SECTION 1. IDENTIFICATION

Product name : STERRAD® Cassettes
Substance name : STERRAD Cassettes

Manufacturer or supplier's details
Company name of supplier : Advanced Sterilization Products
Address : 33 Technology Drive
           Irvine, CA 92618
           US
Telephone : (800) 755-5900
E-mail address Responsible/issuing person : SDSJanssen@its.jnj.com

Emergency telephone number : CHEMTREC US: 1-800-424-9300
                            CHEMTREC International: +1 703-527-3887

Recommended use of the chemical and restrictions on use
Recommended use : Product for sterilisation

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Oxidizing liquids : Category 2
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin corrosion : Sub-category 1B
Specific target organ toxicity - single exposure : Category 3
Chronic aquatic toxicity : Category 3

GHS label elements
Medicinal devices are not subject to GHS labeling.
Hazard pictograms :

Signal word : Danger
Hazard statements:
- H272 May intensify fire; oxidizer.
- H302 + H332 Harmful if swallowed or if inhaled.
- H314 Causes severe skin burns and eye damage.
- H335 May cause respiratory irritation.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:
**Prevention:**
- P210 Keep away from heat.
- P220 Keep/Store away from clothing/ combustible materials.
- P221 Take any precaution to avoid mixing with combustibles.
- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- P363 Wash contaminated clothing before reuse.
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.

**Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards:
Repeated exposure may cause skin dryness or cracking.
Repeated exposure may cause skin dryness or cracking.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical nature</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

**Hazardous components**
SECTION 4. FIRST AID MEASURES

If inhaled

: If breathed in, move person into fresh air.
  Artificial respiration and/or oxygen may be necessary.
  Consult a physician.
  Victim to lie down in the recovery position, cover and keep him warm.

In case of skin contact

: Take off contaminated clothing and shoes immediately.
  Wash off immediately with plenty of water.
  Call a physician immediately.
  Wash contaminated clothing before re-use.
  Keep warm and in a quiet place.

In case of eye contact

: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
  Remove contact lenses.
  Consult a physician.

If swallowed

: If swallowed, rinse mouth with water (only if the person is conscious).
  Do NOT induce vomiting.
  Drink plenty of water.
  Call a physician immediately.

Most important symptoms and effects, both acute and delayed

: burning or stinging of the eye
  Itching
  Redness
  tearing
  Irritation of the mouth, the esophagus and the gastrointestinal tract

Notes to physician

: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media

: Foam
  Dry powder
  Carbon dioxide (CO2)
  Water spray

Unsuitable extinguishing media

: Water spray jet

Specific hazards during firefighting

: Heating can release hazardous gases.
  Oxidizer. Contact with other material may cause fire.

Hazardous combustion products

: No hazardous combustion products are known
Specific extinguishing methods: Remove undamaged containers from fire area if it is safe to do so.

Further information: Cool containers/tanks with water spray.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Do not breathe vapours or spray mist. Evacuate personnel to safe areas. In the event of an accidental release the emergency response team must respond based on a risk assessment and use personal protective equipment as appropriate.

Environmental precautions: Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up: Dilute with plenty of water. Hold in a pond or diked area until hydrogen peroxide decomposes. Large spills: Dam up. Soak up with inert absorbent material. Keep in properly labelled containers. Small spills: Gently cover the spill with an absorbent towel or pad. Large spills + Small spills: Keep in suitable, closed containers for disposal. Treat recovered material as described in the section "Disposal considerations". Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: No data available

Advice on safe handling: Do not remove plastic wrap if leak indicator has changed from yellow to red. To avoid thermal decomposition, do not overheat. Avoid inhalation, ingestion and contact with skin and eyes. Use only with adequate ventilation. Use personal protective equipment as required.

Conditions for safe storage: To maintain product quality, do not store in heat or direct sunlight. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep away from heat and sources of ignition. Contamination of the exterior of the primary container should be avoided. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible rupture.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen peroxide solution</td>
<td>7722-84-1</td>
<td>TWA</td>
<td>1 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 ppm 1.4 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 ppm 1.4 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 ppm 1.4 mg/m3</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>1 ppm 1.4 mg/m3 (H2O2)</td>
<td>CAL PEL</td>
</tr>
</tbody>
</table>

Engineering measures: All personal protective equipment should be based on a risk assessment. Consult a Environment Health Safety expert if necessary.

Personal protective equipment

Respiratory protection: Engineering controls should always be the primary method of controlling exposures. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit. If respiratory protective equipment is needed for certain activities, the type as well as the corresponding protection factor will depend upon the risk assessment and air concentrations, hazards, physical and warning properties of substances present. No personal respiratory protective equipment normally required.

Hand protection

Remarks: Impervious gloves

Eye protection: Safety glasses with side-shields

Skin and body protection: Wear suitable protective clothing.

