen line purging shall use the gas sweep or purge EIIP Equation 8.4-23. The batch cycle steps for blending heatup shall use the heatup loss EIIP Equation 8.4-10. Any contributing fugitive

emissions shall be calculated using SOCM1 emission factors found in "Protocol for Equipment Leak Emission Estimates" EPA453/R-95-017, November 1995.

Any additional batch cycle steps shall be calculated using the equations contained in the STAPPA/ALAPCO-EPA documents, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 and/or Methods for Estimating Air emissions from Chemical Manufacturing Facilities, Volume II: Chapter 16." The short-term (lb/batch) emissions shall be determined by summing the values calculated from all batch steps and adding any contributing fugitive emissions calculated.

If required by the Ohio EPA or the CDAQ, compliance with the VOC emission limitation shall be determined through emission testing conducted in accordance with U.S. EPA Method 25 or 25A of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

b. Emission Limitation:

VOC emissions shall not exceed 1.90 tons/year

Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(6) including the equations and methodologies found in f)(1)a..

c. Emission Limitation:

PE shall not exceed 4.78 lbs/batch.

Applicable Compliance Method:

Compliance with the mass emissions limitation shall be determined by using the following one-time calculation for potential to emit:

$$(9590 \text{ lbs PE/batch}) \times (1 - 0.95) \times (1 - 0.99) = 4.78 \text{ lbs/batch}$$

Where:

9590 lbs = maximum process feed rate

0.95 = conservative assumption of the amount of solids captured by solvent

0.99 = conservative control efficiency of dust collector

If required by Ohio EPA or the CDAQ, compliance with the PE limitation shall be determined through emission testing conducted in accordance with U.S. EPA Methods 1 through 5 of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.



d. Emission Limitation:

PE shall not exceed 2.62 tons/year.

Applicable Compliance Method:

The annual limitation was developed by multiplying the lbs/batch limitation by the maximum annual production rate of 1095 batches/year, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lbs/batch limitation, compliance will also be shown with the annual limitation.

e. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 5% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required by Ohio EPA or the CDAQ, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

f. Emission Limitation:

9.5 tons individual HAPs/year for the list of emissions units in b)(2)e), as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g. Emission Limitation:

24.5 tons combined HAPs/year for the list of emissions units in b)(2)e., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g) Miscellaneous Requirements

(1) None.

5. P028, K18

Operations, Property and/or Equipment Description:

The process consists of a 1100 gallon blending vessel and a powder dryer. Liquid raw materials are added to the blender. Solids are dried in the drier and then added to the blender and mixed. The finished product is then pumped into pails or drums. The blender and powder drier are vented to a cartridge baghouse for particulate control. (P010 has been separated into P027 & P028)

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)(2)d., d)(7), e)(4), f)(1)f., and f)(1)g.

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.

	Rules/Requirements	Applicable Emissions Limitations/Control MeasuresApplicable
a.	OAC rule 3745-31-05(A)(3) (PTI 13-2917 issued 9/27/95) This emissions unit was installed in 1995.	<p>Volatile organic compound (VOC) emissions shall not exceed 6.64 lbs/batch and 2.42 tons/year.</p> <p>Particulate emissions (PE) shall not exceed 4.89 lbs/batch and 1.79 tons/year.</p> <p>Visible particulate emissions from the baghouse stack shall not exceed 5% opacity as a 6-minute average.</p>

	Rules/Requirements	Applicable Emissions Limitations/Control Measures Applicable
		The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D). See b)(2)a. and b)(2)b. below.
b.	OAC rule 3745-17-07(A)	The visible particulate emission limitation specified by this rule is less stringent than the visible particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-11(B)	The particulate emission limitation specified by this rule is less stringent than the particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
d.	OAC rule 3745-21-07(M)	See b)(2)c. below.
e.	OAC rule 3745-31-05(D) FEPTIO to avoid Title V and MACT	See b)(2)d. below.

(2) Additional Terms and Conditions

- a. This emissions unit operates using a batch cycle. The standard batch size for this emissions unit is 900 gallons. The minimum amount of time for one batch cycle is 10.5 hours, with a maximum number of batches produced per year of 730.
- b. The short-term (lbs/batch) and annual (tons/year) emissions limitations for PE from this emissions unit were established based on potential to emit. Therefore, no record keeping or reporting requirements are necessary for these limitations.
- c. The requirements of OAC rule 3745-21-07(M) do not apply to this emissions unit based on the fact that there is no chemical reaction taking place; there is only mixing occurring in this process. Additionally, there is no control device for the VOC emissions and there is no baking or heat curing of the material.
- d. The total allowable emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from all emissions units at this facility, (listed in b)(2)e. below) shall not exceed 9.5 tons/year for any individual HAP or 24.5 tons/year for a combination of HAPs. Compliance with the above limitations shall be based upon a rolling, 12-month summation of emissions for this emissions unit plus the annual HAP contribution from all other emissions units at this facility (listed in b)(2)e. below).

