



1/2/2014

Certified Mail

Julie Zellner  
 Mitsubishi Electric Automotive America  
 4773 Bethany Rd  
 Mason, OH 45040

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: 1483090295  
 Permit Number: P0115467  
 Permit Type: Renewal  
 County: Warren

Dear Permit Holder:

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

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

**How to appeal this permit**

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

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

## **How to save money, reduce pollution and reduce energy consumption**

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: [www.ohioairquality.org/clean\\_air](http://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](http://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](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Southwest Ohio Air Quality Agency at (513)946-7777 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: SWOQA



**FINAL**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
Mitsubishi Electric Automotive America**

Facility ID:	1483090295
Permit Number:	P0115467
Permit Type:	Renewal
Issued:	1/2/2014
Effective:	1/2/2014
Expiration:	8/10/2017





**Division of Air Pollution Control**  
**Permit-to-Install and Operate**  
for  
Mitsubishi Electric Automotive America

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**Final Permit-to-Install and Operate**  
Mitsubishi Electric Automotive America  
**Permit Number:** P0115467  
**Facility ID:** 1483090295  
**Effective Date:** 1/2/2014

## Authorization

Facility ID: 1483090295  
Application Number(s): A0048903  
Permit Number: P0115467  
Permit Description: FEPTIO Renewal for two (2) miscellaneous metal parts coating lines; armature varnishing lines 2 and 3, using catalytic oxidation for VOC/HAP control.  
Permit Type: Renewal  
Permit Fee: \$0.00  
Issue Date: 1/2/2014  
Effective Date: 1/2/2014  
Expiration Date: 8/10/2017  
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Mitsubishi Electric Automotive America  
4773 Bethany Rd  
Mason, OH 45040

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:

Southwest Ohio Air Quality Agency  
250 William Howard Taft Rd.  
Cincinnati, OH 45219  
(513)946-7777

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

  
Scott J. Nally  
Director



**Final Permit-to-Install and Operate**  
Mitsubishi Electric Automotive America  
**Permit Number:** P0115467  
**Facility ID:** 1483090295  
**Effective Date:** 1/2/2014

## Authorization (continued)

Permit Number: P0115467  
Permit Description: FEPTIO Renewal for two (2) miscellaneous metal parts coating lines; armature varnishing lines 2 and 3, using catalytic oxidation for VOC/HAP control.

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

<b>Emissions Unit ID:</b>	<b>K008</b>
Company Equipment ID:	Armature Varnishing Line #2
Superseded Permit Number:	P0100756
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K010</b>
Company Equipment ID:	Armature Varnish Line #3
Superseded Permit Number:	P0100751
General Permit Category and Type:	Not Applicable



**Final Permit-to-Install and Operate**  
Mitsubishi Electric Automotive America  
**Permit Number:** P0115467  
**Facility ID:** 1483090295  
**Effective Date:** 1/2/2014

## **A. Standard Terms and Conditions**



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

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

**2. Who is responsible for complying with this permit?**

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

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

**3. What records must I keep under this permit?**

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

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

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

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

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

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

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

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



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

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

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

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

**7. What reports must I submit under this permit?**

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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



**Final Permit-to-Install and Operate**  
Mitsubishi Electric Automotive America  
**Permit Number:** P0115467  
**Facility ID:** 1483090295  
**Effective Date:** 1/2/2014

## **B. Facility-Wide Terms and Conditions**



1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - (1) None.
  - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - (1) 2., 3., 4., and 5.
2. The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from emissions units K005, K006, K008, K009, K010, P001, P002, P003, P004, P005, P006, P007, P008, P009, P010, other de minimus air contaminant sources, as defined in OAC rule 3745-15-05, and other air contaminant sources exempt from the requirement to obtain a permit-toinstall pursuant to OAC rule 3745-31-03 installed subsequent to the issuance of this permit, combined, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on rolling, 12-month summations.
3. The permittee shall collect and record the following information each month for the emissions units identified in 2:
  - a) The name and identification number of each coating employed;
  - b) The individual Hazardous Air Pollutant (HAP) content for each HAP of each coating, in pounds of individual HAP per gallon of coating, as applied;
  - c) The total combined HAP content of each coating, in pounds of combined HAPs per gallon of coating, as applied [sum all the individual HAP contents from b)];
  - d) The number of gallons of each coating employed;
  - e) The name and identification of each cleanup material employed;
  - f) The individual HAP content for each HAP of each cleanup material, in pounds of individual HAP per gallon of cleanup material, as applied;
  - g) The total combined HAP content of each cleanup material, in pounds of combined HAPs per gallon of cleanup material, as applied [sum all the individual HAP contents from f)];
  - h) The number of gallons of each cleanup material employed;
  - i) The total individual HAP usage for each HAP from all coatings and cleanup materials employed, in pounds or tons per month [for each HAP, the sum of the products of b) multiplied by d) for each coating, plus the sum of the products of f) multiplied by h) for each cleanup material];



