



Environmental Protection Agency

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

11/17/2011

Mr. Tim More  
Masco Cabinetry Middlefield LLC, (Plant #1)  
16052 Industrial Parkway  
P.O. Box 1055  
Middlefield, OH 44062

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE  
Facility ID: 0228000186  
Permit Number: P0108999  
Permit Type: Administrative Modification  
County: Geauga

Certified Mail

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

Dear Permit Holder:

Enclosed please find a final 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. Please complete a survey at [www.epa.ohio.gov/dapc/permitsurvey.aspx](http://www.epa.ohio.gov/dapc/permitsurvey.aspx) and give us feedback on your permitting experience. We value your opinion.

The issuance of this PTI 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  
309 South Fourth Street, Room 222  
Columbus, OH 43215

If you have any questions, please contact Ohio EPA DAPC, Northeast District Office at (330)425-9171 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. This permit can be accessed electronically on the DAPCWeb page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc), by clicking the "Issued Air Pollution Control Permits" link.

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-NEDO





**FINAL**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
Masco Cabinetry Middlefield LLC, (Plant #1)**

Facility ID:	0228000186
Permit Number:	P0108999
Permit Type:	Administrative Modification
Issued:	11/17/2011
Effective:	11/17/2011
Expiration:	10/15/2014





Division of Air Pollution Control
Permit-to-Install and Operate
for
Masco Cabinetry Middlefield LLC, (Plant #1)

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## Authorization

Facility ID: 0228000186  
Application Number(s): M0001427  
Permit Number: P0108999  
Permit Description: Agency-initiated administrative modification to remove uncontrolled emission limitations for each coating operations.  
Permit Type: Administrative Modification  
Permit Fee: \$0.00  
Issue Date: 11/17/2011  
Effective Date: 11/17/2011  
Expiration Date: 10/15/2014  
Permit Evaluation Report (PER) Annual Date: Oct 1 - Sept 30, Due Nov 15

This document constitutes issuance to:

Masco Cabinetry Middlefield LLC, (Plant #1)  
16052 INDUSTRIAL PKWY  
Middlefield, OH 44062

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

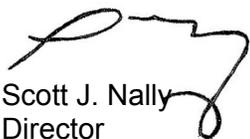
Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northeast District Office  
2110 East Aurora Road  
Twinsburg, OH 44087  
(330)425-9171

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

  
Scott J. Nally  
Director



## Authorization (continued)

Permit Number: P0108999

Permit Description: Agency-initiated administrative modification to remove uncontrolled emission limitations for each coating operations.

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

**Group Name: Coating Operation**

<b>Emissions Unit ID:</b>	<b>K001</b>
Company Equipment ID:	Overhead Conveyor line #1, spray booth #1
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K002</b>
Company Equipment ID:	Overhead conveyor line #1, spray booth #2
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K003</b>
Company Equipment ID:	Overhead conveyor line #1, spray booth #3
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K004</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #1
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K005</b>
Company Equipment ID:	Overhead conveyor line #1, spray booth #4
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K006</b>
Company Equipment ID:	Overhead conveyor line #1, spray booth #5
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K007</b>
Company Equipment ID:	Overhead conveyor line #1 spatter booth
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K008</b>
Company Equipment ID:	Spindle Spray booth
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K009</b>
Company Equipment ID:	Off-line spatter spray booth
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K010</b>
Company Equipment ID:	Flat line booth #1 and oven
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable

<b>Emissions Unit ID:</b>	<b>K011</b>
Company Equipment ID:	Off-line Spray booth #1
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K012</b>
Company Equipment ID:	Off-line Spray booth #2
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K013</b>
Company Equipment ID:	Off-line Spray booth #3 and oven
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K014</b>
Company Equipment ID:	Off-line Spray booth #4
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K015</b>
Company Equipment ID:	Off-line Spray booth #5
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K016</b>
Company Equipment ID:	Flat line #2 and oven
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K017</b>
Company Equipment ID:	Cefla #1 - 2 spray booths with ovens
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K018</b>
Company Equipment ID:	Cefla #2 - 2 spray booths with ovens
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K019</b>
Company Equipment ID:	Off-line spray booth #6
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K020</b>
Company Equipment ID:	Off-line spray booth #7
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K021</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #2
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K022</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #3
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K023</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #4
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable

<b>Emissions Unit ID:</b>	<b>K024</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #5
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K025</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #6
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K029</b>
Company Equipment ID:	Overhead conveyor line #2, spray booth #10
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K030</b>
Company Equipment ID:	Overhead Conveyor Line #1, Spray booth #6
Superseded Permit Number:	02-18557
General Permit Category andType:	Not Applicable

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

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

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

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

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

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

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

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

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

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

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

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

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement. 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 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 Ohio EPA DAPC, Northeast District Office 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<sup>1</sup> 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 emissions 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.

