Peracidin® SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity: Peracidin®

Recommended use of the chemical and restrictions on use: Cleaning and Disinfection of Hollow Fiber Dialyzers

Supplier:
Angelini Pharma Inc.
8322 Helgerman Court
Gaithersburg, MD 20877
USA
(800) 726-2308 +1 301-330-7597 Fax (301) 330-6432

Emergency Phone:
For Chemical Emergency
Spill, Leak, Fire, or Accident
Call **CHEMTREC** Day or Night
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

SDS Date of Preparation: 08/14/2014

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical:	Health:	Environmental
Oxidizer Category 2	Acute Toxicity Category 4 (oral, dermal and inhalation) Eye Corrosion Category 1 Skin Irritation Category 2 Specific Target Organ Toxicity, Single Exposure Category 3 (respiratory irritant)	Aquatic Acute Toxicity Category 2 Aquatic Chronic Toxicity Category 3

GHS Label Elements:
Danger! Contains hydrogen peroxide, acetic acid and peracetic acid.

Statements of Hazard

H272 May intensify fire; oxidizer
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Prevention
P210 Keep away from heat.
P220 Keep away from clothing and all combustible materials.
P221 Take any precaution to avoid mixing with combustibles and organic solvents.
P261 Avoid breathing mist, vapor, or spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P312 Call a POISON CENTER or doctor if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor if you feel unwell.
P301+P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P330 Rinse mouth.

Storage
P405 Store locked up.

Disposal
P501 Dispose of contents and container in accordance with local and national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Amount
Water	7732-18-5	60-80%
Hydrogen Peroxide	7722-84-1	27%
Acetic Acid	64-19-7	6.7%
Peracetic Acid (Peroxyacetic acid)	79-21-0	4.5%

The exact concentration is being withheld as a trade secret.

4. FIRST AID MEASURES

Eye: Immediately flush eyes with plenty of water for at least 15 minutes while holding the eyelids apart. Remove contact lenses, if present and easy to do after the first 5 minutes, then continue flushing. Get immediate medical attention.
Skin: Immediately flush skin with plenty of water for 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Wash clothing as soon as possible and always before re-use. Do not allow product to dry on clothing. Evaporation of water concentrates the peroxide and increases the risk of fire.
Ingestion: Do not induce vomiting. If conscious, rinse mouth with a small amount of water and give one glass of water to dilute. Never give anything by mouth to an unconscious or drowsy person. Get immediate medical attention .
Inhalation: Remove victim to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Most important Symptoms: May cause severe eye irritation and burns. Causes skin irritation. Inhalation of vapor or mists may cause severe irritation of the upper respiratory tract. If swallowed, may cause intestinal irritation and discomfort. May be harmful if swallowed, inhaled or absorbed through the skin.

Indication of immediate medical attention/special treatment: Immediate medical attention is required for all routes of contact.

5. FIRE FIGHTING MEASURES

Suitable (and Unsuitable) Extinguishing Media: Use large quantities of water. Cool fire exposed containers and structures with water.
Specific hazards arising from the chemical: Contains hydrogen peroxide which is a strong oxidizer and may increase the flammability of combustible or flammable materials or powdered metals. If allowed to dry, solid reside may present a fire hazard. Hydrogen peroxide will not burn but decomposes to release oxygen which supports combustion. Contamination can cause rapid decomposition and an explosive pressure rupture of the container if not properly vented.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water spray. Water spray is effective in reducing irritating vapors. Contain water used in firefighting from entering sewers or natural waterways.
Explosion Data (sensitivity to mechanical impact or static discharge): None known.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Evacuate spill area and keep unprotected personnel away. Prevent contact with the eyes, skin and clothing. Wear appropriate protective clothing. Ventilate area. Prevent contact with flammable or combustible material. Keep away from heat, flames and high temperatures. Avoid releases to the environment.

Methods and Materials for Containment and Cleaning Up: Contain and recover liquid if possible or absorb with an inert, non-combustible material such as earth, dry sand or vermiculite. Do not use combustible absorbent such as sawdust. Do not return to the original container. Vent containers of recovered liquid to prevent pressurization and rupture of containers. Keep containers away from combustible material. Dilute large spills with a large amount of water and hold in a diked, well-ventilated area until the peroxide decomposes. Report releases as required by local, state and federal authorities.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Prevent contact with the eyes, skin and clothing. Do not breathe vapors or mists. Wear protective clothing and equipment. Use only with adequate exhaust ventilation. Wash thoroughly with soap and water after handling. Keep in vented, closed containers. Protect product from contamination. Keep away from heat, direct sunlight and all combustible materials.

