



SAFETY DATA SHEET

1. Identification of the Substance and Company

VAPROX® HC Sterilant (59% Hydrogen Peroxide)

Use: For use with STERIS Amsco® V-PRO® 1, V-PRO® 1 Plus, V-PRO® 60 Sterilizer and V-PRO® maX Low Temperature Sterilization Systems

Product No. PB007, PB028

SDS No. A124

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Emergency Telephone No. 1-314-535-1395 (STERIS); 1-800-424-9300 (CHEMTREC)
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2. Hazards Identification: Harmful if inhaled. Harmful if swallowed. Causes severe skin burns and eye damage. May intensify fire; oxidizer.

3. Composition/Information on Ingredients

Hazardous Component(s)	% By Wt.	CAS No.	EU No.	Pictogram(s)	Hazard Code(s)	Oral LD ₅₀	Inhalation LC ₅₀
Hydrogen peroxide	59	7722-84-1	231-765-0	Flame over circle, Corrosion	H332, H302, H314, H272	225 mg/kg (rat) 50% solution	>0.17 mg/L (rat) 50% solution

4. First Aid Measures: **Eye Contact:** Flush eyes immediately with water for at least 15 minutes. Get medical attention. **Skin Contact:** Flush skin immediately with water for at least 15 minutes, while removing contaminated clothing and shoes, and thoroughly wash with soap and water. Get medical attention. **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 a large quantity of milk or water.

5. Fire-Fighting Measures:

Conditions of Flammability/Flash Point/Auto-Ignition Temperature: Non-combustible

Upper Flammable Limit: NA **Lower Flammable Limit:** NA

Special Hazards: Hydrogen peroxide will not burn but decomposition will generate oxygen that increases the explosive limits, enhances the burning rate and may initiate fire in combustion materials. May react with soft metals to evolve flammable oxygen gas. Clothing and other combustible materials that have come into contact with hydrogen peroxide must be immediately and thoroughly washed with water. If hydrogen peroxide is allowed to dry in the materials, spontaneous combustion can occur and a fire may result.

Explosibility Data: ND

Extinguishing Media: Water or water fog. Do **not** use carbon dioxide or dry chemical fire extinguishers.

Special Fire Fighting Procedures: Flood with water. Wear full protective clothing (rubber suit and boots including splash goggles and self-contained breathing apparatus). In case of fire, use water or water fog fire extinguishers only.

Hazardous Combustion Products: Contamination may cause rapid decomposition, oxygen gas release and dangerous pressures

6. Accidental Release Measures: Ensure suitable personal protection during removal of spillages. Spills should be contained and may be cautiously neutralized with sodium metabisulfite or sodium sulfite (1.0 lb of either to 100 mL peroxide), or absorbed on appropriate material and placed in a container for disposal. Do not use sawdust or cellulose material as an absorbent. Flush spill site with large quantities of water (20 parts water to 1 part hydrogen peroxide) 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:** Read and observe all labeled use instructions.

7.2 Storage: Store in a cool dry area in the upright position and away from combustibles. Never return unused peroxide to original container. Utensils used for handling peroxide should be made only of compatible materials such as glass, stainless steel, aluminum or plastic.

8. Exposure Control/Personal Protection : **8.1 Occupational Exposure Limits** Hydrogen peroxide: ACGIH TLV and OSHA PEL = 1 ppm; UK HSE EH40 STEL = 2 ppm; IDLH = 75 ppm

8.2 Personal Protection: Respirator Protection: None required for routine use. In emergency situations where established limits are exceeded, it is recommended to use SCBA (Self-Contained Breathing Apparatus).

Eye and Face Protection: Chemical splash goggles. **Protective Gloves:** Rubber, neoprene or vinyl

Other Protective Clothing and Equipment: Chemical resistance lab coat and closed toe shoes.

Engineering Controls/Ventilation: Please refer to the installation specifications for the AMSCO V-PRO, V-PRO 1, V-PRO 1 Plus and V-PRO maX Low Temperature Sterilization Systems for recommendations as specified in the Guidance for Design and Construction of Hospital and Healthcare Facilities.

9. Physical and Chemical Properties

Solubility in Water: Complete **Specific Gravity:** Approximately 1.1 – 1.24

Physical State/Appearance/Odor: Clear colorless liquid/odorless.

pH (as distributed): < 3.5 **Freezing Point:** -62F (-52C) (for 50% peroxide)

Odor Threshold, Vapor Pressure, Vapor Density, Evaporation Rate, Boiling Point and Freezing Point: ND
Coefficient of Water/Oil Distribution: NA

10. Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Incompatible Materials: Cyanides, hexavalent chromium compounds, nitric acid, potassium permanganate, oxidizers, reducers, combustible materials, flammable vapors, alkalies, copper, dirt, dust, iron, heavy metals and their salts and organic materials (especially vinyl monomers).

