

Facility ID: 1483080196 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: 1483080196 Emissions Unit ID: P019 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>
ASM #61 epitaxial reactor with wet scrubber	OAC rule 3745-31-05(A)(3) (PTI 14-04959)	0.014 lb/hr of hydrogen chloride (HCl) emissions 0.06 TPY of HCl emissions
		See Section A.2 below.
	OAC rule 3745-31-05(D)	See Section A.2 below.
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from any stack associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)(1)	0.551 lb of PE/hour

2. Additional Terms and Conditions

- (b) The actual emissions of hazardous air pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from this facility shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above emission limitations shall be based on a rolling, 12-month summation.
The hourly and annual HCl emission limitations specified in Section A.1 are based upon the emissions unit's potential to emit. Therefore, no hourly and annual records are required to demonstrate compliance with these emission limitations.

B. Operational Restrictions

1. The static pressure at the inlet of the scrubber shall be continuously maintained at a value between -2.0 inches of water and 1.0 inch of water (-0.4 TORR to 2.0 TORR) at all times while the emissions unit is in operation.
2. The scrubber water recirculation flow rate shall be continuously maintained at a value of not less than 10 gallons per minute at all times while the emissions unit is in operation.
3. The make-up water flow rate into the scrubber shall be maintained at a value of not less than 1 gallon per minute at all times when the emissions unit is in operation.

C. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure at the inlet of the scrubber, the scrubber water recirculation flow rate and make-up water flow rate into the scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
2. The permittee shall collect and record the following information each day for this emissions unit:
 - a. the static pressure at the inlet of the scrubber, in inches of water, on a once per day basis;
 - b. the scrubber water recirculation flow rate, in gallons per minute, and the scrubber water make-up flow rate, in gallons per minute, on a once per day basis; and
 - c. the operating times for the capture (collection) system, control device, monitoring equipment, and the

associated emissions unit.

3. The permittee shall collect and record the following information each month for the entire facility:
 - a. the name and identification of each raw material employed;
 - b. for all epitaxial reactors, the amount of controlled emissions of each HAP, in tons;
 - c. for all other emissions units, the amount of any other material used that contains HAPs, in tons;
 - d. for all emissions units, the individual HAP content for each HAP of each material used, in percent by weight;
 - e. the total individual HAP emissions for each HAP from all materials employed, in tons [for each HAP the sum of (b) plus (c x d/100)];
 - f. the total combined HAP emissions from all materials employed, in tons (the sum of all HAPs as calculated in (e));
 - g. the updated rolling, 12-month summation of each individual HAP emissions, in tons (this shall include the information for the current month and the preceding eleven calendar months); and
 - h. the updated rolling, 12-month summation of total combined HAP emissions, in tons (this shall include the information for the current month and the preceding eleven calendar months).

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Hamilton County Department of Environmental Services contact. This information does not have to be kept on a individual emissions unit basis.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. the static pressure at the scrubber inlet;
 - b. the scrubber water recirculation flow rate; and
 - c. the scrubber water make-up flow rate.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month HAP emission limitations of 9.9 and 24.9 tons for any single HAP and combination of HAPs, respectively.
3. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.
4. The permittee shall submit annual reports that specify the individual and combined HAP emissions, in tons, for the previous calendar year. These reports shall be submitted by January 30 of each year for the preceding calendar year.

E. Testing Requirements

1. Compliance with the visible PE limitation and the HCl, PE and HAP emission limitations specified in Sections A.1 and A.2 and the scrubber operational restrictions specified in Section B shall be determined by the following methods:

HCl Emission Limitation: 0.014 lb/hr of HCl emissions; 0.06 TPY of HCl emissions

Applicable Compliance Method: The hourly and annual HCl emissions limitations are based upon the emissions unit's potential to emit and were established by first taking the maximum amount of HCl used per hour in the process and adding to it the amount of trichlorosilane used times 0.8 (the amount of trichlorosilane which is available to convert to HCl). The resulting number is then multiplied by 1 - the fractional control efficiency of the wet scrubber (0.99) to obtain the hourly HCl emission rate.

Compliance with the annual emission limitation is ensured if compliance is maintained with the hourly HCl emission limitation. The annual HCl emission limitation was established by multiplying the hourly HCl emission rate (0.014 lb/hour) by 8,760 (maximum potential operating hours) and dividing by 2,000 lbs/ton.

HAP Emission Limitations: 9.9 TPY for any single HAP; 24.9 TPY for any combination of HAPs

Applicable Compliance Method: Compliance with the HAP emission limitations shall be determined by the record keeping requirements specified in Section C.3.

Visible PE Limitation: Visible PE from any stack associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.

Applicable Compliance Method: Compliance with the visible PE limitation shall be determined by Test Method 9 of 40 CFR, Part 60, Appendix A, pursuant to OAC rule 3745-17-03(B)(1).

Scrubber Operational Restrictions: static pressure at the inlet to be maintained at a value between -2.0 and 1.0 inches of water column; the scrubber water recirculation flow rate to be maintained at a value of not less than 10 gallons per minute; the make-up water flow rate into the scrubber to be maintained at a value of not less than 1 gallon per minute

Applicable Compliance Method: Compliance with the operational restrictions for the wet scrubber shall be determined by the record keeping requirements specified in Sections C.1 and C.2.

PE Limitation: 0.551 lb of PE/hour

Applicable Compliance Method: The compliance method for this limitation is emission testing pursuant to 40 CFR, Part 60, Appendix A, Test Methods 1 through 5, and the procedures specified in OAC rule 3745-17-03(B)(10).

F. Miscellaneous Requirements

1. Modeling to demonstrate compliance with Ohio EPA's "Air Toxics Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.