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<sup>1</sup>Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

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

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

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

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

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

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

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

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - (1) None.
  - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - (1) None.

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

1. **Emissions Unit Group -Coating Operation: K001, K002, K003, K004, K005, K006, K007, K008, K009, K010, K011, K012, K013, K014, K015, K016, K017, K018, K019, K020, K021, K022, K023, K024, K025, K029, K030,**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
K001	Spray paint recirculation booth 1 of overhead conveyor line 1 controlled by Thermal Oxidizer 2; (for wood cabinets)K001
K002	Spray paint recirculation booth 2 of overhead conveyor line 1, controlled by thermal oxidizer 2; (for wood cabinets)K002
K003	Spray paint recirculation booth 3 of overhead conveyor line 1, controlled by thermal oxidizer 2; (for wood cabinets)K003
K004	Spray paint recirculation booth 1 of overhead conveyor line 2, controlled by thermal oxidizer 2; (for wood cabinets)K004
K005	Spray paint recirculation booth 4 of overhead conveyor line 1, controlled by thermal oxidizer 2; (for wood cabinets)K005
K006	Spray paint recirculation booth 5 of overhead conveyor line 1, controlled by thermal oxidizer 2; (for wood cabinets) K006
K007	Spatter booth of overhead conveyor line 1, controlled by thermal oxidizer 2; (for wood cabinets) K006
K008	Spindle spray booth controlled by thermal oxidizer 2; (for wood cabinets) K005
K009	Off-line spatter spray booth controlled by thermal oxidizer 1; (for wood cabinets) K009
K010	Flat line booth 1 and oven controlled by thermal oxidizer 1; (for wood cabinets) K010
K011	Off-line spray paint booth 1 equipped with Thermal Oxidizer 1; (for wood cabinets) K011
K012	Off-line spray paint booth 2 equipped with Thermal Oxidizer 1; (for wood cabinets) K012
K013	Off-line spray paint booth 3 and electric oven equipped with Thermal Oxidizer 1; (for wood cabinets) K013
K014	Off-line spray paint booth 4 equipped with Thermal Oxidizer 1; (for wood cabinets) K014
K015	Off-line spray paint booth 5 equipped with Thermal Oxidizer 1; (for wood cabinets) K015
K016	Flat-line 2 and oven equipped with Thermal Oxidizer 1; (for wood cabinets) K016
K017	Cefla 1--Two spray paint booths with dedicated natural gas ovens controlled with a water curtain and Thermal Oxidizer 1; formerly R005 and R006 (for wood cabinets) K017
K018	Cefla 2--Two spray paint booths with dedicated natural gas ovens controlled with water curtain and Thermal Oxidizer 1; formerly R007(for wood cabinets) K018
K019	Off-line spray paint booth 6 equipped with Thermal Oxidizer 1; (for wood cabinets) K019
K020	Off-line spray paint booth 7 equipped with Thermal Oxidizer 1; (for wood cabinets) K020
K021	Spray paint booth 2 of overhead conveyor line 2 equipped with Thermal Oxidizer 2; (for wood cabinets) K021
K022	Spray paint booth 3 of overhead conveyor line 2 equipped with Thermal Oxidizer 2; (for wood cabinets) K022
K023	Spray paint booth 4 of overhead conveyor line 2 equipped with Thermal Oxidizer 2; (for wood cabinets) K023
K024	Spray paint booth 5 of overhead conveyor line 2 equipped with Thermal Oxidizer 2; (for wood cabinets) K024

- K025 Spray paint booth 6 of overhead conveyor line 2 equipped with Thermal Oxidizer 2; (for wood cabinets) K025
- K029 Spatter paint booth 10 of overhead conveyor line 2 equipped with Thermal Oxidizer 2; (for wood cabinets) K029
- K030 Spray paint booth 6 equipped with either Thermal Oxidizer 1 or Thermal Oxidizer 2; (for wood cabinets) K030

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

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

a. b)(1)e, d)(9), d)(10), d)(11), and d)(12).