Do not reuse containers. Empty containers retain product residues which can be hazardous. Follow all SDS precautions when handling empty containers.

Conditions for Safe Storage, Including Any Incompatibilities: Store in a cool, well-ventilated area away from heat and incompatible materials (combustibles, reducing agents, strong bases, organics). Avoid light and heat and keep in a closed but vented container to prevent evaporation (concentration) and contamination. Check periodically for bulging containers which can rupture from pressure. Do not store on wooden shelves or floors. Protect from physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Hydrogen Peroxide	1 ppm TWA ACGIH TLV 1 ppm TWA OSHA PEL
Acetic Acid	10 ppm TWA OSHA PEL 10 ppm TWA, 15 ppm STEL ACGIH TLV
Peracetic acid	0.4 ppm TWA (inhalable fraction and vapor) proposed ACGIH TLV

Engineering Controls: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.
Respiratory Protection: In operations where the occupational exposure limits are exceeded, an approved respirator with appropriate cartridges or supplied air respirator should be used. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.
Skin Protection: Impervious gloves such as rubber are recommended to prevent skin contact.
Eye Protection: Chemical safety goggles with face shield recommended for handling concentrate. Safety goggles recommended for use solutions.
Other: Impervious clothing may be required to prevent skin contact and contamination of personal clothing. If protective clothing is not fire resistant, it must be washed thoroughly with water after it contacts this solution. If allowed to dry in the fabric, the chemical may cause fire, particularly if the clothing is soiled. An eye wash should be available in the immediate work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear, colorless liquid with a sharp/pungent odor.

Physical State: Liquid	**Odor Threshold:** Not available
Vapor Density: Not applicable	**Initial Boiling Point/Range:** 200°F (93.2°C)
Solubility In Water: Soluble	**Vapor Pressure:** Not available
Relative Density: 1.12	**Evaporation Rate:** Not available
Melting/Freezing Point: Not available	**pH:** 2.5 (1% solution)
VOC Content: 12-13%	**Octanol/Water Coefficient:** Not available
Solubility: Soluble in water	**Decomposition Temperature:** Not available
Viscosity: Not available	**Flammability (solid, gas):** Not applicable
Flashpoint: None	**Autoignition Temperature:** Not applicable
Flammable Limits: LEL: Not applicable, **UEL:** Not applicable	

10. STABILITY AND REACTIVITY

Reactivity: Decomposition of hydrogen peroxide liberates heat and oxygen. Do not mix with anything but water.

Chemical Stability: Stable under normal storage and handling conditions. Unstable when exposed to heat and contaminants. Strong oxidizers, reacts violently with many other materials, particularly flammable and combustible organic materials.
Possibility of Hazardous Reactions: Oxidizers may react with many other materials, particularly flammable and combustible organic materials. Elevated temperatures can increase the decomposition of the product. Contact with organic substances may cause fire or explosion. Contact with metals, metallic ions, alkalies, reducing agents and organic matter (such as alcohols or terpenes) may product self-accelerated thermal decomposition.
Conditions to Avoid: Keep away from flames and high temperatures. Avoid light and heat and keep in a closed but vented container to prevent evaporation (concentration) and contamination. Explosive pressure rupture of the container can occur if not properly vented.
Incompatible Materials: Acids, bases, heat, reducing agents, organic materials, dirt, acids, alcohols and glycols, aldehydes, amides, amines, azo, diazo and hydrazines, carbonates, cyanides, dithiocarbamates, esters, ethers, hydrocarbons, halogenated organics, rust and many metals.
Hazardous Decomposition Products: Decomposition of hydrogen peroxide liberates heat and oxygen. High temperatures and the presence of contamination increases the rate of decomposition. Explosive pressure rupture of the container can occur if not properly vented. Decomposition of acetic acid and peracetic acid will release oxides of carbon.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:

