



## SAFETY DATA SHEET

### 1. Identification of the Substance and Company

#### Vaprox Hydrogen Peroxide Sterilant For Use in STERIS VHP Equipment

MSDS No. A122

Prepared by: M. Ebers

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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)

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Product/Technical Information Phone No: +44 (0) 116 276 8636

**2. Hazards Identification:** Causes severe burns. Harmful if swallowed. Corrosive to eyes, nose, throat and lungs.  
(For Europe, see Section 15)

### 3. Composition/Information on Ingredients

Hazardous Component(s)	% By Wt.	CAS No.	EU No.	Symbol	R Phrases	Oral LD50	Inhalation LC50
Hydrogen peroxide	15-40	7722-84-1	231-765-0	O, C	5, 8, 20/22, 35	1193 mg/kg (rat)	>0.17 mg/l/50% H2O2 (rat)

**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. 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. Cool tanks or containers. 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. May react dangerously with alkalies, copper, dirt, dust, iron, heavy metals and their salts and with organic materials (especially vinyl monomers).

**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 (1.9 lbs SO<sub>2</sub> to 500 mL peroxide), 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:** 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:** If concentrations of hydrogen peroxide are in excess of the exposure limits, respiratory protection is required. SCBA is recommended and is mandatory for concentrations greater than 50 ppm hydrogen peroxide. In certain circumstances when the concentration of hydrogen peroxide is 10 ppm or less, a half facepiece, organic vapor/acid gas cartridge respirator may be appropriate. Consult with your respirator manufacturer. In certain circumstances when the concentration of hydrogen peroxide is 50 ppm or less, a full facepiece organic vapor/acid gas cartridge respirator may be appropriate. Consult with your respirator manufacturer.

**Eye and Face Protection:** Chemical splash goggles. **Protective Gloves:** Rubber, neoprene or vinyl  
**Other Protective Clothing and Equipment:** Polyester or acrylic full cover clothing and rubber boots are recommended.

**Engineering Controls/Ventilation:** General or Local exhaust sufficient to control any release in excess of the threshold limits.

### 9. Physical and Chemical Properties

**Solubility in Water:** Complete **Specific Gravity:** Approximately 1.1 – 1.13

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

**pH (as distributed):** 0 – 3.5 **Freezing Point:** -27F (-33C)

**Odor Threshold, Vapor Pressure, Vapor Density, Evaporation Rate, Boiling Point and Freezing Point:** ND

**Coefficient of Water/Oil Distribution:** ND

### 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 and flammable vapors.

**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. May react dangerously with alkalies, copper, dirt, dust, iron, heavy metals and their salts and with organic materials (especially vinyl monomers).

### 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) > 2000 mg/kg. Destruction after 24 hours exposure. 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) (90% solution) > 2000 ppm.

**Ingestion:** Harmful if swallowed. Causes burns to the gastrointestinal tract. Oral LD50 (Male Rat) = 1193 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 an A3 animal carcinogen.

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

### 12. Ecological Information: None available.

**13. Disposal Considerations:** Rinse empty containers with 20 parts water and then empty into sink with running water. Hydrogen Peroxide is classified as a DOT oxidizer and a hazardous waste under U. S. EPA hazardous waste regulations and it is a violation of federal law to improperly dispose of pesticides. For additional guidance, contact the State Water Board or the Regional Office of the EPA.

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### NFPA 704 HAZARD RATING:

HEALTH: 2

FIRE: 0

REACTIVITY: 1

### 14. Transport Information

**Ground:** UN2014, Hydrogen peroxide aqueous solution, Oxidizer, Corrosive, 5.1, 8, PGII

**Road/Rail: ADR/RID Class:** UN 2014, Hydrogen peroxide aqueous solution, Oxidizer, Corrosive, 5.1, 8, PGII

**Sea: IMDG Class:** UN2014, Hydrogen peroxide aqueous solution, Oxidizer, Corrosive, 5.1, 8, PGII

**Air: ICAO/IATA Class:** Product containers are vented; therefore, product cannot be shipped by air.

### 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:** HARMFUL

**Hazard Symbol:** X<sub>n</sub>

**Risk Phrases:** R8: Contact with combustible material may cause fire. R22: Harmful if swallowed. R36/37/38: Irritating to eyes, respiratory system and skin. R41: Risk of serious damage to eyes.

**Safety Phrases:** S1/2: Keep locked up and out of the reach of children. S2: Keep out of the reach of children. S13: Keep away from food, drink and animal feeding stuff. S17: Keep away from combustible material. S23: Do not breathe vapour. 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 label where possible).

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

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

**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