(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)b, b)(2)f, d)(6)e, d)(6)h, d)(6)i, e)(4), f)(1)b, and f)(1)c.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	<p>The PTE and thermal incinerators together shall have a 99.0% overall reduction of volatile organic compound (VOC) emissions, by weight (100% capture efficiency and 99.0% destruction efficiency).</p> <p>Nitrogen oxides (NO<sub>x</sub>) emissions from the combustion of natural gas in both thermal oxidizers (TO) #1 and #2 together shall not exceed 4.88 lbs/hr and 21.38 tpy.</p> <p>Carbon monoxide (CO) emissions from the combustion of natural gas in both TO #1 and #2 together shall not exceed 4.10 lbs/hr and 17.96 tpy.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)a, b)(2)b, b)(2)c, b)(2)d, b)(2)e, c)(1), c)(2), c)(3) and c)(4) below.
b.	OAC rule 3745-31-05(D)(1)(b)	<p>VOC emissions from all emissions units contained in the PTE shall not exceed 47.0 tons per year, based upon rolling 12-month summation.</p> <p>Individual HAPs and total combined HAP emissions from all emissions units contained within the PTE shall not exceed 5.5 tons per year and 13.0 tons per year respectively, based upon a rolling 12-month summation.</p> <p>See b)(2)f below</p>
d.	40 CFR Part 63, Subpart JJ - National Emissions Standards for Wood Furniture Manufacturing Operations	See b)(2)g below.
e.	ORC 3704.03(F)(4)(c)	See d)(9), d)(10), d)(11), and d)(12) below.

(2) Additional Terms and Conditions

- a. The permanent total enclosure (PTE) serving these emissions units 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 it shall capture all of the VOC emissions from these emissions units and all the emission units contained within the PTE.
- b. The permittee shall use two thermal oxidizers during all coating operations, mixing of VOC-containing materials, and cleanup operations. The PTE shall enclose all sources associated with these emissions units and the emissions units contained within the PTE, including rag wipe operations and the collection of waste and/or recovered VOC-containing materials.
- c. If one of the two thermal oxidizers becomes inoperable during otherwise normal operation, a damper may be installed which shall divert all air flow (100%) to the thermal oxidizer in operation. In each such event in which one of the two thermal oxidizers becomes inoperable, the permittee shall ensure that the capacity of the remaining thermal oxidizer is not exceeded, by calculating the VOC usage in process and shall limit operations so as not to exceed its capacity.
- d. The volatile organic compound (VOC) content of the coatings (including stains, toners, glazes, topcoats, washes, spatters, and sealers) and solvents and support

materials (including cleanup materials and booth buffers) used by the permittee at this facility shall not exceed the following VOC content:

Coatings	7.5 lbs VOC/gallon
Solvents & Support Materials	9.0 lbs VOC/gallon
Spatter	9.0 lbs VOC/gallon

- e. The controlled VOC emissions shall not exceed the following:
  - i. For emissions units K001, K002, K003, K004, K008, K011, K013, K014, K019, K021, K022, and K023, 0.45 pound per;
  - ii. For emissions units K005, K006, K012, K015, K020, K024, K025, and K030, 1.50 pounds per hour;
  - iii. For emissions units K007, K009, and K029, 0.54 pound per hour;
  - iv. For emissions units K010 and K016, 0.075 pound per hour; and
  - v. For emissions units K017 and K018, 1.13 pounds per hour.
- f. Emissions from the PTE, which includes emissions units K001, K002, K003, K004, K005, K006, K007, K008, K018, K021, K022, K023, K024, K025, K029 and K030, controlled by thermal oxidizer #1 (at 95,000 cfm) and thermal oxidizer #2 (at 55,000 cfm), shall not exceed the following limits:
  - i. 47.0 tons of VOC per rolling 12-month period;
  - ii. 5.5 tons of any individual HAP per rolling 12-month period; and
  - iii. 13.0 tons of total combined HAPs per rolling 12-month period.
- g. This facility is not an affected source subject to the requirements of 40 CFR Part 63, Subpart JJ because it is not a major source, as defined in 40 CFR 63.2, for individual or total combined HAPs. The permittee shall not exceed the HAP emission limitations contained in this permit, without first obtaining a permit modification.

c) Operational Restrictions

- (1) The average combustion temperature within the thermal incinerators, for any 3-hour block of time when any of the emissions unit(s) contained in the PTE is/are in operation (including cleanup operations), shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated this emissions unit to be in compliance.
- (2) This emissions unit shall be totally enclosed within the PTE, such that all VOC/HAP emissions are captured, contained and vented to the thermal oxidizers. The permittee shall install continuous pressure monitors and a recorder which measures and records

the pressure drop across the permanent total enclosure; units shall be in inches of water or millimeters of mercury and shall be recorded as a three-hour average. The PTE shall meet all of the following criteria as specified in U.S. EPA Method 204:

- a. 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;
  - b. The total area of all natural draft openings shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling;
  - c. The direction of air flow through all natural draft openings shall be inward, with an average facial velocity of at least 3,600 m/hr (200 fpm), or alternatively, a pressure differential of 0.013 mm Hg (0.007 in. H<sub>2</sub>O) across the enclosure;
  - d. 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; and
  - e. All VOC/HAP emissions (100%) shall be captured and contained for discharge through the thermal oxidizers.
- (3) The maximum annual coating usage (including stains, toners, glazes, topcoats, wash, spatter, and sealers) from all the emissions units contained in the PTE shall not exceed 1,073,334 gallons per rolling 12-month period.
- (4) The maximum annual usage of solvents and support materials (including cleanup materials and booth buffer) from all the emissions units contained in the PTE shall not exceed 150,000 gallons per rolling 12-month period.
- d) **Monitoring and/or Recordkeeping Requirements**
- (1) The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the combustion temperatures within the thermal oxidizers when any of the emissions units contained in the PTE are in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
  - (2) The permittee shall collect and record the following information each day:
    - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when any emissions unit contained within the PTE was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated that the emissions unit to be in compliance;

- b. a log or record of the downtime for the capture/collection system (PTE, fans), thermal oxidizers, and monitoring equipment, when the associated emissions units were in operation; and
  - c. a record of all periods of time during which coatings and/or solvents/support materials were employed, and the VOC emissions were not vented to the thermal oxidizer.
- (3) Unless the PTE meets the requirements of term d)(3)c blow, the permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure. The monitor installed inside the PTE shall be placed at (near) the natural draft opening that has been determined to have the lowest differential pressure reading. The monitoring and recording devices shall be capable of accurately measuring the differential pressure and as a 3-hour average. The monitoring and recording devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The following information shall be recorded and maintained on a daily basis in order to demonstrate compliance with requirements for a PTE:
- a. A all 3-hour blocks of time when the emissions unit(s) was/were in operation, during which the permanent total enclosure was not maintained at or above the minimum pressure differential of 0.013 millimeters of mercury or 0.007 inches of water, as a 3-hour average; and
  - b. A log or record of downtime for the capture (collection) system (e.g. dysfunctional fans; open doors, where the 3-hour average minimum pressure differential was not maintained) when the emissions unit was in operation; or
  - c. If the facial velocity of air into the enclosure, through each natural draft opening to the PTE, is measured and can be maintained at 500 feet per minute (9,000 m/hr), flow indicator strips may be used in place of a flow meter or differential pressure gauge, and a daily record shall be recorded as to the normal or abnormal movement of the strip(s).
- (4) The permittee shall measure, document/calculate, and maintain a permanent record of the following information for the PTE and its natural draft openings:
- 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.
- (5) The permittee shall collect and record the following information each day for all emissions units contained in the PTE:
- a. The name and identification number/code of each coating (stain, toner, glazes, topcoats, wash, spatter, and sealers), solvent, and support material (cleanup materials and booth buffer);
  - b. The VOC content of each coating, solvent, and support material, identified in section d)(5)a above, in pounds per gallon or percent by weight;
  - c. The individual HAP (from Section 112 (b), list of hazardous air pollutants, 1990 Clean Air Act, Title III) content of each coating, solvent, and support material, identified in section d)(5)a above, in pounds per gallon or percent by weight;
  - d. The number of gallons or weight density of each VOC containing material applied, as identified in section d)(5)a above, from all the emissions units contained in the PTE, vented to and controlled by the thermal oxidizers;
  - e. The total uncontrolled VOC emissions rate from all coatings and solvent/support materials applied in the emissions units contained in the PTE, i.e.,  $(\sum \text{"b"} \times \text{"d"})$  for all materials, in pounds per day;
  - f. The total uncontrolled emission rates of each individual HAP from all coatings and solvent/support materials employed in the emissions units contained in the PTE, i.e.,  $\sum \text{"c"} \times \text{"d"}$  for all materials, in pounds per day;
  - g. The total uncontrolled emission rate of all HAPs collectively from all coatings and solvent/support materials employed in the emissions units contained in the PTE, i.e.,  $\sum \text{"f"}$  for all HAPs from all materials, in pounds per day;
  - h. The calculated, controlled VOC emission rate for all coatings and solvent/support materials employed in the emissions units contained in the PTE vented and controlled by the thermal oxidizers, in pounds per day;  
  