Protective measures: The type of protective equipment must be selected based on the Environmental Health and Safety risk assessment. Consult a Environmental Health and Safety expert if necessary.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using do not eat, drink or smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Sealed cassette containing a liquid
Colour: colourless
Odour: odourless
Odour Threshold: No data available
pH: 1.0 - 3.0, (20 °C)
Melting point/range: -52 °C
Boiling point/boiling range: 118 °C
Flash point: > 93.4 °C
Evaporation rate: No data available
Flammability (solid, gas): No information available.
Upper explosion limit: No data available
Lower explosion limit: No data available
Vapour pressure: No data available
Relative vapour density: No data available
Relative density: No data available
Density: > 1 g/ml (20 °C)

Solubility(ies)
- Water solubility: soluble
- Solubility in other solvents: No data available

Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity
- Viscosity, dynamic: No data available
Viscosity, kinematic : No data available
Explosive properties : No data available
Oxidizing properties : The substance or mixture is classified as oxidizing with the category 2.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : None reasonably foreseeable.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerisation does not occur.
Conditions to avoid : To avoid thermal decomposition, do not overheat. Fire or intense heat may cause violent rupture of packages. Contamination could cause product to become unstable and decompose.
Incompatible materials : Strong acids and strong bases
Heavy metal salts
Reducing agents
Combustible material
Contamination
Accelerators
Hazardous decomposition products : Oxygen

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:
Acute oral toxicity : Acute toxicity estimate: 847.46 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 18.64 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Components:
hydrogen peroxide solution
Acute oral toxicity : LD50 (Rat): 225 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.
Remarks: Classification according to Regulation 1272/2008 Annex VI
Skin corrosion/irritation

Components:
hydrogen peroxide solution
Result: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Components:
hydrogen peroxide solution
Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

STOT - single exposure

Components:
hydrogen peroxide solution
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure
No data available

Repeated dose toxicity
No data available

Aspiration toxicity
No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
hydrogen peroxide solution
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 7.7 mg/l Exposure time: 24 h
Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
Product:
Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Components:
hydrogen peroxide solution
Additional ecological information : Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : In accordance with National, Federal, State and Local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number : UN 2014
Proper shipping name : HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Class : 5.1
Subsidiary risk : 8
Packing group : II
Labels : 5.1 (8)

IATA-DGR
Not permitted for transport Remarks : Special Provision A75: Articles such as sterilization devices, when containing less than 30 mL per inner packaging, with not

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SAFETY DATA SHEET

STERRAD® Cassettes

Version 1.41 | Revision Date: 2018/06/13 | SDS Number: 100000011187 | Date of last issue: 2018/04/21 | Date of first issue: 2015/03/13

more than 150 mL per outer packaging may be transported on passenger and cargo aircraft in accordance with Excepted Quantity provisions provided such packagings were first subjected to comparative fire testing.

**IMDG-Code**
- UN number: UN 2014
- Proper shipping name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION

<table>
<thead>
<tr>
<th>Class</th>
<th>Subsidiary risk</th>
<th>Packing group</th>
<th>Labels</th>
<th>EmS Code</th>
<th>Segregation group</th>
<th>Marine pollutant</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>8</td>
<td>II</td>
<td>5.1 (8)</td>
<td>F-H, S-Q</td>
<td>peroxides</td>
<td>no</td>
</tr>
</tbody>
</table>

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable for product as supplied.

**National Regulations**

**49 CFR**
- UN/ID/NA number: UN 2014
- Proper shipping name: Hydrogen peroxide, aqueous solutions

<table>
<thead>
<tr>
<th>Class</th>
<th>Subsidiary risk</th>
<th>Packing group</th>
<th>Labels</th>
<th>ERG Code</th>
<th>Marine pollutant</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>8</td>
<td>II</td>
<td>5.1, 8</td>
<td>140</td>
<td>no</td>
</tr>
</tbody>
</table>

**SECTION 15. REGULATORY INFORMATION**

**EPCRA - Emergency Planning and Community Right-to-Know Act**

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>waterstofperoxide</td>
<td>7722-84-1</td>
<td>1000</td>
<td>1695</td>
</tr>
</tbody>
</table>

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**US State Regulations**

**Massachusetts Right To Know**
- hydrogen peroxide solution 7722-84-1 50 - 70 %

**Pennsylvania Right To Know**
- hydrogen peroxide solution 7722-84-1 50 - 70 %
- water 7732-18-5 30 - 50 %

**New Jersey Right To Know**
- hydrogen peroxide solution 7722-84-1 50 - 70 %
- water 7732-18-5 30 - 50 %

**California Prop 65**
: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Other regulations**
: Restricted to professional users.

This product is not subject to TSCA and TSCA 12(b) Export notification because Food, Drugs and cosmetic products are exempt.

**SECTION 16. OTHER INFORMATION**

**Further information**

**NFPA:**

Flammability

Health

1

1

2

OX

Instability

**HMIS III:**

HEALTH

1

FLAMMABILITY

1

PHYSICAL HAZARD

2

0 = not significant, 1 =Slight, 2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 2018/06/13
Date and Number Formats

This document uses the following notation for printing dates and numbers:

Date: Oct 31st, 2012 as 2012/10/31
Numbers: 123456,78 as 123,456.78

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN