

Facility Name: Kendall Healthcare Products Company

City: Augusta

County: Richmond

AIRS #: 04-13-245-00109

Application #: TV- 9144

Date Application Received: 10/22/96

Date Application Deemed

Administratively Complete: 6/11/97

Date of Draft Permit: 6/12/97

Permit No: 3842-245-0109-V-01-0

Program	Review Engineers	Review Managers
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Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to Kendall Healthcare Products Company and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name: Kendall Healthcare Products Company
2. Parent/Holding Company Name: The Kendall Company
3. Previous and/or Other Name(s): The Kendall Company
4. Facility Location: 1430 Marvin Griffin Road
Augusta, Georgia 30906
5. Attainment or Non-attainment Area Location:
Richmond County - Attainment Area
6. Class I Area Impacts: There are no Class I areas within 100 km of this source.

B. Site Determination: There are no site determination issues with this facility.

C. Existing Permits

Table 1: List of Current Permits, as Amended

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
3842-121-12375	February 20, 1997	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
3842-121-12375	Issued to include a catalytic thermal oxidizer and the conditions required by 40 CFR 63 Subpart O. Revoked Air Quality Permit 3842-121-10326.

D. Process Description

1. SIC Code: 3842 - Surgical appliances and supplies
2. Description of Product(s):
Kendall manufactures surgical sponges, non-woven sponges and alcohol prep pads for the healthcare industry. The facility also packages non-woven prep pads that are 70% isopropyl alcohol.
3. Overall Facility Process Description
 - a. **Gauze Production** - Gauze material is received by the facility in bulk form and is converted into various gauze-based products. This process includes steam generation by two boilers, bleaching and drying of gauze, converting operations for folding and packaging and sterilization of the products. The sterilization of the products takes place in either Ethylene Oxide or steam. Ethylene Oxide is used on products that cannot withstand high temperatures. For the EtO sterilization the products are placed in a sterilization chamber which is then sealed and filled with

EtO gas. After a certain residence time, the EtO is evacuated and the packages are moved to an aeration room where any residual EtO disperses. The products are then ready for shipping.

Emissions from this process occur at three general areas: EtO conversion, fugitive emissions and point source losses. The point source losses are controlled by a catalytic thermal oxidizer. There are four sterilization chambers, each having two point sources, and three aeration rooms, each having one point source. The exhaust are routed to a common stack and are routed through the catalytic thermal oxidizer before going to the atmosphere.

- b. **Alcohol Pad Production** - Non-woven cloth is saturated with 70% isopropyl alcohol and sealed in foil packages. Emissions from this process are less than 10,000 lb/year.
- c. **Support Facilities** - This includes several small storage tanks, laboratory hoods, small natural gas fired units and a polystyrene recycling unit.

4. Overall Process Flow Diagram: See Attachment

E. Regulatory Status

1. PSD/NSR
Not Applicable

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's Title V status?		
		Major Source Status	Major Source requesting SM Status	Non-Major Source Status
PM	✓			✓
PM ₁₀	✓			✓
SO ₂	✓	✓		
VOC	✓			✓
NO _x	✓			✓
CO	✓			✓
TRS	n/a			
H ₂ S	n/a			
Individual HAP*	✓	✓		
Total HAPs	✓	✓		

* HAP- Ethylene Oxide

3. MACT Standards
Subject to 40 CFR 63 Subpart O - "Ethylene Oxide Emissions Standards for Sterilization Facilities"

4. Program Applicability

Program Code 6 - PSD:	no	Program Code M:	yes Subpart O
Program Code 8 - NESHAP:	no	Program Code V:	yes
Program Code 9 - NSPS:	yes 40 CFR 60 Subpart Dc		

Regulatory Analysis**II. Requirements for Entire Facility**

A. Emission and Operating Caps: The facility is limited to 1.83 lb/hr of EtO emissions from the source. This limit was established by the Toxic Guidelines to moderate the toxic impact. The facility is in compliance with this emission limit.

B. Applicable Rules and Regulations:

- Rules and Regulations Assessment - The facility is subject to 40 CFR 63 Subpart O - Ethylene Oxide Emissions from Sterilization Facilities. The MACT has a compliance date of December 6, 1998. It applies to major and area sources and is based on the usage of EtO by the facility. Hospitals are the only sources exempt from this regulation. The facility is expected to be in compliance by the December deadline.

The facility is subject to the following Georgia State Rules:

391-3-1-.02(2)(b)	Visible Emissions
391-3-1-.02(2)(d)	Fuel Burning Equipment
391-3-1-.02(2)(g)	Sulfur Dioxide*
391-3-1-.02(2)(6)	Source Monitoring

* While No. 2B boiler is subject to Rule (d) and (g), NSPS Dc is more stringent. Therefore, compliance with NSPS Dc assures compliance with Rule (g).

- Emission and Operating Standards - The Ethylene Oxide MACT requires certain reduction be made with respect to the sterilization chamber and the aeration room. For the specific requirements see Section III. Permit condition 2.2.1 states the facility's applicability to this regulation. It is a federal regulation.

C. Compliance Status: A Section 11.10 form indicating noncompliance with any Federal or State rule was not submitted by the facility.

D. Operational Flexibility: The facility has not requested any operational flexibility in their Title V application. There are currently no new rules, regulations or work practices that will be applicable to this source for the purposes of operational flexibility.

E. Permit Conditions:

Conditions for the Title V permit Part 2.0 include the following:

- Condition 2.2.1 states the facility is subject to 40 CFR 63 Subpart O.
- Condition 2.4.1 limits the ethylene oxide emissions from the facility to 1.83 pounds per hr. This limit was

based on the Air Toxic Guideline.

III. Requirements for Emission Units

A. Brief Process Description:

- (1) Sterilization Process consists of four (4) sterilization chambers and three (3) aeration rooms with one common stack controlled by a catalytic thermal oxidizer. For process description see Gauze Production in Section I D. - Overall Process Description. This process is regulated by 40 CFR 63 Subpart O. Ethylene Oxide is the pollutant emitted by this process.
- (2) Boiler 2B is a 31.5 million BTU/hr Industrial Boiler. It burns primarily natural gas and burns No. 2 fuel oil as a backup. This boiler is used to produce steam for the different plant processes. It is subject to NSPS Dc due to its capacity and date of construction. It is also subject to Georgia State Rules 391-3-1-.02(2)(b) Visible Emissions; (d) Fuel Burning Equipment; (g) Sulphur Dioxide. The NSPS regulation is more stringent than Georgia Rule (d) and (g). Therefore, compliance with the NSPS regulation assures compliance with rule (d) and (g). The boiler emits NO_x, SO₂, CO, PM and PM₁₀.
- (3) Boiler 1B is a 29.4 million BTU/hr Cleaver Brooks Boiler. It burns primarily natural gas and burns No. 2 fuel oil as a backup. This unit is not subject to NSPS Dc because it was constructed in 1968 and has had no changes since that time. This boiler is subject to Georgia Air Quality Rules 391-3-1-.02(2)(b) Visible Emissions, (d) Fuel Burning Equipment and (g) Sulfur Dioxide. This boiler is used to produce steam for the facility. The boiler emits NO_x, SO₂, CO, PM and PM₁₀.

B. Equipment List for the Process:

Table 4: Equipment List and Source Code

Emission Unit ID No.	Emission Unit Description	Applicable Permit Condition No.(s)	Applicable Requirement(s)/Standard(s)	Air Pollution Control Device ID No.(s)
1B	700 HP Cleaver Brooks Boiler	3.4.1, 3.4.2, 3.4.3	391-3-1-.02(d), 391-3-1-.02(b), 391-3-1-.02(g)	
2B	700 HP Industrial Boiler	3.3.5, 3.3.6, 3.3.7, 3.4.4, 6.2.1, 6.2.2	40 CFR 60 Subpart Dc 391-3-1-.02(d)	
RV1-RV4	EtO Sterilizer Chambers	3.3.1, 3.3.2, 3.3.4, 4.2.1, 4.2.2 to 4.2.8	40 CFR 63 Subpart O	CO-1
DR1-DR3	Aerator Rooms	3.3.3, 4.2.1, 4.2.2 to 4.2.8, 5.2.2	40 CFR 63 Subpart O	CO-1

D. Compliance Status: The facility has not indicated any noncompliance issues in Section 11.10 of their Title V.

E. Operational Flexibility: The facility has not requested in operational flexibility in their Title V application.

F. Permit Conditions: The following conditions have been included in the Title V permit and are equipment

specific:

- Condition 3.3.1 requires the reduction of ethylene oxide emissions from each sterilizer chamber vent by at least 99%. [40 CFR 63.362(c)]
- Condition 3.3.2 requires the Permittee to either manifold the chamber exhaust vent to a control device or reduce the ethylene oxide emissions from each chamber exhaust vent by at least 99%. [40 CFR 63.362(e)(1)]
- Condition 3.3.3 requires the reduction of ethylene oxide emissions from each aeration room to 1 ppm by volume or less or at least by 99%. [40 CFR 63.632(d)]
- Condition 3.3.4 states the emission limits on ethylene oxide apply during sterilization operation. [40 CFR 63.632(a)]
- Condition 3.3.5 specifies the fuel oil requirements for No. 2B boiler. [40 CFR 60.48(c)]
- Condition 3.3.6 states the No. 2B boiler is subject to the provisions of 40 CFR 60 Subpart Dc.
- Condition 3.3.7 limits the sulfur percentage in any fuel oil burned in boiler 2B to no more than 0.5. [40 CFR 60.42(c)]
- Condition 3.4.1 subjects boiler 1B to Rule (b). This condition limits the opacity from boiler 1B to forty percent. [391-3-1-.02(2)(b)]
- Condition 3.4.2 subjects boiler 1B to Rule (d). This limits boiler 1B to the emission rate derived from $E=0.7*(10/R)^{0.202}$. At a maximum firing rate of 29.4 million Btu/hr, the emission rate is 0.563 pounds per million Btu of heat input. [391-3-1-.02(2)(d)]
- Condition 3.4.3 limits the sulfur percentage in any fuel oil burned in boiler 1B to no more than 2.5. [391-3-1-.02(2)(g)]
- Condition 3.4.4 limits the opacity from boiler No. 2B to 20 % except for one six minute period per hour of not more than 27%. [391-3-1-.02(2)(d)3]

The following condition has not been included in this permit; however, it was part of Air Quality Permit 3842-121-12375. The facility requested in their Title V application to remove this condition.

- Condition 26 requires a spare parts inventory for any continuous monitoring systems installed by the facility. This condition was incorporated due to boiler 2B. The boiler is subject to NSPS Dc. At the time of the original permit, Dc was undergoing modification. It was to have included a requirement for continuous opacity monitoring of the boiler; however, this requirement was never incorporated into Dc. Therefore, the facility has requested to have this condition removed.

IV. Requirements for Testing

A. General Testing Requirements

None of the regulations applicable to Boilers 1B and 2B requires performance testing, therefore the permit does not contain any conditions to require specific testing for either of the natural-gas fired boilers. The permit does specify that a performance test may be required at anytime upon request by EPD to determine compliance with the emissions limits contained in Parts 2.0 and 3.0 and test methods for measuring emissions are listed in Condition 4.1.3.

B. Specific Testing Requirements

1. The MACT for Ethylene Oxide requires that the sterilization chamber and the aeration chamber vents which are manifolded to an oxidizer meet a certain reduction. Condition 4.2.1 of the permit requires a performance test to be conducted to determine the destruction efficiency of the catalytic oxidizer and establish an operating temperature for monitoring purposes. A general condition to require the notification of any such test and for the submission of a test plan is included.

V. Requirements for Monitoring

A. Specific Monitoring Requirements

1. Individual Equipment: The catalytic oxidizer chamber exhaust temperature is required to be continuously monitored and recorded pursuant to condition 5.2.3 of the permit. This base line temperature is to be established during the oxidizer removal efficiency test.
2. Equipment Groups (all subject to the same monitoring requirements): Boiler 1B and 2B are both natural-gas fired boilers and they use No. 2 fuel oil which is a distillate oil as a back up during gas curtailment. When oil is burned in the boilers they are subject to an opacity limitation. The permittee is required under condition 5.2.1 of the permit to inspect the fuel firing system of the boilers. This strategy is used to assure proper operation and maintenance associated with potential causes of particulate matter emissions and opacity.

To assure compliance with the sulfur limitation for the fuel oil burned in boiler 2B), sampling and analysis of the fuel is required. The Permittee is given the option of either sampling and analyzing the oil (by approved methods) or obtaining from the oil supplier, a statement certifying that the oil has been sampled and analyzed using approved methods. In either case the permittee must report the results of the analysis.