The controlled emission rate shall be calculated using the overall control efficiency for the thermal oxidizer as determined during the most recent emission test that demonstrated that the emissions unit was in compliance.
  - i. The calculated, controlled emission rate of each individual HAP for all coatings and solvent/support materials employed in the emissions units contained in the PTE vented and controlled by the thermal oxidizers, in pounds per day; and  
  
The controlled emission rate for each individual HAP shall be calculated using the overall control efficiency for the thermal oxidizer as determined during the most recent emission test that demonstrated that the emissions unit was in compliance.

- j. The calculated, controlled emission rate for all HAPs summed collectively, for all coatings and solvent/support materials employed in the emissions units contained in the PTE vented and controlled by the thermal oxidizers, in pounds per day.

The controlled emission rate for all HAPs shall be calculated using the overall control efficiency for the thermal oxidizer as determined during the most recent emission test that demonstrated that the emissions unit was in compliance.

- (6) The permittee shall collect and record the following information at the end of each month for all emissions units contained in the PTE, calculated from the sum of the daily records maintained during each month of record:
  - a. The sum of the daily controlled VOC emissions from all coatings, solvent and support materials applied in the PTE during the month of record;
  - b. If a solvent recovery credit is to be applied, the number of gallons or weight density of the VOC containing materials collected (at the end of each day) for recovery, recycle, and/or disposal at an outside facility; and the lowest VOC content, in pounds per gallon or percent by weight, of the all materials making up the volume of the recovered materials, or the VOC content of the material making up at least 90% of the recovered material;
  - c. If a solvent recovery credit is to be applied, the VOC credit, calculated by multiplying the gallons or weight of material collected for recovery/disposal by the minimum VOC content of the material or the VOC content of the material making up at least 90% of the recovered material , both from "b";
  - d. If a solvent recovery credit is to be applied, the net VOC emissions for the month, i.e., "a" – "c";
  - e. The total rolling 12-month controlled VOC emissions from all the materials employed in the emissions units contained in the PTE;
  - f. The sum of the daily totals of each individual controlled HAP emissions from all coatings, solvent and support materials applied in the PTE during the month of record;
  - g. The sum of the daily controlled combined HAPs emissions from all coatings, solvent and support materials applied in the PTE during the month of record;
  - h. The total rolling 12-month controlled emissions of each individual HAP from all the materials employed in the emissions units contained in the PTE;
  - i. The total rolling 12-month controlled emissions of the total combined HAPs from all the materials employed in the emissions units contained in the PTE;
  - j. The total number of gallons of coating (including stains, toners, glazes, topcoats, wash, spatter, and sealers) employed during the month;

- k. The total number of gallons of solvent and support material usage (including cleanup materials and booth buffer) employed during the month;
  - l. The rolling 12-month gallons of coating employed in the emissions units contained in the PTE; and
  - m. The rolling 12-month gallons of solvent and support material employed in the emissions units contained in the PTE.
- (7) If solvent is collected for recycle and/or disposal and the VOC content of the material is credited to monthly emission estimates, the permittee shall maintain a log of the weight density or gallons of material shipped off-site and the material's minimum VOC content or the VOC content of the material making up at least 90% of the volume credited to emission estimates. The credit shall be applied during the month the material is shipped, using the weight or volume, of record, shipped, less the weight of the drum or container.
- (8) If one of the thermal oxidizers becomes inoperable during otherwise normal operations, the calculation of the VOC usage in process during the downtime, a record of the corresponding capacity of the thermal oxidizer in operation; and a record noting the damper was closed to the inoperable unit.
- (9) The federally enforceable permit-to-install-and-operate (FEPTIO) application for these emissions units, K001-K025, K029 and K030, was evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units 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 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 results 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 emitted from the emissions units, (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 was divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard was then adjusted to account for the duration of the exposure or the operating hours of the emissions units, 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):

Compound	TLV (ug/m <sup>3</sup> )	MAGLC (ug/m <sup>3</sup> )	Emission Rate (g/sec)	Predicted 1-hr max. ground level conc. (ug/m <sup>3</sup> )	MAGLC exceeded (Y/N)
formaldehyde	271	6	0.00003	0.03	N
methanol	262,086	6,240	0.04	3.77	N
acetone	1,187,116	28,264	0.0018	0.18	N
MEK	589,775	14,042	0.11	11.18	N
Dibutyl Phthalate	5,000	119	0.00000003	0.0000003	N
naphthalene	52,429	1,248	0.00002	0.02	N
Cumene	245,787	5,852	0.00000003	0.00003	N
Ethylbenzene	434,192	10,338	0.05	5.38	N
MIBK	204,826	4,877	0.02	2.30	N
Toluene	188,405	4,486	0.10	9.95	N
Hexane	1,762,372	41,961	0.0002	0.00002	N
Xylene	434,192	10,338	0.24	24.14	N

The permittee, has demonstrated that emissions of HAP, from emissions unit(s) K001-K030, 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).

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

- (11) 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.
- (12) 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 quarterly deviation reports that identify the following information:
    - a. All 3-hour blocks of time during which the average combustion temperatures within each thermal oxidizer did not comply with the temperature limitation specified in this permit;
    - b. All periods of downtime for the capture (collection system, thermal oxidizer, and/or monitoring equipment, when any emissions units referenced in section b)(2)e above are in operation, including cleanup and mixing operations; and
    - c. All periods of time when the stack that bypasses the thermal oxidizer used while coating, mixing, and or cleanup operations are in process.
- The report shall include the number of hours or 3-hour blocks of time ("a") and the date of each occurrence.
- (2) The permittee shall submit quarterly deviation reports that identify any period of time during which any of these emissions units was/were in operation without the use of the thermal oxidizer(s), or the thermal oxidizer(s) was/were bypassed.
  - (3) The permittee shall submit quarterly deviation reports that identify any month during which the coating and/or the solvent/material support usage for all the emissions units contained in the PTE, exceeded the rolling 12-month usage limits of 1,073,334 gallons and 150,000 gallons respectively.
  - (4) The permittee shall submit quarterly deviation reports that identify any month during which the rolling 12-month VOCs, individual HAPs, or total combined HAP emissions from the entire facility, exceeded the rolling 12-month limits of 47.0 tons, 5.5 tons, and 13.0 tons respectively.

- (5) The permittee shall submit quarterly deviation reports that identify all 3-hour blocks of time (date and number of hours) during which the permanent total enclosure was not maintained at or above the minimum pressure differential of 0.013 millimeters of mercury or 0.007 inches of water, as a 3-hour average; and/or an identification of any period of time (date and number of hours) when the permanent total enclosure was not functioning properly, the cause (s) for the improper operation, and the corrective actions taken.
- (6) The permittee shall submit quarterly deviation reports that identify any of the following scenarios when the emissions unit was in operation:
- a. Any period of time in which a natural draft opening to the enclosure was located at a distance of less than four equivalent opening diameters, or less than 4 times the diameter of the opening, from any VOC emitting point;
  - b. Any period of time in which the total area of all natural draft openings exceeded 5 percent of the surface area of the enclosure's four walls, floor, and ceiling;
  - c. Any day in which the difference in pressure between the permanent total enclosure and the surrounding area(s) was measured at less than 0.013 mm Hg (0.007 in H<sub>2</sub>O), or the average facial velocity of the air through any natural draft openings was measured at less than 200 feet per minute (3,600 meters per hour), as a 3-hour average;
  - d. Any period of time in which an access door or window to the enclosure, that does not meet the requirements of a natural draft opening and whose surface area was not included in the 5 percent surface area determination, was not completely closed to air movement, unless a negative pressure was demonstrated and maintained;
  - e. Any period of time in which any access door or window was opened during process operations, causing a deviation from the differential pressure requirement, measured as a 3-hour average; and
  - f. Anything less than 100% of the VOC emissions was captured for discharge through the control device.

