



North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary

January 26, 2007

Donii Fox, MSPH, CIH
Biological Safety Officer
University of North Carolina at Chapel
Department of Environment, Health, Safety
1120 Estes Drive Extension
Campus Box 1650
Chapel Hill, NC 27599-1650

Dear Donii Fox:

This is in response to your letter requesting approval of the chemical treatment of *E. coli* & *Mycobacterium smegmatis* using Vesphene Ilse Disinfectant Cleaner as described in the request for approval submitted to the Department.

According to 15A NCAC 13B .1207(4)(b) the Division is authorized to approve the alternative chemical treatments of microbiological wastes.

The chemical treatment of the organisms listed above as described in the procedures for treatment which was submitted with your letter of December 14th, 2006, is approved.

The test descriptions and results which were submitted to the Department substantiate the efficacy of the treatment of the organisms with Vesphene Ilse.

Should you have any questions regarding this matter you may contact me at (919) 508-8499 or Bill Patrakis at (919) 508- 8512.

Sincerely,

Ellen Lorscheider
Environmental Programs Manager

Cc:Bill Patrakis, Environmental Biologist

Chemical Treatment of Liquid Infectious Waste**2006**

This document contains the treatment and disposal procedures for liquid infectious waste for the BSL2 laboratory of Dr. Miriam Braunstein in Mary Ellen Jones Bldg (Rooms 815 and 816)..

- I. Description of Infectious Waste
 - a. The waste to be treated is comprised of liquid bacterial cultures in bacterial growth media
 - b. Organisms present are *Mycobacterium smegmatis* and *Escherichia coli*
 - c. The maximum estimated concentration of organisms is 10^9 bacteria per milliliter of culture (equal to 10^{12} bacteria per liter).
 - d. The only other material present is bacterial culture media comprised of sugars and amino acids. There are no organic materials present in the bacterial culture media
 - e. We generate approximately 500ml-1L of bacterial culture waste per week

- II. Description of treatment procedures
 - a. There is a container of 500ml of a 1X working concentration of Vesphene IIse disinfectant in the sink. During the day bacterial cultures to be disinfected are added to the Vesphene. Cultures disinfect overnight in the Vesphene. The Vesphene/disinfected cultures are disposed of down the sink the next morning and new Vesphene is added to the container. The amount of bacterial culture added to the Vesphene will never exceed the volume of Vesphene (500ml). If larger volumes need to be disinfected, then secondary vessels will be added.
 - b. As mentioned, the disinfectant to be used will be Vesphene IIse from the Steris Corporation. This disinfectant has passed the AOAC Tuberculocidal Test (room temperature for 10 min.) when used at the concentration that we use in the laboratory. *Mycobacterium smegmatis* is a non-pathogenic bacterium related to *Mycobacterium tuberculosis*, so there is reference for the application of this disinfectant.
 - c. The disinfectant is used at the recommended manufacturers dosage at 1X concentration, which is a 1:128 dilution of the stock solution.
 - d. The disinfectant is always used at a 1:1 ratio of disinfectant to culture, standard volumes are 500ml Vesphene: 500ml cultures
 - e. Contact time of the organisms with the disinfectant will be a minimum of 8 hours.
 - f. The Vesphen IIse should not be used at more dilute concentrations or for times shorter than 10 minutes.

- III. Verification of Efficacy

- a. To verify the effectiveness of the Vesphene IIse treatment described above, material was swabbed from the beakers onto bacterial culture plates. Plates were monitored for bacterial growth for 7 days, and were found to be free of growth, indicating that there were no culturable bacteria in the treated waste pots.
- b. As described in IIb, VesphenIIse is an established treatment for *Mycobacterium* spp.

STERIS



SAFETY DATA SHEET

1. Identification of the Substance and Company

Vesphene II SE
Product No. 6461
MSDS No. 6461

NFPA 704 HAZARD RATING:

HEALTH: 3
FIRE: 1
REACTIVITY: 0

Prepared by: M. Ebers
Date Created: December 1, 2001

Date Revised: March 9, 2004

STERIS Corporation, P. O. Box 147, St. Louis, MO 63166, US
 Emergency Telephone No. 1-314-535-1395 (STERIS); 1-800-424-9300 (CHEMTREC)
 Telephone Number for Information: 1-800-548-4873 (Customer Service-Healthcare Products)