- j) The total combined HAP usage from all coatings and cleanup materials employed, in pounds or tons per month [the sum of the products of c) multiplied by d) for each coating plus the sum of the products of g) multiplied by h) for each cleanup material];
- k) The updated rolling, 12-month summation of usage for each individual HAP emission\*, in tons, for the current month plus the preceding eleven calendar months [for each HAP, i) as calculated above, multiplied by 1 minus the Overall Control Efficiency of the control device (1 – decimal OCE). For calculating styrene emissions from coatings, use an emission factor of 0.52 pound styrene emitted per pound of styrene input; and
- l) The updated rolling, 12-month summation of usage for total combined HAP emissions\*, in tons, for the current month plus the preceding eleven calendar months [the sum of the individual HAPs as calculated in k) above].

A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. This information does not have to be kept on a line-by-line basis.

\*Styrene is emitted at 52% of the total amount of styrene used (Composite Fabricators Association, 1997. All other HAPs are emitted at rates equivalent to the amount used.

4. The permittee shall submit quarterly deviation (excursion) reports for the following emissions unit(s) that identify:

- a) all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

<u>Emissions unit ID</u>	<u>Term &amp; Condition</u>
See EUs outlined in B.2.	B.2.

- 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 each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

5. Compliance with the emission limitations in B.2. of these terms and conditions shall be determined in accordance with the following methods:



**Final Permit-to-Install and Operate**  
Mitsubishi Electric Automotive America  
**Permit Number:** P0115467  
**Facility ID:** 1483090295  
**Effective Date:** 1/2/2014

a) Emission Limitation:

9.9 TPY for any single HAP and 24.9 TPY for combined HAPs, based on rolling 12-month-summations for the emissions units listed in 2.

Applicable Compliance Method:

Compliance with the HAP emission limitations shall be demonstrated by the recordkeeping requirements specified in 3.



**Final Permit-to-Install and Operate**  
Mitsubishi Electric Automotive America  
**Permit Number:** P0115467  
**Facility ID:** 1483090295  
**Effective Date:** 1/2/2014

## **C. Emissions Unit Terms and Conditions**



**1. K008, Armature Varnishing Line #2**

**Operations, Property and/or Equipment Description:**

Coater

- 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)(8).
  - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - a. b)(1)b., b)(1)c., b)(2)c. through b)(2)h., c)(2) and c)(3), d)(2) through d)(7) and e)(3).
- b) Applicable Emissions Limitations and/or Control Requirements
  - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions of volatile organic compounds (VOC) shall not exceed 0.75 pound per hour from the application of coatings.  Emissions of VOC shall not exceed 3.70 tons per year (TPY) from the application of coatings and cleanup material usage.  See b)(2)a. through b)(2)f., c)(1), and c)(2).  The requirements of this rule also include compliance with the requirements of OAC rules 3745-21-09(B)(6) and 3745-31-05(D).
b.	OAC rule 3745-31-05(D) Synthetic Minor to Avoid Title V	See section B.2.
c.	OAC rule 3745-21-09(B)(6)	See b)(2)h.



- (2) Additional Terms and Conditions
- a. The VOC content for the varnishes employed in this emissions unit shall not exceed 2.60 pounds of VOC per gallon, as applied.
  - b. The VOC content of the cleanup materials employed in this emissions unit shall not exceed 7.32 pounds of VOC per gallon.
  - c. The VOC emissions from this emissions unit shall be controlled through the application of a permanent total enclosure with a 100% capture efficiency.
  - d. The permanent total enclosure shall be constructed to totally enclose the application stations, coating reservoirs, and all areas from the application station to the oven and the control device, such that all volatile organic compound emissions are captured, contained, and directed to the control device.
  - e. The permanent total enclosure shall be maintained under negative pressure whenever the emissions unit is in operation, and shall be designed and maintained to have an average facial velocity of air through each natural draft opening of at least 200 feet per minute (3,600 m/hr). Compliance with the average facial velocity shall be demonstrated during the compliance test, by either using an air flow monitor or a differential pressure gauge at each natural draft opening, and maintaining the required facial velocity or the corresponding negative pressure. The permanent total enclosure shall meet all of the following criteria if the capture efficiency of the enclosure and control device is to be assumed to be 100%:
    - i. Any natural draft opening shall be at least four equivalent opening diameters, or 4 times the diameter of the opening, from each VOC emitting point. An equivalent diameter is the diameter of a circle that has the same area as the opening. If the opening is not circular the equivalent diameter (ED) is calculated as follows:
$$ED = (4 \text{ area}/\pi)^{0.5}$$
    - ii. The total area of all natural draft openings ( $A_N$ ) shall not exceed 5 percent of the total surface area of the enclosure ( $A_T$ ), i.e, the four walls, floor, and ceiling. The natural draft opening to enclosure area ratio (NEAR) is calculated as follows:
$$NEAR = A_N/ A_T$$
    - iii. The direction of air flow through all natural draft openings shall be into the enclosure, with an average facial velocity of no less than 200 feet per minute (3,600 m/hr) or a pressure drop of 0.013 mm Hg (0.007 in. H<sub>2</sub>O).
    - iv. All access doors and windows to the enclosure that do not meet the requirements of a natural draft opening and whose surface areas are not included in the 5 percent surface area determination in "b", shall be completely closed to any air movement during process operations.



- v. All VOC emissions shall be captured and contained for discharge through the control device.
  - f. The permanent total enclosure (PTE) serving this emissions unit shall be maintained in such a manner as to meet the criteria established for a permanent total enclosure in 40 CFR, Part 51, Appendix M, Reference Method 204, and shall capture all of the VOC emissions from this emissions unit.
  - g. All of the VOC emissions from this emissions unit shall be vented to a catalytic incinerator that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
  - h. The capture and control system shall provide not less than an 81 percent reduction, by weight, in the overall VOC emissions from the coating line and the destruction efficiency of the catalytic incinerator shall not be less than 90 percent, by weight, for the VOC emissions vented to it.
  - i. The short-term emission limitation outlined in b)(1)a. is based upon the emissions unit's potential to emit. Therefore, no hourly records are required to demonstrate compliance with this limitation.
- c) Operational Restrictions
- (1) The maximum annual coating material usage for this emissions unit shall not exceed 10,757 gallons per year and the maximum annual cleanup material usage for this emissions unit shall not exceed 264 gallons per year.
  - (2) The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than 0.013 mm Hg (0.007 in. H<sub>2</sub>O), whenever the emissions unit is in operation.
  - (3) The catalytic incinerator shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The conversion efficiency of the catalyst, as determined in an annual catalyst activity test, shall be sufficient to meet the destruction efficiency and control efficiency requirements of this permit at a test temperature that is equal to that temperature at which the inlet to the catalyst bed is set. Solvent loading during the catalyst activity test shall be consistent with the test laboratory's normal testing protocol.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall collect and record the following information each month for this emissions unit:
    - a. The name and identification of each coating, varnish, and cleanup material employed;
    - b. The VOC content of each coating, varnish, and cleanup material, in pounds of VOC per gallon, as applied;



- c. The number of gallons of each coating, varnish, and cleanup material, as applied;
  - d. The VOC emissions from each coating, varnish, and cleanup material employed, in pounds (for each, b. multiplied by c. for non-styrene VOCs; plus b. multiplied by c. multiplied by 0.52 pound styrene per pound of VOC; the summation of all VOCs multiplied by 1 minus the Control Efficiency (decimal) of the catalytic oxidizer)
  - e. The summation of the VOC emissions from all coatings, varnishes, and cleanup materials, in Tons (the summation of the emissions as calculated in d. for each, then divided by 2000 pounds per Ton).
- (2) The permittee shall measure, document/calculate, and maintain a permanent record of the following information for the permanent total enclosure, which may be the same record documented during the compliance test(s):
- a. the measured diameter of each natural draft opening;
  - b. the distance measured from each natural draft opening to each VOC emitting point;
  - c. the total calculated surface area of all natural draft openings and the surface area of the enclosure's four walls, floor, and ceiling;
  - d. the calculation or demonstration that the distance from each VOC emitting point to each natural draft opening is at least 4 times the diameter of the opening; and
  - e. the calculation demonstrating that the sum of the surface areas of all of the natural draft openings to the enclosure is not more than 5 percent of the sum of the surface areas of the enclosure's four walls, floor, and ceiling.
- (3) The permittee shall install, operate, and maintain monitoring devices and a recorder that continuously monitor and record the differential pressure between the inside and outside of the permanent total enclosure when the emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals, with any modifications deemed necessary by the permittee.
- The permittee shall collect and record the following information each day:
- a. all three-hour blocks of time during which the difference in pressure between the permanent total enclosure and the surrounding areas is not maintained at or above the minimum pressure differential of 0.007 inches of water, as a three-hour average; and
  - b. a log or record of downtime for the capture (collection) system when the emissions unit was in operation.
- (4) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable average temperature of the exhaust gases immediately



before the catalyst bed, for any 3-hour block of time when the emissions unit(s) controlled by the catalytic incinerator is/are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance. The acceptable average temperature difference across the catalyst bed, for any 3-hour block of time (when the emissions unit(s) is/are in operation), shall not be less than 80 percent of the average temperature difference measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance.

- (5) The permittee shall properly install, operate, and maintain continuous temperature monitors and recorder(s) that measure and record(s) the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within  $\pm 1$  percent of the temperature being measured or  $\pm 5$  degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
- a. all 3-hour blocks of time, when the emissions unit(s) controlled by the catalytic incinerator was/were in operation, during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;
  - b. all 3-hour blocks of time, when the emissions unit(s) controlled by the catalytic incinerator was/were in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
  - c. a log or record of the operating time for the capture (collection) system, catalytic incinerator, monitoring equipment, and the associated emissions unit(s).

The permittee may use a temperature chart recorder or equivalent recording device as the log that documents the temperature differential across the catalyst bed. These records shall be maintained at the facility for a period of no less than 3 years.

- (6) Whenever the monitored average temperature of the exhaust gases immediately before the catalyst bed and/or the average temperature difference across the catalyst bed deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
  - b. the magnitude of the deviation at that time;



- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

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

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

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

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

- (7) The permittee shall perform a preventative maintenance inspection of the catalytic incinerator on an annual basis to evaluate the performance of the catalyst bed. Each inspection shall consist of internal and visual inspections in accordance with the manufacturer's recommendations, and shall include a physical inspection of the unit and all of the associated equipment, including but not limited to burners, controls, dampers, valves, and monitoring and recording equipment. Repair and replacement of equipment and the catalyst shall be performed as determined by the inspection. During each annual inspection a sample of the catalyst material shall be collected from the catalyst bed and used to perform a catalyst activity test. The permittee shall maintain a record of the results of each annual inspection and the results of each annual catalyst activity test.



The permittee shall also perform weekly inspections of the external integrity of the catalytic incinerator. Records shall be maintained of the inspections and the date(s) of catalyst replacement, and if only partial, the amount or percent of the total catalyst replaced.

- (8) The permit to install for this emissions unit, K008, was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Ground-Level Concentration (MAGLC).

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

Pollutant: Styrene

TLV (ug/m3): 85,202

Maximum Hourly Emission Rate (lbs/hr): 2.0 (Emissions units K001, K002 and K008)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 71.1

MAGLC (ug/m3): 2029

Physical changes to or 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 Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in 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 emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).



If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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. When the 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) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit 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.
- (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. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;
  - ii. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;
  - iii. any records of downtime (date and length of time) for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit(s) was/were in operation;
  - iv. a log of the operating time for the capture system, catalytic incinerator, monitoring equipment, and the emissions unit(s); and
  - v. all three-hour blocks of time, when the emissions unit was in operation, during which the permanent total enclosure was not maintained at the minimum pressure differential of 0.007 inches of water.
- 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 each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (4) The permittee shall also submit annual reports that specify the total VOC emissions from this emissions unit for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report.

f) Testing Requirements

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



a. Emission Limitation:

Emissions of volatile organic compounds (VOC) shall not exceed 0.75 pound per hour from the application of coatings.

Applicable Compliance Method:

See f)(1)c.

Compliance with the short-term VOC emission limitation shall be demonstrated by multiplying the actual hourly coating usage rate, in gallons per hour, as applied by the actual coating VOC content, in pounds of VOC per gallon of coating, as applied, multiplied the applicable Emission Factor (EF) for styrene emitted, 0.52 pounds of styrene emitted per pound of VOC, multiplied by 1 minus the Control Efficiency (CE) of the catalytic oxidizer, yielding pounds of VOC emissions per hour, controlled.