- e. The current emissions units located at this facility are P004, P008, P009, P011, P012, P013, P014, P015, P016, P017, P024, P027, P028, T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, B001, B002, B003, B004, B005, and 14 storage tanks (less than 10,000 gallons each) without separate EU identification numbers.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate and maintain equipment to continuously monitor and record the pressure drop, in inches of water, across the dust collector during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the dust collector on a daily basis.

Whenever the monitored value for the pressure drop deviates from the range specified below, 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(s) the investigation was conducted;
- d. the names 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 below, 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 readings immediately after the corrective action was implemented; and
- k. the names of the personnel who performed the work.

Investigation and records required by this paragraph does 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 acceptable range for the pressure drop across the dust collector shall be based upon the manufacturer's specifications until such time as any required emissions testing is conducted.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range 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.

- (2) The permittee shall collect and record the following information each day for emissions unit P028:
 - a. the company identification of each final product produced;
 - b. the vapor pressure of the loaded material for each batch (according to MSDS of each material), in psia;
 - c. the volume of the each material loaded, in gallons, for each step of the batch;
 - d. the molecular weight of each material loaded, in lb/lb mole;
 - e. the final vapor pressure of the material, if heated, in psia;
 - f. the flow rate of the purge into the vessel, in ft³/min;
 - g. the temperature of the exhaust gas (conservatively determined by measuring the temperature of the final product);
 - h. the total emissions for each batch produced (calculated as shown by the equations and methodologies in f)(1)a., in pounds; and
 - i. the annual summation of the VOC emissions [sum of (h)], in tons.
- (3) The permittee shall collect and record the following information each month for the entire facility (list of emissions units identified in b)(2)e.):
 - a. the name and identification number of each HAP containing material employed;

- b. the individual HAP content contained in the final product for each HAP, in percent by weight;
- c. the total of each individual HAP emissions from the emissions unit, in pounds or tons per month, using the following:
 - i. the individual HAP emissions will be determined by applying the equations* found in f)(1)a. for each individual HAP species or by multiplying the VOC emissions rate, as determined by the equations* found in f)(1)a. below for all blending vessels (P004, P008, P009, P011, P012, P013, P014, P015, P016, P017, P024, P027, and P028);
 - ii. the latest version of U.S. EPA's TANKS or U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, Compilation of Air Pollution Emission Factors, Section 7.1, Organic Liquid Storage Tanks (9/97) for all storage tanks (T017, T019, T020, T021, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, and 14 exempt storage tanks) by the individual HAP content of each solvent contained in the final product for each HAP, in percent by weight;
 - iii. in order to determine individual HAP emissions from boilers B001, B002, B003, B004, and B005, U.S. EPA reference document AP-42, Fifth Edition or the most recent edition of AP-42, External Combustion Sources, Section 1.4, Natural Gas Combustion (7/98) will be used;
 - iv. any emission factors shall be updated based on the results of any new emissions data or stack testing data obtained.

*These equations are the calculation methodologies found in the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8";

- d. the total combined HAP emissions from the emissions unit in pounds or tons per month [the sum of (c) for all individual HAPs];
- e. the updated rolling, 12-month summation of emissions for each individual HAP, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
- f. the updated rolling, 12-month summation of emissions for total combined HAPs, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar 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 CDAQ contact. This information does not have to be kept on an individual emission unit basis.

e) Reporting Requirements

- (1) 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.
- (2) The permittee shall include in the annual PER the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.
- (3) The permittee shall include in the annual PER information that identifies all exceedances of the short-term (lbs/batch) and annual emission limitations for VOC.
- (4) 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. an identification of each month during which the rolling, 12-month individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) exceeded 9.5 tons, and the actual rolling, 12-month summation of each individual HAP emissions rate (from the list of emissions units referenced in b)(2)e.) for each such month; and
 - ii. an identification of each month during which the rolling, 12-month combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) exceeded 24.5 tons, and the actual rolling, 12-month summation of the combination of all HAP emissions rates (from the list of emissions units referenced in b)(2)e.) for each such month.
 - 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 Cleveland Division of Air Quality.

- (5) 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.

f) Testing Requirements

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

- a. Emission Limitation:

VOC emissions shall not exceed 6.64 lbs/batch

- Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(2) and the following equations taken from the STAPPA/ALAPCO-EPA document, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8."

