

ADDITIONAL SPECIAL TERMS AND CONDITIONS

I. **Description**

1. PTI application 02-11997 is for the installation of a Palmer M-2000 mixer (emissions unit F021), located in foundry 2 for producing sand for molds.

II. Operational Restrictions

1. The maximum annual operating hours for this emissions unit shall not exceed 4250 hours.

III. Record Keeping Requirements

1. The permittee shall collect and record the following information each day:
 - a. The name and identification number of each liquid organic material employed.
 - b. The weight, in pounds or tons, of sand and liquid organic material mixed.
 - c. The number of hours of operation.
 - d. The daily organic compound emission rate (pounds) using an emission factor of 0.413 lb OC per ton of sand mixed.
 - e. The average hourly organic compound emission rate (d)/(c).

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which include the following information on emissions unit F021:
 - a. An identification of each day during which the average hourly organic compound emissions exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day.
 - b. An identification of each day during which the organic compound emissions exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

These reports shall be submitted to the Ohio EPA, NEDO, by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

2. The permittee shall submit annual reports which identify any exceedances of the annual operating hours limitation, as well as the corrective actions that were taken to achieve

compliance. These reports shall be submitted by January 31 of each year.

V. Compliance Method Determination

Compliance with the emission limitations in this permit shall be determined in accordance with the following methods:

1. Emission Limit: 4.65 lbs per hour of particulate matter

Applicable compliance method: Compliance with the above limitation shall be demonstrated by using the following equation:

$$E = Ts \times 0.275 \text{ lb PM/tn sand}$$

where

E = pounds particulate matter emitted per hour

Ts = tons sand used per hour

0.275 lb PM/ tn sand is an emission factor based on AP-42 Table 12.10-7 and a sand to metal ratio of 4:1

2. Emission Limit: 9.9 tons per year of particulate matter

Applicable compliance method: Compliance with the above limitation shall be demonstrated by using the following equation:

$$E = Ts \times 0.275 \text{ lb PM/tn sand} \times 1 \text{ ton}/2000 \text{ lbs}$$

where

E = tons particulate matter emitted per year

Ts = tons sand used per year

0.275 lb PM/ tn sand is an emission factor based on AP-42 Table 12.10-7 and a sand to metal ratio of 4:1

3. Emission Limit: Visible emissions not to exceed 5% opacity

Applicable compliance method: Compliance with the above limitation shall be demonstrated by U.S. EPA reference method 9.

4. Emission Limit: 8 lbs/hr and 40 lbs/day of organic compounds

Applicable compliance method: Compliance with the above limitations shall be demonstrated by the recordkeeping requirements from section III.1 of these terms and conditions

and the following equation:

To determine the daily organic compound emission rate from this emissions unit, the following equation shall be used:

$$E = Ts \times 0.413 \text{ lb OC/tn sand}$$

where:

E = organic compound emission rate (pounds)

Ts = tons of sand mixed

0.413 = organic compound emission factor, based on lab test data provided by Ashland Chemical on Chem-Rez resin (a modified furan resin system)

If the type of the resin changes, the permittee shall determine a new emission factor based on supplier's test data.

5. Emission Limit: 7.3 tons per year organic compounds

Applicable compliance method: Compliance with the above limitation shall be demonstrated by a summation of the daily organic compound emissions and by the recordkeeping requirements from section III.1 of these terms and conditions.

VI. Miscellaneous Requirements

1. This permit allows the use of the resins specified by the permittee in the application for PTI number 02-11997. Compliance with the Ohio EPA's "Air Toxics Policy" was demonstrated for methyl alcohol based on the SCREEN3 model and a comparison of the predicted 1 hour maximum ground-level concentration to the MAGLC. The following summarizes the results of the modeling for each pollutant:

Pollutant: Methyl Alcohol

TLV (ug/m3): 262,000

Maximum Hourly Emission Rate (lbs/hr): 3.0

Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 439.5

Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 6200

Any of the following changes may be deemed a "modification" to the emissions unit and, as such, prior notification to and approval from the appropriate Ohio EPA District Office or local air agency are required, including the possible

issuance of modifications to PTI number 02-11997 and the operating permit:

- a. Any changes in the composition of the resins, or the use of new resins, 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 specified in the above table.
- b. Any change to the emissions unit or its exhaust parameters (e.g., increased emission rate, reduction of exhaust gas flow rate, and decreased stack height) that would result in an exceedance of any MAGLC specified in the above table.
- c. Any change to the emissions unit or its method of operation that would either require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01.