STERIS Limited, STERIS House, Jays Close, Viables, Basingstoke, Hampshire, RG22 4AX, UK
 Emergency Phone No: +44 (0) 1895 622639
 Product/Technical Information Phone No: +44 (0) 1256 840400

2. Composition/Information on Ingredients

Hazardous Component(s)	EEC No.	CAS No.	% By Wt.	Symbol	R Phrases
2-phenylphenol	201-993-5	90-43-7	9.09	X/N	36/37/38, 50
p-tertiary amyphenol	Not Listed	80-46-6	7.66	[C/X _n]	[34, 22]
Potassium hydroxide	215-181-3	1310-58-3	5.00	C/X _n	22, 35
Sodium hydroxide	215-185-5	1310-73-2	< 2.00	C	36/38

3. Hazards Identification: Severely irritating to eyes and skin

4. First Aid Measures

Eye Contact: Flush eyes immediately with water for at least 15 minutes. Get medical attention if irritation develops.

Skin Contact: Flush skin immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Inhalation: Remove patient to fresh air. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting. Get medical attention. Do not give anything by mouth to an unconscious person. If conscious, drink large quantity of milk or water.

5. Fire-Fighting Measures

Flash Point: Not Flammable

Extinguishing Media: Suitable for surrounding fire. **Special Fire Fighting Procedures:** None known.

6. Accidental Release Measures: Ensure suitable personal protection during removal of spillages. Spills should be contained and may be cautiously neutralized with a weak acid solution, or absorbed on appropriate material and placed in a container for disposal. Flush spill site with large quantities of water to a sanitary sewer. Washings should be prevented from entering surface water/storm drains. Local regulations should be observed.

7. Handling and Storage

7.1 Handling

Product will withstand an occasional accidental freezing. It must be thoroughly thawed and agitated (roll drum) before being used.

7.2 Storage

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

8. Exposure Control/Personal Protection

8.1 Occupational Exposure Limits

Sodium hydroxide: ACGIH TLV and OSHA PEL = 2 mg/m³ ceiling; UK HSE E40 STEL = 2 mg/m³

Potassium hydroxide: ACGIH TLV = 2 mg/m³ ceiling; ACGIH and OSHA STEL = 3 mg/m³; UK HSE E40 STEL = 2 mg/m³

8.2 Personal Protection

Respirator Protection: None normally required. Required if established exposure limits (Sec. 8.1) are

exceeded.

Eye Protection: Safety glasses or goggles.

Protective Gloves: Rubber.

Other Protective Clothing and Equipment: Mists of use-solutions may be irritating to nasal passages and lungs.

Ventilation: Adequate ventilation to maintain air concentrations below established limits.

9. Physical and Chemical Properties

Solubility in Water: Complete

Appearance/Odor: Red liquid. Mild odor.

Specific Gravity: Approximately 1.10

pH: Approximately 12.3

10. Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Incompatible Materials: Reaction with acid can create heat.

Conditions to Avoid: None known.

Hazardous Decomposition or Byproducts: Forced ignition of dried residues may produce CO₂, CO, sulfur oxides

11. Toxicological Information

11.1 Acute (Primary Routes of Exposure)

Eyes: Concentrate severely irritating to eyes. 1:200 dilution slightly irritating to eyes.

Skin: Concentrate severely irritating to skin. 1:200 dilution slightly irritating to skin.

Inhalation: Inhalation toxicity >54 ml/liter at 1:200 for 4 hours. Mists may irritate nasal passages.

Ingestion: Oral LD₅₀ (rats) 4,500 mg/kg. Causes upset to stomach.

11.2 Long Term Exposure

Carcinogenicity: IARC, NTP and OSHA do not list this product or its ingredients as carcinogens. 2-phenylphenol produced urinary bladder tumors in male rats and liver tumors in male mice when fed exaggerated doses.

12. Ecological Information: None available

13. Disposal Considerations

Do not contaminate ponds, waterways, or ditches with chemical or used containers. Empty containers should be rinsed thoroughly and discarded in an appropriate waste container. [Containers may be offered for reconditioning/recycling.] Empty containers should not be used for other purposes. Disposal of unwanted product should be done in accordance with local, state or national legislation. Product may be flushed to a sanitary sewer with copious amounts of water, if in accordance with state, local and federal regulations. For additional guidance, contact the State Water Board or the Regional Office of the EPA.

