State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL **CERTIFIED MAIL**
FRANKLIN COUNTY

Street Address: Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329 Mailing Address: Lazarus Gov. Center

Application No: 01-08310

DATE: 2/27/2001

The Ohio State University
Cecil Smith
1314 Kinnear Rd
Columbus, OH 43212

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 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. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo

Thomas G. Rigo
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA **CDO**

FINAL PERMIT TO INSTALL 01-08310

Application Number:	01-08310
APS Premise Number:	0125042608
Permit Fee:	**$400**
Name of Facility:	The Ohio State University
Person to Contact:	Cecil Smith
Address:	1314 Kinnear Rd Columbus, OH 43212

Location of proposed air contaminant source(s) [emissions unit(s)]:
2003 Millikin Rd
Columbus, Ohio

Description of proposed emissions unit(s):
Rhodes Hall ETO #1, sterilizer with associated accessories.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. The operating conditions existing at the time of sampling or measurement.

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. Quarterly written reports of (i) any deviations from federally enforceable <u>emission limitations</u>, <u>operational restrictions</u>, <u>and control device operating parameter limitations</u>, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous

calendar quarters. See B.11 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.
Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit To Install fees within 30 days after the issuance of this Permit To Install.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are

required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit To Operate Application

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

B. State Only Enforceable Permit To Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

5. Termination of Permit To Install

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete

within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

6. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

7. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

8. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other

emissions unit(s).

9. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

10. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

C. Permit To Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
Ethylene Oxide	0.25
HCFC	2.2

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(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 specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P001 - Ethylene Oxide Sterilizer	OAC 3745-31-05 (A)(3)	Ethylene Oxide emissions shall not exceed 1.34 lbs/hr and 0.25 ton/yr. HCFC emissions shall not exceed 12.06 lbs/hr and 2.2 tons/yr. See II.A.2.a-c below.

2. Additional Terms and Conditions

2.a The sterilization operation shall be limited to one (1) cycle per day.

2.b The requirements of OAC rule 3745-21-07(G) do not apply because no liquid organic materials are being used in the sterilization process. Both ethylene oxide and HCFC are gases at standard conditions.

2.c This permit is applicable for the use of a sterilant gas that contains 10% ethylene oxide and 90% HCFC. The use of sterilant gas with a higher ethylene oxide concentration requires the approval of the Ohio EPA, Central District Office.

II. Operational Restrictions

1. There shall be no fugitive emissions of ethylene oxide from this emissions unit.

2. The concentration of ethylene oxide in the sterilant gas employed in this emissions unit shall not exceed 10%.

III. Monitoring and/or Recordkeeping Requirements

1. The maximum number of cycles per day for this emissions unit shall not exceed one (1) per day.

2. The permittee shall maintain weekly records of the pounds of sterilant gas used, including any supporting analyses and computations, and of any exceedance(s) of the ethylene oxide emission limitation specified in Section A.1.

IV. Reporting Requirements

1. The permittee shall maintain daily records of the operating cycles for this emissions unit.

2. The permittee shall submit annual reports by February 15 stating the amount of sterilant gas used.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

   a. Emission Limitation:

      Ethylene Oxide emissions shall not exceed 1.34 lbs/hr

      Applicable Compliance Method:
      Compliance demonstrated by restricting the sterilization operation to one (1) cycle per day which yields just one ventilation period that consumes less than one (1) hour, hence lb(s)/hr = lb(s)/day. In addition, multiply 13.4 lbs/day by 10% (% of ethylene oxide):
      13.4 lbs/day * 0.10 = 1.34 lbs/day = 1.34 lbs/hr

   b. Emission Limitation:

Emissions Unit ID: P001

HCFC emissions shall not exceed 12.06 lbs/hr

Applicable Compliance Method:
Compliance demonstrated by restricting the sterilization operation to one (1) cycle per day which yields just one ventilation period that consumes less than one (1) hour, hence lb(s)/hr = lb(s)/day. In addition, multiply 13.4 lbs/day by 90% (% of HCFC):
13.4 lbs/day * 0.90 = 12.06 lbs/day = 12.06 lbs/hr

c. Emission Limitation:

Ethylene Oxide emissions shall not exceed 0.25 ton/yr

Applicable Compliance Method:
Compliance demonstrated by restricting the sterilization operation to one (1) cycle per day which yields just one ventilation period that consumes less than one (1) hour, hence lb(s)/hr = lb(s)/day. In addition, multiply 13.4 lbs/day by 10% (% of ethylene oxide), multiply this result by 365 days per year and divide by 2000 pounds per ton:
13.4 lbs/day * 0.10 * 365 days/yr / 2000 lbs/ton = 0.25 ton ethylene oxide/yr

d. Emission Limitation:

HCFC emissions shall not exceed 2.2 tons/yr

Applicable Compliance Method:
Compliance demonstrated by restricting the sterilization operation to one (1) cycle per day which yields just one ventilation period that consumes less than one (1) hour, hence lb(s)/hr = lb(s)/day. In addition, multiply 13.4 lbs/day by 90% (% of HCFC), multiply this result by 365 days per year and divide by 2000 pounds per ton:
13.4 lbs/day * 0.90 * 365 days/yr / 2000 lbs/ton = 2.2 tons HCFC/yr

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(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 specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P001 - Ethylene Oxide Sterilizer		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for this emissions unit 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 Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Chlorodifluoro methane

TLV (mg/m3): 3536.6

Maximum Hourly Emission Rate (lbs/hr): 12.06

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 158

MAGLC (ug/m3): 353.6

Pollutant: Ethylene Oxide

TLV (mg/m3): 180

Maximum Hourly Emission Rate (lbs/hr): 1.34

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 158

MAGLC (ug/m3): 180

Physical changes to or changes 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 Toxic 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 Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. 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 (typically for coatings or cleanup materials), 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 Toxic Policy" 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(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 still satisfy the "Air Toxic 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 Toxic Policy"; and