The report shall include the date and number of hours that the emissions unit was operating under each non-compliant scenario.

- (7) If one of the thermal oxidizers becomes inoperable during otherwise normal operations in any month, and the calculation of the VOC usage, in process during the downtime, exceeded the capacity of the thermal oxidizer in operation, a quarterly report shall be submitted for the exceedance, which shall include the date and number of hours during which the operating thermal oxidizer's capacity was exceeded.
- (8) The quarterly deviation reports shall be submitted as required by the Standard Terms and Conditions contained in section A of this permit, by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarter.

- (9) The permittee shall also submit an annual report for the previous calendar year which specifies the following:
- a. The total controlled VOC emissions from all emissions units contained in the PTE;
  - b. The total controlled individual HAP emissions from all emissions units contained in the PTE; and
  - c. The total controlled combined emissions fro all HAPs from all emissions units contained in the PTE.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitation  
0.45 lb VOC /hour from emissions unit K001  
  
Applicable Compliance Method:  
  
This limit was calculated by multiplying the maximum VOC content coating applied in this emissions unit (7.5 lbs VOC /gal) times the maximum hourly usage rate of K001 (6 gallons/hour) and times the control efficiency of the PTE and thermal oxidizers (100% - 99% control). This limit shall be added for all of the emissions units running during the stack test conducted in section f)(2) below to determine compliance with the sum of the emissions measured at the end of both thermal oxidizers stacks.  
  
U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04 (B)(5), to determine the VOC contents for all coatings. If, Pursuant to section 11.4 of Method 24, 40 CFR Part 60, Appendix A (revised as of July, 2001), an owner or operator determines that Method 24 cannot be used for a particular coating, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24. Formulation data or U.S. EPA Method 24 shall be used to determine the VOC contents of the cleanup materials.
  - b. Emission Limitation:  
47.0 tons VOC per rolling 12-month from the permanent total enclosure, including mixing and cleanup operations, for all the emissions units contained within the PTE

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in sections d)(5) and d)(6) above.

c. Emission Limitation:

Individual HAP and total combined HAPs emissions from all emisisions units located at this facility shall not exceed 5.5 tons per year and 13.0 tons per year respectively, based upon a rolling 12-month summation

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in sections d)(5) and d)(6) above.

d. Emission Limitation:

Nitrogen Oxides (NO<sub>x</sub>) emissions from the combustion of natural gas from both thermal oxidizers together shall not exceed 4.88 lbs/hr and 21.38 tpy

Applicable Compliance Method:

The following equation shall be used to determine the hourly emission rate:

$$E = (EF)(R)/(H)$$

Where,

E = emission rate, in lbs/hr;

EF = emission factor (AP-42, Section 1.4) for NO<sub>x</sub> is 100 lbs/mmcf;

R = maximum rating (heat input) reported to be 32 mmBtu/hr and 16.8 mmBtu/hr for thermal oxidizer #1 and thermal oxidizer #2, respectively; and

H = heating value of the natural gas, in Btu/ck. 1,000 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by the number of hours of operation per year (hrs/yr) and by the factor of 1 ton/2,000 lbs.

e. Emission Limitation:

Carbon Monoxide (CO) emissions from the combustion of natural gas from both thermal oxidizers together shall not exceed 4.1 lbs/hr and 17.96 tpy.

Applicable Compliance Method:

The following equation shall be used to determine the hourly emission rate:

$$E = (EF)(R)/(H)$$

Where,

E = emission rate, in lbs/hr;

EF = emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf;

R = maximum rating (heat input) reported to be 32 mmBtu/hr and 16.8 mmBtu/hr for thermal oxidizer #1 and thermal oxidizer #2, respectively; and

H = heating value of the natural gas, in Btu/ck. 1,000 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by the number of hours of operation per year (hrs/yr) and by the factor of 1 ton/2,000 lbs.

f. Emission Limitation:

99% overall reduction of VOC emissions, by weight (100% capture and 99.0% destruction)

Applicable Compliance Method:

Compliance shall be determined based upon performance testing required in Section f)(2) below.