The Applicable Emission Limitation was established from calculations using information supplied by the permittee in the Application for Permit to Install # 14-04938, issued on March 5, 2002:

$1.524 \text{ gallons coating/hour} \times 2.6 \text{ pounds VOC/gallon coating} \times (1 - 0.81 \text{ CE}) = 0.75 \text{ pound VOC/hour}$

Where: CE = overall Control Efficiency of the catalytic oxidizer, minimum, based on SIP (OAC rule 3745-21-09(B)(6)); 81% or 0.81 expressed as a decimal

b. Emission Limitation:

Emissions of VOC shall not exceed 3.70 tons per year (TPY) from the application of coatings and cleanup material usage.

Applicable Compliance Method:

Compliance with the annual VOC emission limitation shall be demonstrated by a summation of the monthly VOC emissions as calculated in d)(1)e.

The Applicable Emission Limitation was established from calculations using information supplied by the permittee in the Application for Permit to Install # 14-04938, issued on March 5, 2002:

$10,757 \text{ gallons coating/year} \times 2.60 \text{ pounds VOC/gallon coating} \times (1 - 0.81 \text{ CE}) \times 1 \text{ Ton}/2000 \text{ pounds} = 2.66 \text{ TPY VOC, from coatings}$

$264 \text{ gallons cleanup materials/year} \times 7.32 \text{ pounds VOC/gallon cleanup material} \times 1 \text{ Ton}/2000 \text{ pounds} = 0.97 \text{ TPY VOC, rounded to } 1.0 \text{ TPY VOC, from cleanup materials}$

$2.66 \text{ TPY VOC, from coatings} + 1.0 \text{ TPY VOC, from cleanup materials} = 3.66 \text{ TPY VOC, rounded to } 3.70 \text{ TPY VOC}$



c. Emission Limitation/Capture & Control Requirement:

Emissions of volatile organic compounds (VOC) shall not exceed 0.75 pound per hour from the application of coatings.

The catalytic oxidizer shall be operated to achieve an overall control efficiency which is at least 81% by weight and a destruction efficiency which is at least 90% by weight.

A permanent total enclosure shall be constructed to totally enclose the application stations, coating reservoirs, and all areas from the application station to the oven and the control device, such that all volatile organic compound emissions are captured, contained, and directed to the control device.

The permanent total enclosure (PTE) serving this emissions unit shall be maintained in such a manner as to meet the criteria established for a permanent total enclosure in 40 CFR, Part 51, Appendix M, Reference Method 204, and shall capture all of the VOC emissions from this emissions unit.

Applicable Compliance Method:

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

- i. The emission testing shall be conducted within 6 months after issuance of this permit.
- ii. The emission testing shall be conducted to demonstrate compliance with the overall control efficiency and destruction efficiency requirements for VOC and the capture efficiency requirement for the permanent total enclosure.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

For VOC, Method 25 of 40 CFR Part 60, Appendix A and for capture efficiency, Method 2 of 40 CFR Part 60, Appendix A and Method 204 or 40 CFR Part 51, Appendix M.

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

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)



The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 3745-21-10 or an alternative test protocol approved by the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

- iv. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.
  - v. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
  - vi. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
  - vii. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
- d. Emission Limitation/Control Measure:



The VOC content for the varnishes employed in this emissions unit shall not exceed 2.60 pounds of VOC per gallon, as applied.

Applicable Compliance Method:

USEPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotogravure printing inks and related coatings, respectively. If, pursuant to Method 24 as outlined in 40 CFR Part 60, Appendix A, an owner or operator determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the USEPA and shall use formulation data for that coating or ink to demonstrate compliance until the USEPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

e. Emission Limitation/Control Measure:

The VOC content of the cleanup materials employed in this emissions unit shall not exceed 7.32 pounds of VOC per gallon.

Applicable Compliance Method:

OAC rule 3745-21-10(B). Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and inks.

- (2) The permittee shall conduct, or have conducted, catalyst activity testing using the catalyst sample collected during the annual inspection described in this permit. An intent to test notification shall not be required for catalyst activity testing. The procedures for the catalyst activity test shall be conducted in accordance with the manufacturer's recommendations and as required by the appropriate test method.

g) Miscellaneous Requirements

- (1) None.



**2. K010, Armature Varnish Line #3**

**Operations, Property and/or Equipment Description:**

Toshiba Chemical #3 armature varnish line (drip application) and bake oven with catalytic oxidizer.

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)(8).

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

a. b)(1)b., b)(1)c., b)(2)c. through b)(2)g., c)(2), c)(3), d)(2) through d)(7) and e)(3).