14. Transport Information

Ground/Air/Sea: Non-hazardous

15. Regulatory Information

EEC Classification: IRRITANT/DANGEROUS FOR THE ENVIRONMENT

Hazard Symbol: Xi/N

Risk Phrases: R38: Irritating to skin. R41: Risk of serious damage to eyes. R50: Very toxic to aquatic organisms.

Safety Phrases: S2: Keep out of reach of children. S24/25: Avoid contact with skin and eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37/39: Wear suitable gloves and eye/face protection. S45: In case of accident or if you feel unwell seek medical advice immediately (show label when possible). S61: Avoid release to the environment. Refer to special instructions/Safety data sheet.

USA State Regulations: May contain trace levels of formaldehyde. Contains 2-phenylphenol.

US EPA Regulations: 2-phenylphenol subject to reporting under Section 313 of Title III (SARA) and 40 CFR 372.

US EPA Registration Number: 1043-87

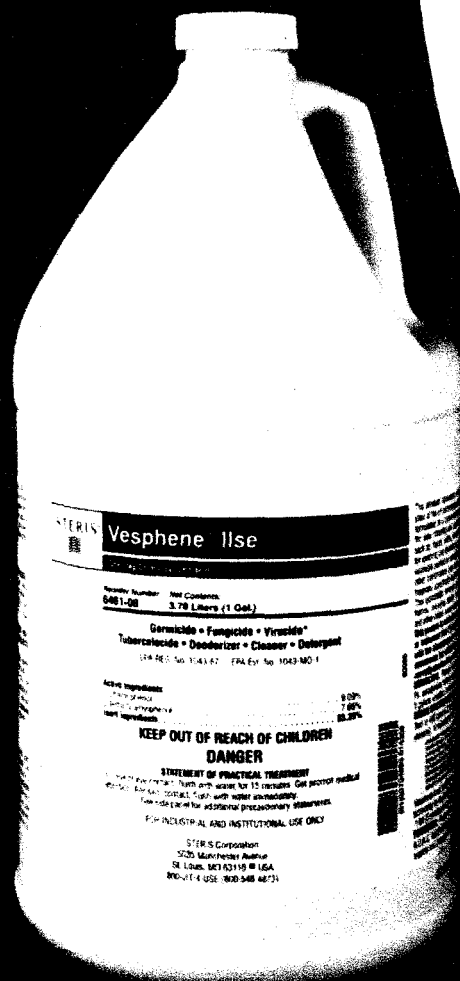
16. Other Information

The information on this sheet is not a specification and does not guarantee specific properties. The information is intended to provide general knowledge as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instruction or recommendations are not followed.

NA - Not Applicable

ND - No Data

Vesphene[®] IIse Disinfectant Cleaner



Vesphene IIse Disinfectant Cleaner is a one-step, disinfectant cleaner and deodorizer made specifically for use on hard nonporous surfaces. This product contains selected phenols blended with synthetic detergents and builders. It is effective with soft water or hard water up to 400 ppm hardness (as CaCO_3) and in the presence of five percent serum. At a use-dilution rate of 1:128 (1 ounce per gallon), Vesphene IIse cleaner kills a broad spectrum of common bacteria without harming the surface. It is formulated to maintain an alkaline use-dilution pH of 10.4 – 10.6.



Applications:

Vesphene IIse cleaner is designed for use on washable, nonporous hard surfaces such as floors, walls, woodwork, bathroom fixtures, equipment, and furniture. It is intended for use in institutions such as hospitals, nursing homes, medical and dental offices, pharmaceutical plants, and other FDA regulated facilities where disinfection, cleaning, and deodorizing are necessary.

Dilution Rate: 1:128 (1 oz. per gallon)

Features and Benefits:

- Advanced phenolic formula with broad spectrum biocidal activity, including *Mycobacterium tuberculosis var. bovis*, HIV-1 (AIDS), and MRSA
- Hard water effective (400 ppm CaCO_3) to assure disinfection in most tap water
- Five percent serum effective: bactericidal, fungicidal, tuberculocidal, and virucidal
- Advanced detergent system for superior cleaning while disinfecting
- One-stroke pump system available for accurate and controlled use-dilution

Ordering Information:

1 gallon bottle x 4 per case	6461-08
55 gallon drum	6461-01

STERIS[®]



Applied Infection Control