AIR QUALITY PERMIT

Permit No. **Effective Date**
7389-067-0093-S-05-0 **May 27, 2014**

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Rules, Chapter 391-3-1, adopted pursuant to and in effect under that Act,

Facility Name: **Sterigenics U.S. LLC**

Mailing Address: 2015 Spring Road, Suite 650
Oak Brook, Illinois 60523

is issued a Permit for the following:

Operation of an ethylene oxide and propylene oxide sterilization facility. The Permit is also for the installation and operation of a 30-pallet sterilization chamber and an aeration room. This Permit is issued for the purpose of establishing practically enforceable emission limitations such that the facility will not be considered a major source with respect to Title V of the Clean Air Act Amendments of 1990.

Facility Location: 2973 Olympic Industrial Drive
Smyrna, Georgia 30080 (Cobb County)

This Permit is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq, the Rules, Chapter 391-3-1, adopted and in effect under that Act, or any other condition of this Permit.

This Permit may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in Application No. 22479 dated March 11, 2014; any other applications upon which this Permit is based; supporting data entered therein or attached thereto; or any subsequent submittals or supporting data; or for any alterations affecting the emissions from this source.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **8** pages.

[Signed]
Director
Environmental Protection Division

1. General Requirements

1.1 At all times, including periods of startup, shutdown, and malfunction, the Permittee shall maintain and operate this source, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection or surveillance of the source.

1.2 The Permittee shall not build, erect, install or use any article, machine, equipment or process the use of which conceals an emission which would otherwise constitute a violation of an applicable emission standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant in the gases discharged into the atmosphere.

1.3 The Permittee shall submit a Georgia Air Quality Permit application to the Division prior to the commencement of any modification, as defined in 391-3-1-.01(pp), which may result in air pollution and which is not exempt under 391-3-1-.03(6). Such application shall be submitted sufficiently in advance of any critical date involved to allow adequate time for review, discussion, or revision of plans, if necessary. The application shall include, but not be limited to, information describing the precise nature of the change, modifications to any emission control system, production capacity and pollutant emission rates of the plant before and after the change, and the anticipated completion date of the change.

1.4 Unless otherwise specified, all records required to be maintained by this Permit shall be recorded in a permanent form suitable for inspection and submission to the Division and shall be retained for at least five (5) years following the date of entry.

1.5 In cases where conditions of this Permit conflict with each other for any particular source or operation, the most stringent condition shall prevail.

2. Allowable Emissions

2.1 The Permittee shall comply with all applicable provisions of the National Emission Standard for Hazardous Air Pollutants (NESHAP) as found in 40 CFR 63 Subpart O – "Ethylene Oxide Emission Standards for Sterilization Facilities," for the operation of the EtO sterilization equipment.
[40 CFR 63 Subpart O; 40 CFR 63.360]

2.2 The Permittee shall comply with all applicable provisions of the National Emission Standard for Hazardous Air Pollutants (NESHAP) as found in 40 CFR 63 Subpart A – "General Provisions".
[40 CFR 63 Subpart A]

2.3 The Permittee shall reduce ethylene oxide emissions to the atmosphere from each sterilization chamber vent (Source Codes: SEV-1, SEV-2, SEV-3, SEV-4, SEV-5, SEV-6, SEV-7, SEV-8, SEV-9, SEV-10) by at least 99%.
[40 CFR 63 Subpart O; 40 CFR 63.362(c); Avoidance of 40 CFR Part 70 for HAP; Avoidance of Non-Attainment New Source Review for VOC emissions]

2.4 The Permittee shall reduce ethylene oxide emissions to the atmosphere from each aeration vent (Source Codes: AR-1, AR-11, AR-12, AR-13) to a maximum concentration of 1 part per million, volume basis, (ppmv), or by at least 99%, whichever is less stringent.
[40 CFR 63 Subpart O; 40 CFR 63.362(d); Avoidance of 40 CFR Part 70 for HAP; Avoidance of Non-Attainment New Source Review for VOC emissions]