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions of volatile organic compounds (VOC) shall not exceed 0.40 pound per hour from the application of coatings.  Emissions of VOC shall not exceed 2.30 tons per year (TPY) from the application of coatings and cleanup material usage.  See b)(2)a. through b)(2)f., c)(1), and c)(2).  The requirements of this rule also include compliance with the requirements of OAC rules 3745-21-09(B)(6) and 3745-31-05(D).
b.	OAC rule 3745-31-05(D) Synthetic Minor to Avoid Title V	See section B.2.
c.	OAC rule 3745-21-09(B)(6)	See b)(2)g.



(2) Additional Terms and Conditions

- a. The VOC content for the varnishes employed in this emissions unit shall not exceed 2.60 pounds of VOC per gallon, as applied.
- b. The VOC content of the cleanup materials employed in this emissions unit shall not exceed 6.80 pounds of VOC per gallon.
- c. A permanent total enclosure shall be constructed to totally enclose the application stations, coating reservoirs, and all areas from the application station to the oven and the control device, such that all volatile organic compound emissions are captured, contained, and directed to the control device.
- d. The permanent total enclosure shall be maintained under negative pressure whenever the emissions unit is in operation, and shall be designed and maintained to have an average facial velocity of air through each natural draft opening of at least 200 feet per minute (3,600 m/hr). Compliance with the average facial velocity shall be demonstrated during the compliance test, by either using an air flow monitor or a differential pressure gauge at each natural draft opening, and maintaining the required facial velocity or the corresponding negative pressure. The permanent total enclosure shall meet all of the following criteria if the capture efficiency of the enclosure and control device is to be assumed to be 100%:

- i. Any natural draft opening shall be at least four equivalent opening diameters, or 4 times the diameter of the opening, from each VOC emitting point. An equivalent diameter is the diameter of a circle that has the same area as the opening. If the opening is not circular the equivalent diameter (ED) is calculated as follows:

$$ED = (4 \text{ area}/\pi)^{0.5}$$

- ii. The total area of all natural draft openings ( $A_N$ ) shall not exceed 5 percent of the total surface area of the enclosure ( $A_T$ ), i.e, the four walls, floor, and ceiling. The natural draft opening to enclosure area ratio (NEAR) is calculated as follows:

$$NEAR = A_N / A_T$$

- iii. The direction of air flow through all natural draft openings shall be into the enclosure, with an average facial velocity of no less than 200 feet per minute (3,600 m/hr) or a pressure drop of 0.013 mm Hg (0.007 in. H<sub>2</sub>O).
- iv. All access doors and windows to the enclosure that do not meet the requirements of a natural draft opening and whose surface areas are not included in the 5 percent surface area determination in "b", shall be completely closed to any air movement during process operations.
- v. All VOC emissions shall be captured and contained for discharge through the control device.



- e. The permanent total enclosure (PTE) serving this emissions unit shall be maintained in such a manner as to meet the criteria established for a permanent total enclosure in 40 CFR, Part 51, Appendix M, Reference Method 204, and shall capture all of the VOC emissions from this emissions unit.
  - f. All of the VOC emissions from this emissions unit shall be vented to a catalytic incinerator that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
  - g. The catalytic oxidizer shall be operated to achieve an overall control efficiency which is at least 81% by weight and a destruction efficiency which is at least 90% by weight.
  - h. The short-term emission limitation outlined in b)(1)a. is based upon the emissions unit's potential to emit. Therefore, no hourly records are required to demonstrate compliance with this limitation.
- c) Operational Restrictions
- (1) The maximum annual cleanup material usage for this emissions unit shall not exceed 150 gallons per year.
  - (2) The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than 0.013 mm Hg (0.007 in. H<sub>2</sub>O), whenever the emissions unit is in operation.
  - (3) The catalytic incinerator shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The conversion efficiency of the catalyst, as determined in an annual catalyst activity test, shall be sufficient to meet the destruction efficiency and control efficiency requirements of this permit at a test temperature that is equal to that temperature at which the inlet to the catalyst bed is set. Solvent loading during the catalyst activity test shall be consistent with the test laboratory's normal testing protocol.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall collect and record the following information each month for this emissions unit:
    - a. The name and identification of each coating, varnish, and cleanup material employed;
    - b. The VOC content of each coating, varnish, and cleanup material, in pounds of VOC per gallon, as applied;
    - c. The number of gallons of each coating, varnish, and cleanup material, as applied;
    - d. The VOC emissions from each coating, varnish, and cleanup material employed, in pounds (for each, b. multiplied by c. for non-styrene VOCs; plus b. multiplied by c. multiplied by 0.52 pound styrene per pound of VOC; the summation of all