- (2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. Emission testing shall be conducted within 6 months after installation is complete for all emissions units covered by this permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the overall destruction efficiency of the thermal oxidizers (99%), and the capture efficiency of the PTE (100%), and the hourly mass VOC emissions for all the emissions units in operation during the stack tests and compliance demonstration. IF any emissions unit is conducting cleanup operations during testing, 1% of the VOC content of the cleanup solvent shall be added to the permitted controlled emissions limits of the emissions units performing coating applications, from which the total shall be to compare with the stack test results for the compliance demonstration.
  - c. The following test methods shall be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for VOC:
    - i. Method 25 of 40 CFR, Part 60 Appendix A, if the VOC concentrations as carbon in the outlet are greater than 50 ppm; or

- ii. Method 25A of 40 CFR, Part 60 Appendix A, if the VOC concentrations as carbon in the outlet are less than 50 ppm; and
  - iii. Method 204 of 40 CFR, Part 51 Appendix M.
  - iv. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.
- d. The capture efficiency shall be determined using Method 204, as specified 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 "Guidelines for Determining Capture Efficiency", dated January 9, 1995. (The Ohio EPA will consider the request for the use of an alternative method, including an evaluation of the applicability, necessity, and validity of the alternative method, and may approve its use, if such approval does not contravene any other applicable requirement.)

The destruction efficiency, defined as the percent reduction of mass emissions between the inlet and outlet of the control system, shall be determined from the stack test results and in accordance with the test methods and procedures specified in Ohio Administrative Code 3745-21-10. 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. The permittee shall continuously measure and record the temperature within the thermal oxidizer during each test run.

- e. During the compliance demonstration for the permanent total enclosure, monitoring devices shall be operated to measure the average facial velocity of the air flow through each natural draft opening or the pressure differential across the enclosure at each natural draft opening.

If the facial velocity is measured at greater than 500 feet per minute (9,900 m/hr) the direction of air flow shall be assumed to be inward at all times during the compliance demonstration. If the volumetric flow rate is measured at less than 500 feet per minute, the continuous inward flow of air shall be verified at least once every 10 minutes for a minimum of 1 hour during the compliance demonstration, either by checking the flow or pressure meters; or through the use of streamers, smoke tubes, or tracer gases if the inward flow exceeds 500 feet per minute. All closed access doors and windows that are not considered natural draft openings shall also be checked once during the compliance demonstration for leakage around their perimeter using smoke tubes or tracer gases. If any door to the PTE is to be opened during process operation, the door shall be opened and the air flow shall be checked for demonstration of a negative pressure at the opening.

The permittee shall measure and record the flowing information for the permanent total enclosure and each natural draft opening:

- i. The diameter of each natural draft opening;
- ii. The distance measured from each natural draft opening to each VOC emitting point in the process;
- iii. The distance measured from each exhaust duct or hood in the enclosure to each natural draft opening; and
- iv. The total surface area of each natural draft opening and the surface area of the enclosure's four walls, floor, and ceiling.

Compliance with the requirements with for a PTE shall be demonstrated once the following determinations are documented:

- v. The average facial velocity at each natural draft opening is maintained at a minimum of 200 feet per minute (3,600 m/hr) or at a minimum pressure differential of 0.013 mm Hg (0.007 inch of water);
  - vi. Each natural draft opening is at a distance of at least four equivalent opening diameters, or 4 times the diameter of the opening, from each VOC emitting point in the process;
  - vii. The sum of the surface areas of all of the natural draft openings in the total enclosure are not more than 5 percent of the sum of the surface areas of the enclosure's four walls, floor, and ceiling; calculated by dividing the total area of all natural draft openings by the total inside surface area of the enclosure;
  - viii. There is no leakage detected at any of the closed access doors and windows, and it is certified that they always remain closed during process operations; and
  - ix. All VOC emissions captured by the PTE are entirely vented for discharge through the control device.
- f. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA Central or Northeast District Office.
  - g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).
  - h. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and

information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- i. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

g) Miscellaneous Requirements

- (1) None.