2.5 The emission limits in Condition 2.3 and 2.4 apply during sterilization operation. The emission limits do not apply during periods of malfunction.
[40 CFR 63 Subpart O; 40 CFR 63.362(b)]

2.6 The Permittee shall only fire natural gas in any industrial, commercial, or institutional boiler, as defined in 40 CFR 63.11237, on site. For purposes of this Permit Condition a natural-gas fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.
[Avoidance of 40 CFR 63 Subpart JJJJJJ]

3. Fugitive Emissions

3.1 The Permittee shall take all reasonable precautions with any operation, process, handling, transportation, or storage facilities to prevent fugitive emissions of air contaminants.

4. Process & Control Equipment

4.1 Routine maintenance shall be performed on all air pollution control equipment. Maintenance records shall be recorded in a permanent form suitable and available for inspection by the Division. The records shall be retained for at least five (5) years following the date of such maintenance.

4.2 A spare parts inventory for control equipment shall be maintained by the Permittee.

4.3 Malfunctioning components of air pollution control systems shall be repaired as expeditiously as possible.

5. Monitoring

5.1 Any continuous monitoring system required by the Division and installed by the Permittee shall be in continuous operation and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Monitoring system response, relating only to calibration checks and zero and span adjustments, shall be measured and recorded during such periods. Maintenance or repair shall be conducted in the most expedient manner to minimize the period during which the system is out of service.
[391-3-1-.02(6)(b)1.]

5.2 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the AAT Scrubber System (Source Code: EC2) and the Ceilcote Scrubber (Source Code: EC3). Data shall be recorded at the frequency specified in Conditions 5.3 and 5.4. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirement.
[391-3-1-.02(6)(b)1.]

5.3 For sterilization facilities complying with 40 CFR 63.363 through the use of an acid-water scrubber (AAT Scrubber System with Source Code EC2) and Ceilcote Scrubber (Source Code: EC3), the Permittee shall either:
[40 CFR 63.364(b) and 391-3-1-.02(6)(b)1.]

a. Sample and analyze the scrubber liquor and record once per week the ethylene glycol concentration of the scrubber liquor using test methods and procedures in 40 CFR 63.365(e)(1). Monitoring is required during a week only if the scrubber unit has been operated; or

b. Measure and record once per week the level of the scrubber liquor in the recirculation tank and the pH of the scrubber liquor for each of the scrubbers. The Permittee shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.). The level of the scrubber liquor recirculation tank shall be maintained at or below the levels established during the initial performance testing. The pH levels of the scrubber liquor shall be maintained in accordance with the pH levels recommended by the manufacturers.

5.4 The Permittee shall maintain and operate the AAT Scrubber System (Source Code: EC2) to ensure a maximum emission level of 1 ppmv or a reduction of 99% for aeration room vents (Source Codes: AR-1, AR-11 through AR-13) and a reduction efficiency of 99% for sterilization chamber vents (Source Codes SEV-1 through SEV-10):
[391-3-1-.02(6)(b)1.]

a. Aeration room vents (Source Codes: AR-1, AR-11 through AR-13) – Once per month, the Permittee shall simultaneously collect and record the concentrations of a 15-minute ethylene oxide bag sample from both the inlet and the outlet of the dry bed adsorbers:

i. If the facility is complying with the 1 ppmvd standard, as specified in Condition No. 2.4, and the concentration of ethylene oxide in the outlet sample of the dry bed adsorbers increases to 0.9 ppmv or greater, the Permittee shall replace the dry bed material within 30 days, prior to the next scheduled aeration room exhaust sampling event.

ii. If the facility is complying with the 99% reduction efficiency standard, as specified in Condition No. 2.4, and the AAT Scrubber System reduction efficiency decreases to 99.1% or less, the Permittee shall replace the dry bed material within 30 days, prior to the next scheduled aeration room exhaust sampling event. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed adsorbers.