Conditions to Avoid/Conditions of Reactivity: Unstable with heat and contamination; liberation of oxygen gas may result in dangerous pressures.

Hazardous Decomposition or Byproducts: Contamination may cause rapid decomposition, oxygen gas release and dangerous pressures.

11. Toxicological Information

11.1 Acute (Primary Routes of Exposure)

Eyes (Irritancy): Liquid is extremely irritating and corrosive. Causes burns; effects may be delayed. Permanent eye damage and blindness can result. Vapors and mists are extremely irritating.

Skin (Irritancy or Sensitization): Liquid causes skin irritation and may cause burns after prolonged exposure. Causes bleaching of skin and stinging sensation. Dermal LD50 (Rabbit) (35% solution) >2.0 g/kg. Dermal LD50 (rabbit) 70% solution) > 6.5 g/kg. Vapors and mists are extremely irritating.

Inhalation: Vapors cause severe irritation to the nose, throat and lungs. May result in coughing and shortness of breath. LC50 (rat) 50% solution) > 0.17 mg/L (rat). LC50 (rat) (90% solution) > 2000 ppm.

Ingestion: Harmful if swallowed. Causes burns to the gastrointestinal tract. Oral LD50 (Male Rat) (35% solution) = 1193 mg/Kg. Oral LD50 (rat) (50% solution) > 225 mg/kg.

11.2 Long Term Exposure:

None known.

Carcinogenicity: IARC, NTP and OSHA do not list this product or its ingredients as carcinogens. ACGIH lists hydrogen peroxide as a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' A3.

Reproductive Toxicity/Teratogenicity/Mutagenicity/Toxicologically Synergistic Products: ND

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12. Ecological Information:

Ecotoxicity/Persistence and degradability/Mobility:

Channel catfish 96-hour LC50 = 37.4 mg/L

Fathead minnow 96-hour LC50 = 16.4 mg/L

Daphnia magna 24-hour EC50 = 7.7 mg/L

Daphnia pulex 48-hour LC50 = 2.4 mg/L

Freshwater snail 96-hour LC50 = 17.7 mg/L

For more information refer to ECETOC "Joint Assessment of Commodity Chemicals No. 22, Hydrogen Peroxide." ISSN-0773-6339, January 1993

CHEMICAL FATE INFORMATION: Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Hydrogen peroxide half-life in freshwater ranged from 8 hours to 20 days, in air from 10-20 hrs. and in soils from minutes to hours depending upon microbiological activity and metal contaminants.

13. Disposal Considerations: Empty cartridges may be disposed in normal trash. Expired cartridges should be disposed of according to local policies for hazardous materials. For additional guidance, contact the State Water Board or the Regional Office of the EPA.

14. Transport Information

PB007

US and Canada

Surface Modes: UN2014, Hydrogen peroxide, aqueous solutions, 59%, *stabilized*, 5.1, (8), PGII

Air: Forbidden

International

Surface Modes: UN2014, Hydrogen peroxide, aqueous solution, 59%, *stabilized*, 5.1, (8), PGII

Air: Forbidden

PB028

US and Canada

Ground Modes: Conforms with 49CFR 173.4

Air: Conforms with 49CFR SP A75

International

Ground Modes: Conforms with ADR/RID/ADG7 3.5

Sea: IMDG: Conforms with IMDG 3.5 Shipping paper must state, "dangerous goods in excepted quantities"

Air: Conforms with ICAO SP A75

Note: Vaprox® HC Sterilant is not considered a marine pollutant.
Keep well ventilated and away from direct sunlight or heat sources.

15. Regulatory Information

EU Regulations: This preparation is classified as dangerous as defined by the UK Chemicals (Hazard Information and Packaging for Supply) Regulations. These regulations implement a number of EC Directives including the Dangerous Substances Directive (67/548/EEC and amendments), the Dangerous Preparations Directive (1999/45/EEC and amendments) and the Safety Data Sheets Directive (91/155/EEC and amendment).

EEC Classification: OXIDISING / CORROSIVE

Pictograms: Flame over circle, Corrosion

Hazard Statement Codes: H332: Harmful if inhaled. H302: Harmful if swallowed. H314: Causes severe skin burns and eye damage. H272: May intensify fire; oxidizer.

Safety Phrases: S17: Keep away combustible material. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28: After contact with skin, wash immediately with plenty of water.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CANADA: WHMIS: Product Identification No. 2014; Hazard Classification: Class C (Oxidizer), Class D, Div. 2, Subdiv. B (Toxic) Class E (Corrosive)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulation.

Ingredient Disclosure List: Listed

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