Section VIII - Precautions for Safe Handling and Use

In the event of a release or spill, evacuate all personnel from the room. Flood large spills with water and confine to prevent runoff. Do not re-enter area without proper protective equipment. Large spills may require SCBA. Thoroughly ventilate area.

Waste Disposal Method: Incineration is the prefrred method. Indiscriminate dumping into sewers and waterways must be avoided. Comply with federal, state and local regulations on reporting and disposal.

Precautions of Handling and Storage: Keep away from heat, sparks or open flame. Store and use with adequate ventilation at all times. Use only in the system for which intended.

Section IX - Control Measures

Respiratory Protection: Positive pressure, self-contained breathing apparatus or other approved respirator when PEL is exceeded.

Ventilation: Local exhaust is preferred.
Mechanical exhaust is acceptable.
Must be confined within vapor-tight equipment.

Eye Protection: Full face shield and safety glasses.

Safety shower, eyewash fountain, rubber shoes and apron required when risk of liquid spill exists.

Do not inhale vapor. Do not allow to come in contact with the eyes, skin or clothing. Keep away from heat, sparks and flames. Personal protective clothing and equipment must be in accordance with 29 CFR 1910.133.

Section X - Special Precautions

Precautions for Storage and Handling:

Keep away from heat, sparks and flames.
Do not inhale vapors.
Use only in an area with sufficient ventilation to maintain employee exposure to Ethylene oxide in the work area below established limits.
Do not get in eyes, on skin or on clothing.
Liquid absorbed into clothing, particularly shoes, causes delayed burns.
Water solutions of liquid or gas may cause immediate burns.
Do not take internally.
Wash thoroughly after using.
Keep out of the reach of children.

Note: This data is furnished independent of any sale of the product, only for your investigation and independent verification. While the information is believed to be correct, Andersen Products makes no representation as to the accuracy of the information contained herein and in no event shall be responsible for any damages, of whatsoever nature, directly or indirectly resulting from the publication or use of or reliance upon data contained herein.

PRODUCT INFORMATION SHEET

H. W. ANDERSEN PRODUCTS, INC.
Health Science Park, Haw River, NC 27258 USA

Essentially similar to U.S. Department of Labor Form OSHA 174 (MSDS)

Date: February 1, 1995 Product Name: Anprolene®

Section I

Manufacturer: H.W. Andersen Products, Inc.
Health Science Park, NC 54
Haw River, NC 27258

Emergency telephone number: 800-255-3924
Information telephone number: 910-376-3000

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical ID; Common Name(s))

	OSHA PEL	OSHA STEL
Ethylene oxide CAS # 75218 (1,2-Epoxyethane), (Oxirane) Material Use: Sterilant Gas	1.0 PPM (TWA - 8HRS)	5.0 PPM (TWA - 15 MIN)

Section III - Physical / Chemical Characteristics

Boiling Point:	10.4°C. (50.7°F)
Vapor Pressure:	1095 mm Hg.
Vapor Density (air = 1.0):	1.49 (Air=1.0)
Solubility in Water:	complete
Appearance and Odor:	colorless liquid / gas, ether-like odor in high concentrations
Specific Gravity:	0.871 (water=1.0)
Melting Point:	-111.7°C
Evaporation Rate:	72 (Butyl Acetate=1)

Section IV - Fire and Explosion Hazard Data

Flash Point: < 0°F TAG closed/open cup method

Flammable Limits (in Air, % by volume) LEL: 3% UEL: 100%

Unusaul Fire and Explosion Hazards: Extremely flammable; may form explosive mixtures with air and oxidizing agents.

Extinguishing Media: Water Spray, CO_2 Spray, Dry Chemical or Alcohol Based Foam

Special Fire Fighting Procedures: Allow fire to burn out. Flush area with water; re-ignition may occur.

Section V - Reactivity Data

Stability:	Stable ✔	Conditions to Avoid: Stable at ordinary conditions of temperature and pressure. Will decompose violently at temperatures above 800° F.
	Unstable ___	
Compatibility (materials to avoid):		Copper, silver, magnesium, mercury and their salts - oxidizers acids and alkalies.
Hazardous Decomposition or By-products:		Subject to thermal decomposition which might produce carbon monoxide and/or carbon dioxide.
Hazardous Polymerization May Occur.:		Conditions to avoid: Trace polymers may be present under ordinary conditions of temperature and pressure, etc. However, Ethylene oxide may polymerize violently if contaminated with aqueous alkalies, amines, mineral acids, metal chlorides, and metal oxides.

Section VI - Health Hazard Data

Routes of Entry: Inhalation and skin contact. Ingestion is unlikely.

Health Hazards:

Inhalation-Irritation of respiratory tract, headache, nausea, vomiting, diarrhea.
Skin contact-Local erythema, edema, vesicle formation.
Ingestion-Ulceration of the throat and mouth, abdominal pain.
Chronic exposure-Allergic contact dermatitis in small percentage of workers. Respiratory irritation and possible chromosomal aberrations. Skin sensitization reported in some volunteer subjects.
Acute exposure-Animal studies have shown that exposure to Ethylene oxide has been associated with the occurrence of cancer, reproductive effects, mutagenic changes, neurotoxicity and sensitization. No conclusive human studies exist.
Eye contact-Liquid Ethylene oxide splashed into the eyes can cause severe irritation and may result in permanent damage. Ethylene oxide vapors can cause eye irritation.
Skin contact-Liquid Ethylene oxide will evaporate quickly and may cause sufficient cooling to result in frostbite. Prolonged contact with the skin can cause severe irritation, blistering and edema. The reaction may not appear for several hours after exposure.

Section VII - Emergency and First Aid Procedures

Inhalation - Remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. Call a physician.

Eye or Skin Contact - Immediately flush eyes and / or skin with copious amounts of water (soap and water for skin) for at least 15 minutes. If irritation occurs, consult a physician. Wash contaminated clothing before reuse. Contaminated shoes should be discarded or thoroughly aired.

Ingestion - Give at least two glasses of water. Do not induce vomiting. Call a physician.

Notes to Physician (Including Antidotes) - Through unpublished reports it has been found, for persistent nausea and vomiting from inhalation of ethylene oxide, an intramuscular injection of phenobarbital (2 grains) is helpful in controlling such symptoms.

Carcinogenicity

OSHA:	Noted as cancer/reproductive hazard.
ACGIH:	Classified as suspected human carcinogen.
NTP:	Classified as anticipated human carcinogen.
IARC:	Classified as group I, Human carcinogen; exposure circumstances entail exposures that are carcinogenic to humans.

Signs and Symptoms of Exposure - Headache, dizziness, nausea, vomiting, eye irritation, respiratory tract irritation.