

Facility ID: 1409030749 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: 1409030749 Emissions Unit ID: P003 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> |
|---|---|--|
| P003- 750 gallon fixed-roof, solvent blend tank w/ submerged fill | OAC rule 3745-31-05(A)(3) (PTI 14-04992) | Organic Compound (OC) emissions shall not exceed 8 pounds per hour, 40 pounds per day and 7.3 TPY. |
| | OAC rule 3745-21-07(G)(2) | The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(2). Organic Compound (OC) emissions shall not exceed 8 pounds per hour and 40 pounds per day. |

2. **Additional Terms and Conditions**
 - (a) Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by emissions limitations, compliance with the air toxics policy and the use of submerged fill (bottom fill method) for the blending operations.

B. Operational Restrictions

1. None

C. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information for each day for the blending operation:
 - a. The company identification of each organic compound employed.
 - b. The number of gallons of each organic compound employed.
 - c. The number of gallons of each organic compound employed each hour of the day.
 - d. The organic compound content of each organic compound, in pounds per gallon.
 - e. The number of batches blended in emissions unit P003.
 - f. The duration of the batch, in minutes.
 - g. The molecular weight of the organic compound, in lb-lbmole.
 - h. The gas-phase mass transfer coefficient (K) for each organic compound, x, employed in the blend, in ft./sec. Reference the equations in section E.2.
 - i. The organic compound fraction (zx) for each organic compound, x, employed in the blend, in lb/lb.
 - j. The liquid mole fraction (m) for each organic compound employed in the blend, in mole/mole, and as calculated in section E.2.
 - k. The vapor pressure (Vp), in psia, and the vapor mole fraction (Yx), in psia, for each organic compound employed in the blend . Reference Testing Requirements, section E.2.
 - l. The partial pressure of each organic compound, x, (Px), in psia, at temperature, in degrees R and the total pressure for the blend (P), in psia. Reference Testing Requirements, section E.2.
 - m. The vapor molecular weight (M), for all compounds employed in the blend, in lb/lb-mole.

- n. The mean ambient temperature, in degrees Rankine.
 - o. The area of the blend tank, in square feet.
 - p. The total organic compound emission rate for all organic compounds, in pounds per day. Reference Testing Requirements in section E.2.
 - q. The total organic compound emission rate for all organic compounds, in pounds per hour for each hour of the day when materials were blended. Reference Testing Requirements in section E.2.
2. The permit to install for this emissions unit (P003) 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 : Methylene Chloride

TLV (ug/m3): 173,700

Maximum Hourly Emission Rate (lbs/hr): 1.466

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 139.8

MAGLC (ug/m3): 4136

The above described evaluation determined that the maximum ground level concentration for the new or modified source was less than 80% of the MAGLC. Per ORC 3704.03(F)(4)(d), the owner or operator shall submit an annual report that describes any changes to the emissions unit that affect the air toxic modeling. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
- 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.).

The permittee shall submit annual reports that describe any changes to this emissions unit which affect the air toxic modeling. If no changes were made during the year, then a report shall be submitted stating that no changes were made. This report is due by January 31 of each year and shall cover the previous calendar year.

D. Reporting Requirements

- 1. The permittee shall submit deviation (excursion) reports which include the following information:
 - a. An identification of each hour during which the organic compound emissions from the blending operation exceeded 8 pounds per hour, and the actual organic compound emissions for each such hour. If there were no deviations, a report is required stating so.
 - b. An identification of each day during which the organic compound emissions from the blending operation exceeded 40 pounds per day, and the actual organic compound emissions for each such day. If there were no deviations, a report is required stating so.
- 2. The permittee shall submit annual reports which specify the total organic compound emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
- 3. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

- 1. Emissions Limitation:
Organic Compound (OC) emissions shall not exceed 8 pounds per hour, 40 pounds per day and 7.3 TPY.
- Applicable Compliance Method:
Compliance shall be demonstrated by the recordkeeping required in section C.1.
- To calculate organic compound emissions from emissions unit P003, the permittee shall use the equation for Emissions Model for Surface Evaporation, Equation 8.4-18 and Emissions Model for Material Loading, Equation 8.4-1, from EIIP Volume II, Chapter 8, Paint and Ink Manufacturing. This information can be found at the web site - www.epa.gov/ttnchie1/techreport/volume02/ii08.pdf.
- Total organic emissions during blending (lbs./hour) =
mixing losses (Eq. 8.4-18) + loading losses (Eq. 8.4-1)
- Kx = gas-phase mass transfer coefficient, ft/sec, for organic compound species, x.

$K_x = 0.00438 * U^{0.788} * [(18/M_x)^{1/3}]$ where $U=0.1$ mph and M_x is the molecular weight of the organic compound.

m_x = liquid mole fraction for organic compound species x , in mole/mole.
 $m_x = (z_x/M_x \text{ for one organic compound in the blend}) / (\text{sum of } z_x/M_x \text{ for all organic compounds in the blend})$
where z_x is the fraction of the blend for organic compound x , in lb/lb and M_x is the molecular weight of organic compound, x .

Y_x = vapor mole fraction = P_x/P = the partial pressure for organic compound x divided by the vapor pressure of all compounds in the blend. P = the sum of P_x for all compounds in the blend.

M = vapor molecular weight, in lb/lb-mole, = the sum of $Y_x * M_x$ for all species in the blend.

2. Should more accurate emissions factors be developed during the current permit cycle, the permittee shall use the more accurate information provided the new emissions factors are mutually agreeable to the Ohio EPA, Hamilton County Dept. of Environmental Services and the permittee.

F. Miscellaneous Requirements

1. None