Eye: Cause severe irritation with redness, tearing with possible burns. Permanent eye damage may occur.
Skin: May cause moderate to severe irritation with whitening of the skin. Peracetic acid may be harmful if absorbed through the skin.
Ingestion: Swallowing may cause pain, vomiting, diarrhea, distention of the stomach (due to rapid liberation of oxygen), and possible perforation of the stomach. Peracetic acid may be harmful if swallowed.
Inhalation: Inhalation of vapors or mists may cause severe irritation of the nose, throat and upper respiratory tract. Peracetic acid may be harmful if inhaled.
Chronic: None known.
Sensitization: This material is not known to cause sensitization.
Carcinogenicity: None of the components present are listed as a carcinogen or suspected carcinogen by IARC, NTP, ACGIH, or OSHA.
Germ Cell Mutagenicity: Hydrogen peroxide has tested positive for mutagenicity in some test systems. Acetic acid: Acetic acid was found to be negative in the AMES test for mutagenicity. Percaetic acid was negative in in-vitro and in-vivo assays.
Reproductive Toxicity: In a 90 day reproductive oral study with mice, hydrogen peroxide showed no effects in the reproductive organs in both males and females mice. It was presumed that the rapid degeneration of hydrogen peroxide on absorption and due to local effects, studies would be unlikely to reveal any specific developmental effects. Acetic Acid: Suckling rats were exposed to one of three solutions, 2.6x10-3 M lead acetate, 5x10-3 M acetic acid or water, from parturition until the pups were 18 days old. Pups demonstrated above normal preweaning body weights and were significantly less active than normal in an open field by day 44.

Numerical Measures of Toxicity:
Hydrogen Peroxide: Oral rat LD50 - 1193-1270 mg/kg (35%); Skin rabbit LD50- >2000 (35%)
Acetic Acid: Oral rat LD50 3310 mg/kg
5% Peracetic Acid: Oral rat LD50 1922 mg/kg; Skin rabbit LD50 1147 mg/kg; Inhalation rat LC50 4.1 mg/L/ 4 hr (as aerosol)

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Hydrogen Peroxide: 96 hr LC50 Fathead minnow-16.4 mg/L; 48 hr EC50 Daphnia pulex- 2.4 mg/L; 72 hr EC50 Skeletonema costatum- 1.38 mg/L
Acetic Acid: 96 hr LC50 Fathead minnow - 88 mg/L (static); 96 hr LC50 Bluegill sunfish- 75 mg/L; 24 hr EC50 Daphnia magna - 6000 mg/L
Peracetic Acid: 96 hr LC50 Oncorhynchus mykiss 0.53 mg/L; 48 hr EC50 daphnia magna 0.73 mg/L

This product is classified as harmful to the aquatic environment with long-term adverse effects. Releases to the environment should be avoided.

Persistence and Degradability: Hydrogen peroxide, acetic acid and peracetic acid rapidly degrade in the environment.

Bioaccumulative Potential: Hydrogen peroxide is decomposed by enzymatic action and does not accumulate in cell systems. Acetic acid and peracetic acid are expected to have a low potential to bioaccumulate.

Mobility in Soil: Hydrogen peroxide degrades in soil to form oxygen and water.

Other Adverse Effects: No data available.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local and national environmental regulations.

14. TRANSPORT INFORMATION

DOT Hazardous Materials Description:
Proper Shipping Name: Hydrogen Peroxide and peroxyacetic acid mixture, stabilized
UN Number: UN3149
Hazard Class/Packing Group: 5.1 (8), PG II
Labels Required: Oxidizer, Corrosive

IMDG Shipping Name: Hydrogen Peroxide and peroxyacetic acid mixture, stabilized
IMDG Hazard Class: UN3149
UN Number: 5.1 (8), PG II
IMDG Hazard Labels Required: Oxidizer, Corrosive

IATA Shipping Name: Hydrogen Peroxide and peroxyacetic acid mixture, stabilized
IATA Hazard Class: UN3149
UN Number: 5.1 (8), PG II
IATA Hazard Labels Required: Oxidizer, Corrosive

15. REGULATORY INFORMATION

CERCLA 103 Reportable Quantity: This product has an RQ of 11,100 lbs (based on the RQ of Peracetic acid of 500 lbs present at 4.5%). Releases above the RQ must be reported to the National Response Center. Some states have more stringent reporting requirements. Report all spills in accordance with local, state, and federal regulations.

Hazard Category for Section 311/312: Acute Health, Fire Hazard

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: Peracetic acid 4.5%

Section 302 Extremely Hazardous Substances (TPQ): Peracetic Acid TPQ 500 lbs.

INTERNATIONAL CHEMICAL INVENTORY STATUS:

Australia AICS: All the components are listed.
Canada DSL: All the components are listed.
China IECSC: All the components are listed.
European Union EINECS: All the components are listed.
Japan ENCS: All the components are listed.
Korea KECL: All the components are listed.
Philippines PICCS: All the components are listed.
New Zealand: All the components are listed.
United States TSCA: All the components are listed.

16. OTHER INFORMATION

NFPA Rating: Health = 3 Flammability = 0 Instability = 1
Special Hazards = OX
HMIS Rating: Health = 3 Flammability = 0 Physical Hazard = 2

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