

Facility ID: 1409000411 Issuance type: Final State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1409000411 Emissions Unit ID: P038 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

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

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> | |
|---|---|---|--|
| mixer drier reactor # 1, with HEPA filter | OAC rule 3745-31-05(A)(3) (PTI 14-04435) | 0.1 lb of particulate emissions (PE)/hour 0.44 ton per year (TPY) of PE | |
| | | 0.1 lb of particulate matter emissions with a diameter of 10 microns or less (PM10) 0.44 TPY of PM10 emissions | |
| | | 0.43 lb of carbon monoxide (CO) emissions/hour 1.86 TPY of CO emissions | |
| | | 1.0 lb of ammonia emissions/hour 4.38 TPY of ammonia emissions | |
| | | 0.054 lb of sulfur dioxide (SO2) emissions/hour 0.24 TPY of SO2 emissions | |
| | | 2.63 lbs of volatile organic compound (VOC) emissions/hour 11.54 TPY of VOC emissions | |
| | | 0.6 lb of nitrogen oxides (NOx) emissions/hour 2.63 TPY of NOx emissions | |
| | | See Section A.2 below. | |
| | | OAC rule 3745-17-07(A)(1) | The visible PE limitation specified by this rule is the same as the visible PE limitation established pursuant to OAC rule 3745-31-05(A)(3). |
| | | OAC rule 3745-17-11(B)(1) | The PE limitation specified by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3). |

2. **Additional Terms and Conditions**
 - (a) Visible PE from any stack shall not exceed 20% percent opacity, as a six-minute average. The hourly and annual emission limitations specified in Section A.1 are based upon the emission unit's potential to emit. Therefore, no hourly or annual record keeping or reporting is required to demonstrate compliance with these emission limitations.

B. Operational Restrictions

1. The permittee shall burn only natural gas fuel when operating this emissions unit.
2. The permittee shall operate and maintain the use of a HEPA filter with a minimum control efficiency of 99%, by weight, for the control of PE from this emissions unit.

C. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit was evaluated based on the actual materials employed (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. Ohio EPA's "Review of New Sources of Air Toxics Emissions" policy ("Air Toxics Policy") was applied for each toxic 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 Acceptable Ground-Level Concentration (MAGLC).

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

Pollutant: Ammonia
 TLV (ug/m3): 17,430
 Maximum Hourly Emission Rate (lbs/hr): 1.0
 Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 48.5
 MAGLC (ug/m3): 415.0

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 Toxics Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxics Policy" will not be satisfied, the permittee shall not make the change. Changes that can affect the parameters used in the "Air Toxics Policy" include 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 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 Toxics Policy" will be satisfied with the above changes, 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 Toxics 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 Toxics Policy"; and

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

D. Reporting Requirements

1. The permittee shall notify the Hamilton County Department of Environmental Services of all times this emissions unit was in operation and did not employ the use of a HEPA filter and/or employed the use of an alternative fuel other than natural gas when this emissions unit was in operation. The reports shall be submitted within 30 days of any such occurrence.

E. Testing Requirements

1. Compliance with the PE, PM10, CO, ammonia, SO2, VOC and NOx emission limitations specified in Section A.1 and the visible PE limitation specified in Section A.2 shall be determined by the following methods:
 PE/PM10 Emission Limitation: 0.1 lb/hour and 0.44 TPY of PE; 0.1 lb/hour and 0.44 TPY of PM10 emissions

Applicable Compliance Method: The hourly PE/PM10 emission limitations are based upon the emissions unit's potential to emit from both the raw materials processed and the use of natural gas. The hourly PE/PM10 emissions were determined using the following methodology:

PE/PM10 emission rate from the raw materials processed:

$[\text{maximum hourly production rate (720 lbs/hour)}] \times [\text{the emission factor, as supplied by the permittee (0.001 lb of PE/PM10/lb of product)}] \times [1 - \text{the fractional control efficiency of the HEPA filter (0.99)}] = 0.072 \text{ lb of PE/PM10 emissions/hour}$

PE/PM10 emissions from natural gas used:

$\text{Maximum Hourly Natural Gas Usage} = (6 \text{ MMBTU/hour}) / (1 \text{ MMBTU}/1,000 \text{ cubic feet}) = 6 (1,000 \text{ cubic feet/hour})^*$

$[6 (1,000 \text{ cubic feet/hour})] \times [0.0045 \text{ lb of PE/PM10 emissions}/1,000 \text{ cubic feet}^{**}] = 0.03 \text{ lb/hour of PE/PM10 emissions}$

Total Hourly PE/PM10 Emissions = 0.072 lb/hour (from process) + 0.03 lb/hour (from natural gas) = 0.1 lb/hour

* maximum hourly natural gas usage rate supplied by permittee

** emission factor from AP-42, Chapter 1.4, "Natural Gas Combustion", Tables 1.4-1, 2 and 3, dated July, 1998

Compliance with the annual PE/PM10 emission limitation is ensured if compliance is maintained with the hourly

PE/PM10 emission limitation.