VOCs multiplied by 1 minus the Control Efficiency (decimal) of the catalytic oxidizer)

- e. The summation of the VOC emissions from all coatings, varnishes, and cleanup materials, in Tons (the summation of the emissions as calculated in d. for each, then divided by 2000 pounds per Ton).
- (2) The permittee shall measure, document/calculate, and maintain a permanent record of the following information for the permanent total enclosure, which may be the same record documented during the compliance test(s):
- a. the measured diameter of each natural draft opening;
  - b. the distance measured from each natural draft opening to each VOC emitting point;
  - c. the total calculated surface area of all natural draft openings and the surface area of the enclosure's four walls, floor, and ceiling;
  - d. the calculation or demonstration that the distance from each VOC emitting point to each natural draft opening is at least 4 times the diameter of the opening; and
  - e. the calculation demonstrating that the sum of the surface areas of all of the natural draft openings to the enclosure is not more than 5 percent of the sum of the surface areas of the enclosure's four walls, floor, and ceiling.
- (3) The permittee shall install, operate, and maintain monitoring devices and a recorder that continuously monitor and record the differential pressure between the inside and outside of the permanent total enclosure when the emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals, with any modifications deemed necessary by the permittee.
- The permittee shall collect and record the following information each day:
- a. all three-hour blocks of time during which the difference in pressure between the permanent total enclosure and the surrounding areas is not maintained at or above the minimum pressure differential of 0.007 inches of water, as a three-hour average; and
  - b. a log or record of downtime for the capture (collection) system when the emissions unit was in operation.
- (4) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit(s) controlled by the catalytic incinerator is/are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance. The acceptable average temperature difference across the catalyst bed, for any 3-hour block of time (when the emissions unit(s) is/are in operation), shall not be less than 80 percent



of the average temperature difference measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance.

- (5) The permittee shall properly install, operate, and maintain continuous temperature monitors and recorder(s) that measure and record(s) the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within  $\pm 1$  percent of the temperature being measured or  $\pm 5$  degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
- a. all 3-hour blocks of time, when the emissions unit(s) controlled by the catalytic incinerator was/were in operation, during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;
  - b. all 3-hour blocks of time, when the emissions unit(s) controlled by the catalytic incinerator was/were in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
  - c. a log or record of the operating time for the capture (collection) system, catalytic incinerator, monitoring equipment, and the associated emissions unit(s).

The permittee may use a temperature chart recorder or equivalent recording device as the log that documents the temperature differential across the catalyst bed. These records shall be maintained at the facility for a period of no less than 3 years.

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



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

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

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

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

- (7) The permittee shall perform a preventative maintenance inspection of the catalytic incinerator on an annual basis to evaluate the performance of the catalyst bed. Each inspection shall consist of internal and visual inspections in accordance with the manufacturer's recommendations, and shall include a physical inspection of the unit and all of the associated equipment, including but not limited to burners, controls, dampers, valves, and monitoring and recording equipment. Repair and replacement of equipment and the catalyst shall be performed as determined by the inspection. During each annual inspection a sample of the catalyst material shall be collected from the catalyst bed and used to perform a catalyst activity test. The permittee shall maintain a record of the results of each annual inspection and the results of each annual catalyst activity test.

The permittee shall also perform weekly inspections of the external integrity of the catalytic incinerator. Records shall be maintained of the inspections and the date(s) of catalyst replacement, and if only partial, the amount or percent of the total catalyst replaced.



- (8) The permit to install for this emissions unit, K010, was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Ground-Level Concentration (MAGLC).

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

Pollutant: Styrene

TLV (ug/m3): 85,202

Maximum Hourly Emission Rate (lbs/hr): 0.4

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 160.3

MAGLC (ug/m3): 2029

Physical changes to or 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 Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in 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 emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of



the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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. When the 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) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit 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.
- (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. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees



Fahrenheit below the average temperature established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;

- ii. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;
  - iii. any records of downtime (date and length of time) for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit(s) was/were in operation;
  - iv. a log of the operating time for the capture system, catalytic incinerator, monitoring equipment, and the emissions unit(s); and
  - v. all three-hour blocks of time, when the emissions unit was in operation, during which the permanent total enclosure was not maintained at the minimum pressure differential of 0.007 inches of water.
- 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 each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

f) Testing Requirements

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

- a. Emission Limitation:

Emissions of volatile organic compounds (VOC) shall not exceed 0.40 pound per hour from the application of coatings.