Loading Loss Equation, EIIP Equation 8.4-1

$$E_{VOC} = \frac{(12.46)(S)(P)(M)(Q)}{(T)}$$

Where:

12.46 = Universal gas constant

S = Saturation factor

P = System vapor pressure, (psia)
M = Vapor molecular weight, (lb/lb mole)
Q = Volume of material loaded, (1000 gal)
T = Temperature of liquid loaded, (R)

Gas Sweep or Purge Equation, EIIP Equation 8.4-23

$$\text{Exp} = \left[\frac{(P_x)(F)(M_x)(60)(OH)}{(R)(T)} \right] * \left[\frac{(PT)}{(PT - \text{sum}P_x)} \right]$$

Where:

Exp = Emission of VOC species x, (lbs)
P_x = Partial pressure of VOC species x, (psia)
F = Flow rate into vessel, (ft³/min)
M_x = Molecular weight of VOC species x, (lb/lb-mole)
60 = Minutes per hour
OH = Hours of purge, (hr)
R = 10.73 gas constant
T = Temperature of exhaust gas, (R)
PT = Total system pressure, (psia)

Heatup Loss Equation, EIIP Equation 8.4-10

$$\text{Evoc} = \left\{ \frac{\left[\frac{\text{sum}(P_x)T_1}{(14.7 - \text{sum}(P_x)T_1)} \right] + \left[\frac{\text{sum}(P_x)T_2}{(14.7 - \text{sum}(P_x)T_2)} \right]}{2} \right\} * (n)(M_a)$$

Where:

E_{VOC} = VOC emissions from heat up, (lbs)
(P_x)T₁ = Initial partial pressure of VOC species x at T₁, (psia)
(P_x)T₂ = Final partial pressure of VOC species x at T₂, (psia)
M_a = Vapor molecular weight, (lb/lb-mole)
n = Number of pound-moles of gas displaced, (lb-mole)

$$n = \left(\frac{V}{R} \right) * \left[\left(\frac{P_{a1}}{T_1} \right) - \left(\frac{P_{a2}}{T_2} \right) \right] = \left(\frac{V}{R} \right) * \left[\left(\frac{14.7 - (P_x)T_1}{T_1} \right) - \left(\frac{14.7 - (P_x)T_2}{T_2} \right) \right]$$

Where:

V = volume of free space in the vessel, ft³
R = 10.73 gas constant
P_{a1} = 14.7 - (P_x)T₁
P_{a2} = 14.7 - (P_x)T₂
T₁ = R (F + 460)
T₂ = R (F + 460)

The batch cycle steps for initial kettle inerting, kettle washing, loading raws, and packaging shall use the loading loss EIIP equation 8.4-1. The batch cycle steps for purging from powder loading and nitrogen line purging shall use the gas sweep or purge EIIP Equation 8.4-23. The batch cycle steps for blending heatup shall use the heatup loss EIIP Equation 8.4-10. Any contributing fugitive

emissions shall be calculated using SOCM1 emission factors found in "Protocol for Equipment Leak Emission Estimates" EPA453/R-95-017, November 1995.

Any additional batch cycle steps shall be calculated using the equations contained in the STAPPA/ALAPCO-EPA documents, "Emission Inventory Improvement Program (EIIP), Methods for Estimating Air from Paint, Ink, and Other Coating Manufacturing Facilities, Volume II: Chapter 8 and/or Methods for Estimating Air emissions from Chemical Manufacturing Facilities, Volume II: Chapter 16." The short-term (lb/batch) emissions shall be determined by summing the values calculated from all batch steps and adding any contributing fugitive emissions calculated.

If required by the Ohio EPA or the CDAQ, compliance with the VOC emission limitation shall be determined through emission testing conducted in accordance with U.S. EPA Method 25 or 25A of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

b. Emission Limitation:

VOC emissions shall not exceed 2.42 tons/year

Applicable Compliance Method:

Compliance shall be based off of the record keeping found in d)(6) including the equations and methodologies found in f)(1)a..

c. Emission Limitation:

PE shall not exceed 4.89 lbs/batch.

Applicable Compliance Method:

Compliance with the mass emissions limitation shall be determined by using the following one-time calculation for potential to emit:

$$(9775 \text{ lbs PE/batch}) \times (1 - 0.95) \times (1 - 0.99) = 4.89 \text{ lbs PE/batch}$$

Where:

9775 lbs = maximum process feed rate

0.95 = conservative assumption of the amount of solids captured by solvent

0.99 = conservative control efficiency of dust collector

If required by Ohio EPA or the CDAQ, compliance with the PE limitation shall be determined through emission testing conducted in accordance with U.S. EPA Methods 1 through 5 of 40 CFR Part 60, Appendix A, or any Ohio EPA approved alternative testing method.

d. Emission Limitation:

PE shall not exceed 1.79 tons/year.

Applicable Compliance Method:

The annual limitation was developed by multiplying the lbs/batch limitation by the maximum annual production rate of 730 batches/year, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lbs/batch limitation, compliance will also be shown with the annual limitation.

e. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 5% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required by Ohio EPA or the CDAQ, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

f. Emission Limitation:

9.5 tons individual HAPs/year for the list of emissions units in b)(2)e., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g. Emission Limitation:

24.5 tons combined HAPs/year for the list of emissions units in b)(2)e., as a 12-month, rolling summation.

Applicable Compliance Method:

Compliance shall be determined based upon the record keeping specified in d)(3).

g) Miscellaneous Requirements

- (1) None.