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

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Emissions Unit ID: P001

NEW SOURCE REVIEW FORM B

PTI Number: 01-08310 Facility ID: 0125042608

FACILITY NAME The Ohio State University

FACILITY DESCRIPTION Rhodes Hall ETO #1, sterilizer with associated accessories. CITY/TWP Columbus

SIC CODE 8221 SCC CODE EMISSIONS UNIT ID P001

EMISSIONS UNIT DESCRIPTION Ethylene Oxide Sterilizer

DATE INSTALLED December 1988

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM_{10}					
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics	Ethylene Oxide HCFC	1.34 lbs/hr 12.06 lbs/hr	0.25 2.2	1.34 lbs/hr 12.06 lbs/hr	0.25 2.2

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?
See additional terms and conditions.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? yes

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? $

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? YES x NO

IDENTIFY THE AIR CONTAMINANTS: Chlorodifluoro methane and ethylene oxide

Emissions Unit ID: P001

NEW SOURCE REVIEW FORM B

PTI Number: 01-08310 Facility ID: 0125042608

FACILITY NAME The Ohio State University

FACILITY DESCRIPTION Rhodes Hall ETO #1, sterilizer with associated accessories. CITY/TWP Columbus

Ohio EPA Permit to Install Information Form Please describe below any documentation which is being submitted with this recommendation (must be sent the same day). Electronic items should be submitted with the e-mail transmitting the PTI terms, and in software that CO can utilize. If mailing any hard copy, this section must be printed as a cover page. All items must be clearly labeled indicating the PTI name and number. Submit hard copy items to Pam McGraner, AQM&P, DAPC, Central Office, and electronic files to airpti@epa.state.oh.us

Please fill out the following. If the checkbox does not work, replace it with an 'X'	Electronic	Additional information File Name Convention (your PTI # plus this letter)	Hard Copy	None
Calculations (required)	☒	0000000c.wpd	☐	
Modeling form/results	☐	0000000s.wpd	☒	☐
PTI Application (complete or partial)*	☐	0000000a.wpd	☐	☒
BAT Study	☐	0000000b.wpd	☐	☒
Other/misc.	☐	0000000t.wpd	☐	☒

*** Mandatory for netting, PSD, nonattainment NSR, 112(g), 21-07(G)(9)(g) and 21-09(U)(2)(f) - 2 complete copies.**

Please complete (see comment bubble to the left for additional instructions):

NSR Discussion

The Ohio State University is requesting a PTI for an Ethylene Oxide and HCFC Sterilizer for its hospital located at Rhodes Hall. This request will not significantly increase the potential emissions from the facility. The sterilizer operates one (1) cycle per day, lasting approximately fourteen (14) hours. Upon completion of the sterilization cycle, the sterilant is ventilated to the atmosphere. The sterilant consists of 10% ethylene oxide and 90% HCFC (Chlorodifluoro methane and Chlorotetrafluro methane). Chlorodifluoro methane has a TLV and the yearly emissions exceed one (1) ton per year, thereby triggering Ohio Air Toxics Policy. Conversely, ethylene oxide is exempt to this policy due to emissions of less than one (1) ton per year, but was also modeled due to its' low TLV.

Screen 3 results indicate concentrations less than the MAGLC. Hard copies of the modeling have been provided for review.

The sterilant is a gas in its standard state and therefore, does not meet the definition of a "photochemically reactive material". Consequently, it is not subject to 3745-21-07 (B). 3745-31-05 (A)(3) is applicable and utilized to establish the emission limitations.

All hourly emissions are taken from the application and based on numerous mass sampling and maximum rated capacity. The pound(s) per hour and pound(s) per day are equivalent due to the additional terms and conditions which require only one sterilization cycle per day in which the ventilation period takes less than one (1) hour.

The calculations are as follows**:**

P001: Ethylene Oxide Sterilizer

Emissions Unit ID: P001

NEW SOURCE REVIEW FORM B

PTI Number: 01-08310 Facility ID: 0125042608

FACILITY NAME The Ohio State University

FACILITY DESCRIPTION	Rhodes Hall ETO #1, sterilizer with associated accessories.	CITY/TWP	Columbus

Assumptions:
10% ethylene oxide;
90% HCFC;
13.4 lbs/day (cycle) of material used (application 12/19/00);
1.34 lbs/day (cycle) of ethylene oxide;
12.06 lbs/day HCFC;
One (1) cycle per day and one (1) ventilation period per day that consumes less than one (1) hour;
lb(s)/hr = lb(s)/day; and
365 maximum operating days per year.

Potential to emit:
13.4 lbs/day * 0.10 = 1.34 lbs/day of ethylene oxide
13.4 lbs/day * 0.90 = 12.04 lbs/day of HCFC
1.34 lbs/day * 365 days/yr / 2000 lbs/ton = 0.25 ton ethylene oxide/yr
12.06 lbs/day * 365 days/yr / 2000 lbs/ton = 2.2 tons HCFC/yr

Please complete for these type permits (For PSD/NSR Permit, place mouse over this text):

☐ **Synthetic Minor Determination and/or** ☐ **Netting Determination**

Permit To Install ENTER PTI NUMBER HERE

A. Source Description

B. Facility Emissions and Attainment Status

C. Source Emissions

D. Conclusion

PLEASE PROVIDE ADDITIONAL NOTES OR COMMENTS AS NECESSARY:
NONE

Please complete:

SUMMARY (for informational purposes only)

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
Ethylene Oxide	0.25
HCFC	2.2