Applicable Compliance Method:

See f)(1)c.



Compliance with the short-term VOC emission limitation shall be demonstrated by multiplying the actual hourly coating usage rate, in gallons per hour, as applied by the actual coating VOC content, in pounds of VOC per gallon of coating, as applied, multiplied the applicable Emission Factor (EF) for styrene emitted, 0.52 pounds of styrene emitted per pound of VOC, multiplied by 1 minus the Control Efficiency (CE) of the catalytic oxidizer, yielding pounds of VOC emissions per hour, controlled.

The Applicable Emission Limitation was established from calculations using information supplied by the permittee in the Application for Permit to Install # 14-04764, issued on June 21, 2000:

1.524 gallons coating/hour x 2.6 pounds VOC/gallon coating x 0.52 pound styrene/pound VOC x (1 - 0.81 CE) = 0.39 pound VOC/hour, rounded to 0.40 pound VOC/hour

Where: CE = overall Control Efficiency of the catalytic oxidizer, minimum, based on SIP (OAC rule 3745-21-09(B)(6)); 81% or 0.81 expressed as a decimal

b. Emission Limitation:

Emissions of VOC shall not exceed 2.30 tons per year (TPY) from the application of coatings and cleanup material usage.

Applicable Compliance Method:

Compliance with the annual VOC emission limitation shall be demonstrated by a summation of the monthly VOC emissions as calculated in d)(1)e.

The Applicable Emission Limitation was established from calculations using information supplied by the permittee in the Application for Permit to Install # 14-04764, issued on June 21, 2000:

0.40 pound VOC/hour x 8760 hours/year x 1 Ton/2000 pounds = 1.75 TPY VOC, from coatings

150 gallons cleanup materials/year x 6.80 pounds VOC/gallon cleanup material x 1 Ton/2000 pounds = 0.51 TPY VOC, from cleanup materials

1.75 TPY VOC, from coatings + 0.51 TPY VOC, from cleanup materials = 2.26 TPY VOC, rounded to 2.30 TPY VOC

c. Emission Limitation/Capture & Control Requirement:

Emissions of volatile organic compounds (VOC) shall not exceed 0.40 pound per hour from the application of coatings.

The catalytic oxidizer shall be operated to achieve an overall control efficiency which is at least 81% by weight and a destruction efficiency which is at least 90% by weight.



A permanent total enclosure shall be constructed to totally enclose the application stations, coating reservoirs, and all areas from the application station to the oven and the control device, such that all volatile organic compound emissions are captured, contained, and directed to the control device.

The permanent total enclosure (PTE) serving this emissions unit shall be maintained in such a manner as to meet the criteria established for a permanent total enclosure in 40 CFR, Part 51, Appendix M, Reference Method 204, and shall capture all of the VOC emissions from this emissions unit.

**Applicable Compliance Method:**

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

- i. The emission testing shall be conducted within 6 months after issuance of this permit.
- ii. The emission testing shall be conducted to demonstrate compliance with, the hourly VOC emission limitation, the overall control efficiency and destruction efficiency requirements for VOC and the capture efficiency requirement for the permanent total enclosure.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

For VOC, Method 25 of 40 CFR Part 60, Appendix A and for capture efficiency, Method 2 of 40 CFR Part 60, Appendix A and Method 204 or 40 CFR Part 51, Appendix M.

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

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 3745-21-10 or an alternative test protocol approved by the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.



- iv. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.
- v. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
- vi. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- vii. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

d. Emission Limitation/Control Measure:

The VOC content for the varnishes employed in this emissions unit shall not exceed 2.60 pounds of VOC per gallon, as applied.

Applicable Compliance Method:

USEPA Methods 24 and 24A shall be used to determine the VOC contents for (a) coatings and (b) flexographic and rotogravure printing inks and related coatings, respectively. If, pursuant to Method 24 as outlined in 40 CFR Part 60, Appendix A, an owner or operator determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the USEPA and shall use formulation data for that coating or ink to



demonstrate compliance until the USEPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A.

e. Emission Limitation/Control Measure:

The VOC content of the cleanup materials employed in this emissions unit shall not exceed 6.80 pounds of VOC per gallon.

Applicable Compliance Method:

OAC rule 3745-21-10(B). Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and inks.

g) Miscellaneous Requirements

(1) None.