CO Emission Limitations: 0.43 lb/hour of CO emissions; 1.86 TPY of CO emissions

Applicable Compliance Method: The hourly CO emission limitation is based upon the emissions unit's potential to emit from both the raw materials processed and the use of natural gas. The hourly CO emissions were determined using the following methodology:

CO emission rate from the raw materials processed:

[maximum hourly production rate (720 lbs/hour)] x [the emission factor, as supplied by the permittee (0.0004 lb of CO emissions/lb of product)] = 0.3 lb of CO emissions/hour

CO emissions from natural gas used:

[6 (1,000 cubic feet/hour)] x [0.021 lb of CO emissions/1,000 cubic feet**] = 0.13 lb/hour of CO emissions

Total Hourly CO Emissions = 0.3 (from process) + 0.13 (from natural gas) = 0.43 lb/hour of CO emissions

** emission factor from AP-42, Chapter 1.4, "Natural Gas Combustion", Tables 1.4-1, 2 and 3, dated July, 1998

Compliance with the annual CO emission limitation is ensured if compliance is maintained with the hourly CO emission limitation.

Ammonia Emission Limitations: 1.0 lb/hour of ammonia emissions; 4.38 TPY of ammonia emissions

Applicable Compliance Method: The hourly ammonia emission limitation is based upon the emissions unit's potential to emit and was determined by using the following equation:

Hourly Ammonia Emission Rate:

maximum production rate (720 lbs/hour) x facility supplied emission factor (0.0014 lb of ammonia emissions/lb of product) = 1.0 lb of ammonia emissions/hour

Compliance with the annual ammonia emission limitation is ensured if compliance is maintained with the hourly ammonia emission limitation.

SO2 Emission Limitations: 0.054 lb/hour of SO2 emissions; 0.24 TPY of SO2 emissions

Applicable Compliance Method: The hourly SO2 emission limitation is based upon the emissions unit's potential to emit from both the raw materials processed and the use of natural gas. The hourly SO2 emissions were determined using the following methodology:

SO2 emission rate from the raw materials processed:

[maximum hourly production rate (720 lbs/hour)] x [the emission factor, as supplied by the permittee (0.0006 lb of SO2 emissions/lb of product)] = 0.05 lb of SO2 emissions/hour

SO2 emissions from natural gas used:

[6 (1,000 cubic feet/hour)] x [0.00007 lb of SO2 emissions/1,000 cubic feet**] = 0.004 lb/hour of SO2 emissions

Total Hourly SO2 Emissions = 0.05 (from process) + 0.004 (from natural gas) = 0.054 lb/hour of SO2 emissions

** emission factor from AP-42, Chapter 1.4, "Natural Gas Combustion", Tables 1.4-1, 2 and 3, dated July, 1998

Compliance with the annual SO2 emission limitation is ensured if compliance is maintained with the hourly SO2 emission limitation.

VOC Emission Limitations: 2.63 lbs/hour of VOC emissions; 11.54 TPY of VOC emissions

Applicable Compliance Method: The hourly VOC emission limitation is based upon the emissions unit's potential to emit from both the raw materials processed and the use of natural gas. The hourly VOC emissions were determined using the following methodology:

VOC emission rate from the raw materials processed:

[maximum hourly production rate (720 lbs/hour)] x [the emission factor, as supplied by the permittee (0.0036 lb of VOC emissions/lb of product)] = 2.6 lbs of VOC emissions/hour

VOC emissions from natural gas used:

[6 (1,000 cubic feet/hour)] x [0.0058 lb of VOC emissions/1,000 cubic feet**] = 0.03 lb/hour of VOC emissions

Total Hourly VOC Emissions = 2.6 (from process) + 0.03 (from natural gas) = 2.63 lbs/hour of VOC emissions

** emission factor from AP-42, Chapter 1.4, "Natural Gas Combustion", Tables 1.4-1, 2 and 3, dated July, 1998

Compliance with the annual VOC emission limitation is ensured if compliance is maintained with the hourly VOC emission limitation.

NOx Emission Limitations: 0.6 lb/hour of NOx emissions; 2.63 TPY of NOx emissions

Applicable Compliance Method: The hourly NOx emission limitation is based upon the emissions unit's potential to emit and was determined by using the following equation:

NOx emissions from natural gas used:

[6 (1,000 cubic feet/hour)] x [0.1 lb of NOx emissions/1,000 cubic feet**] = 0.6 lb/hour of NOx emissions

** emission factor from AP-42, Chapter 1.4, "Natural Gas Combustion", Tables 1.4-1, 2 and 3, dated July, 1998

Compliance with the annual NOx emission limitation is ensured if compliance is maintained with the hourly NOx emission limitation.

Visible PE Limitation: Visible PE from any stack shall not exceed 20% percent opacity, as a six-minute average.

Applicable Compliance Method: Compliance with the visible PE limitation shall be determined by Test Method 9 of 40 CFR, Part 60, Appendix A.

HEPA Filter Control Efficiency Restriction: minimum control efficiency of 99%, by weight, for the control of PE/PM10

Applicable Compliance Method: Compliance with the HEPA control efficiency restriction shall be based upon the manufacturer's guaranteed performance standard for the control efficiency for PE/PM10.

F. **Miscellaneous Requirements**

1. None