b. Aeration room vents (Source Codes: AR-1, AR-11 through AR-13) and sterilization chamber vents (Source Codes SEV-1 through SEV-10) – Any instance when sterilization chamber exhausts and aeration room exhausts are simultaneously vented through the AAT Scrubber System, the Permittee shall comply with the 99% reduction efficiency standard. During any such event, the Permittee shall collect and record the concentration of a 15-minute ethylene oxide bag sample from the outlet of the dry bed adsorbers within 96 hours of the changeover. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed adsorbers. If the reduction efficiency for the AAT Scrubber System is less than 99.1%, the Permittee shall not route any sterilization chamber exhausts through the AAT Scrubber System until the dry bed material has been replaced. Bag testing shall continue at a sampling frequency of once per week during the changeover of the sterilization chamber vents from the Ceilcote Scrubber (Source Code: EC3) to the AAT Scrubber System.

c. When the Permittee is sampling in accordance with Condition Nos. 5.3.a.ii or 5.3.b, the ethylene oxide loading to the AAT Scrubber System, the ethylene oxide mass out of the AAT dry adsorbers, and the AAT Scrubber System reduction efficiency shall be recorded for each sampling event. These records shall be kept in a form suitable for inspection or submission to the Division. Methods of calculation for these measurements shall be submitted in the site-specific monitoring plan.

d. The dates of dry bed material replacement shall be recorded and kept in a form suitable for inspection or submission to the Division.

6. Performance Testing

6.1 The Permittee shall cause to be conducted a performance test at any specified emission point when so directed by the Division. The following provisions shall apply with regard to such tests:

a. All tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants.

b. All test results shall be submitted to the Division within sixty (60) days of the completion of testing.

c. The Permittee shall provide the Division thirty (30) days prior written notice of the date of any performance test(s) to afford the Division the opportunity to witness and/or audit the test, and shall provide with the notification a test plan in accordance with Division guidelines.

d. All monitoring systems and/or monitoring devices required by the Division shall be installed, calibrated and operational prior to conducting any performance test(s). For any performance test, the Permittee shall, using the monitoring systems and/or monitoring devices, acquire data during each performance test run. All monitoring system and/or monitoring device data acquired during the performance testing shall be submitted with the performance test results.

6.2 Within 60 days of achieving the maximum production rate for ethylene oxide sterilization chamber SEV-10, but not later than 180 days after startup, the Permittee shall conduct ethylene oxide performance testing according to the procedures listed in 40 CFR 63.7 according to the applicability in Table 1 of 40 CFR 63.360, the procedures listed in 40 CFR 63.363, and the test methods listed in 40 CFR 63.365.
[40 CFR 63 Subpart O; 40 CFR 63.363 and 63.365]

6.3 Within 60 days of achieving the maximum production rate for aeration chamber AR-1, but not later than 180 days after startup, the Permittee shall conduct ethylene oxide performance testing according to the procedures listed in 40 CFR 63.7 according to the applicability in Table 1 of 40 CFR 63.360, the procedures listed in 40 CFR 63.363, and the test methods listed in 40 CFR 63.365.
[40 CFR 63 Subpart O; 40 CFR 63.363 and 63.365]

7. Notification, Reporting and Record Keeping Requirements

Recordkeeping

7.1 The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative. The Permittee shall retain these records for a period of at least five (5) years after the date of any such startup, shutdown, or malfunction.

7.2 The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this Permit. The information shall be recorded in a permanent form suitable and available for inspection and shall be retained for at least five (5) years following the date of such measurements maintenance, reports, and records.