B. Record Keeping and Reporting Requirements

Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrence and the corrective action taken are required to be kept by the Permittee. Reporting is required to be done on a semiannual/annual basis. The permit specifies that these records will form the basis of the compliance certification to be submitted on an annual basis.

VI. Other Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

General requirements for the maintenance of all records including those related to specific issues related to the MACT requirements for a period of 5 years are included in the permit.

General requirements for the maintenance of all records for a period of five years are included in Condition 5.3.3. Prompt reporting shall be as described in Condition 6.1.1.

VII. Other Specific Requirements

- A. Operational Flexibility: The facility has not indicated a need for operational flexibility.
- B. Alternative Requirements: There are no alternative requirements indicated.
- C. Insignificant Activities: The following is a list of the facility’s insignificant activities as detailed in Section 4.10 of the Title V application:

Table 5: Insignificant Activities

Category	Description of Insignificant Activity	Quantity
Trade Operations	Brazing, soldering and welding equipment, and cutting torches related to manufacturing and construction activities whose emissions of HAPs fall below 1,000 pounds per year	1
Laboratory and Testing	Laboratory fume hoods and vents associated with bench-scale laboratory equipment used for physical or chemical analysis	6
Industrial Operations	Crucible furnace, pot furnace, or induction melting and holding furnaces with a capacity of 1,000 pounds or less each, in which sweating or distilling is not conducted and in which fluxing is not conducted using free chlorine, chloride or fluoride derivatives or ammonium compounds	2
	Equipment used for compression, molding and injection of plastics	7
Storage Tanks	All petroleum liquid storage tanks storing a liquid with a true vapor pressure of equal to or less than 0.50 psia	2
	All petroleum liquid storage tanks with a capacity < 40,000 gallons storing a liquid with a and true vapor pressure ≤ 2.0 psia	2
	All petroleum liquid storage tanks with a capacity ≤ 10,000 gallons	1

- D. Temporary Sources: There are no temporary sources indicated.
- E. Short-Term Activities: The facility has not indicated any short term activities.
- F. Compliance Schedule/Progress Reports:
The compliance date for 40 CFR 63 Subpart O is December 6, 1998.
- G. Emissions Trading: Not applicable
- H. Acid Rain Requirements: The facility has not indicated applicability to the acid rain requirements.
- I. Prevention of Accidental Releases: This facility has indicated applicability for propane.

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- J. Stratospheric Ozone Protection Requirements: The facility has not indicated applicability according to Section 3.11 of their Title V application.
 - K. Pollution Prevention: The facility has not indicated any additional pollution prevention controls outside of the requirements for the EtO MACT standard.
 - L. Specific Conditions: All conditions have been covered elsewhere in the review.
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VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Closing Block: We have reviewed and recommend issuance of draft Permit No. 3842-245-0109-V-01-0

Program	Review Engineers	Dates	Review Managers	Dates
SSPP/ASU				
SSCP/ASU				
ISMP				
TOXICS				

Stationary Source Permitting Program Manager

Attachment

Process Flow Diagrams

TITLE V APPLICATION REVIEW

Addendum - March 9, 1998

Addendum to Facility Description

Kendall Healthcare uses ethylene oxide to sterilize medical devices. The facility uses a maximum of amount of 32.65 tons of ethylene oxide per year in four sterilization chambers.

Changes made to the Permit

The following are changes that have been incorporated into the Title V permit based on EPA comments:

1. The following acronyms have been added to Attachment A: OCGA, EPCRA, GPM, H₂O, PPM, and NESHAP.
2. Attachment B has been modified to include tables and text for Emission Levels Based on Insignificant Activities and Generic Groups. These tables are taken from information given in the Title V application.
3. Condition 7.7.1 was modified by adding "shall comply" in a., b. and c.
4. In Section 3.0 of the permit, the following statement was added to clarify the averaging time period:

Note: Except where an applicable requirement specifically states otherwise, the averaging times of any of the Emissions Limitations or Standards included in this permit are tied to or based on the run time (s) specified for the applicable reference test method (s) or procedures required for demonstrating compliance.

Addendum - March 23, 1998

Addendum to Equipment Description

Boiler 1B burns distillate fuel oil during natural gas curtailment. During the past three years, Boiler 1B has burned distillate fuel a total of 83 hours. Due to the amount of time the boiler burns distillate oil, the periodic monitoring outlined in the Title V permit is appropriate. (see Section V - Requirements for Monitoring)