7.3 The Permittee shall maintain general records and CMS records as specified by 40 CFR 63.10(b)(2) and (c), respectively, and Table 1 of 40 CFR 63 Subpart O.
[40 CFR 63 Subpart O; 40 CFR 63.367(a)]

Reporting Requirements

7.4 For each monthly sampling event conducted in accordance with Conditions 5.4.a.i and 5.4.b, the Permittee shall include the following information in the semiannual report required by Condition 7.8.
[391-3-1-.02(6)(b)1.]

a. For the AAT Scrubber System (Source Code EC2), any occurrence when analysis of the dry bed adsorber outlet sample indicates that the concentration exceeds 1 ppmv.

b. For the AAT Scrubber System (Source Code EC2), any occurrence when AAT Scrubber System reduction efficiency indicates that the efficiency is less than 99%.

c. For the acid-water scrubbers [AAT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the ethylene glycol concentration in the acid-water scrubber liquor is in excess of the maximum ethylene glycol concentration established during initial performance testing.
[40 CFR 63.363(b)(2)]

d. For the acid-water scrubbers [AAT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the liquor recirculation tank level of the acid-water scrubber is in excess of the maximum liquor tank level established during initial performance testing.
[40 CFR 63.363(b)(2)]

e. For the acid-water scrubbers [AAT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the scrubbing liquor pH rises above the manufacturers' recommended level of 2.

f. For the AAT Scrubber System (Source Code EC2), any occurrence when analysis of the dry bed adsorber outlet sample indicates that the concentration exceeds 0.9 ppmv, but is less than or equal to 1 ppmv.

g. For the AAT Scrubber System (Source Code EC2), any occurrence when AAT Scrubber System reduction efficiency indicates that the efficiency is less than 99.1%, but is greater than or equal to 99%.

h. For the AAT Scrubber System (Source Code EC2), any instance when the AAT Scrubber System breaches a dry bed adsorber material replacement threshold, but the dry bed material is not replaced within 30 days.

7.5 The Permittee shall provide the following information, in writing, to the Division for Sterilization Chamber 10 (Source Code: SEV-10) and Aeration Room 1 (Source Code: AR-1).
[40 CFR 63 Subpart O; 40 CFR 63.366(c)(1)(ii)]

a. A notification of the date when construction was commenced, delivered or postmarked no later than 30 days after such date.

b. A notification of the anticipated date of startup, delivered or postmarked not more than 60 days nor less than 30 days before such date; and

c. A notification of the actual date of initial startup, delivered or postmarked within 15 calendar days after that date.

7.6 In accordance with 40 CFR 63.10, 63.366(a), and Table 1 of 40 CFR 63 Subpart O, the Permittee shall submit the following reports:
[40 CFR 63 Subpart O; 40 CFR 63.366(a)]

a. Deviation reports; and

b. Continuous Monitoring System performance and summary reports.

Contents and submittal dates for Deviation and Continuous Monitoring System Performance Reports shall be as specified in 40 CFR 63.366(a)(3).

7.7 The Permittee shall submit a written report containing any excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each semiannual period ending June 30 and December 31 of each year. All reports shall be postmarked by the 30th day following the end of each reporting period, July 30 and January 30, respectively. In the event that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's **Procedures for Testing and Monitoring Sources of Air Pollutants** and shall contain the following:
[391-3-1-.02(6)(b)1.; 40 CFR 63.10(e)]

a. A summary report of excess emissions, exceedances and excursions, and monitor downtime, in accordance with Section 1.5(c) and (d) of the above referenced document, including any failure to follow required work practice procedures.

b. Total process operating time during each reporting period.

c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of occurrence.

d. Specific identification of each period of such excess emissions, exceedances, and excursion that occur during startups, shutdowns, or malfunctions of the affected facility. Include the nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

f. Certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

8. Special Conditions

8.1 At any time that the Division determines that additional control of emissions from the facility may reasonably be needed to provide for the continued protection of public health, safety and welfare, the Division reserves the right to amend the provisions of this Permit pursuant to the Division's authority as established in the Georgia Air Quality Act and the rules adopted pursuant to that Act.

8.2 The Permittee shall calculate and pay an annual Permit fee to the Division. The amount of the fee shall be determined each year in accordance with the "Procedures for Calculating Air Permit Fees."

8.3 All Georgia Air Quality Permits previously issued to this facility, including Air Quality Permit No. 7389-067-00093-V-04-0, are hereby revoked in their entirety.