SAFETY DATA SHEET

Hydrogen Peroxide Bottle

Version 1.2  Revision Date: 2015/04/21  SDS Number: 100000011388  Date of last issue: 2015/04/09

SECTION 1. IDENTIFICATION

Product name: Hydrogen Peroxide Bottle
Substance name: Hydrogen Peroxide Solution (500mL Bottle)

Manufacturer or supplier’s details
Company name of supplier: Advanced Sterilization Products
Address: 33 Technology Drive
Irvine, CA 92618
US
Telephone: (800) 755-5900

Emergency telephone number: (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
Skin corrosion: Sub-category 1B
Specific target organ toxicity - single exposure: Category 3
Chronic aquatic toxicity: Category 3
Contains 58% Hydrogen Peroxide

GHS Label element
Medicinal devices are not subject to GHS labeling.
Hazard pictograms:

Signal word: Danger
Hazard statements: H272 May intensify fire; oxidiser.
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 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
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 or doctor/ physician.
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
Repeted exposure may cause skin dryness or cracking.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Chemical nature: Liquid

Hazardous components:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen peroxide solution</td>
<td>7722-84-1</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
</tbody>
</table>
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 : None known.

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: 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. Ensure adequate ventilation. Do not breathe vapours or spray mist. Evacuate personnel to safe areas. Refer to protective measures listed in sections 7 and 8.

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: To avoid thermal decomposition, do not overheat. For personal protection see section 8. Avoid inhalation, ingestion and contact with skin and eyes. Use only with adequate ventilation.

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.

Recommended storage temperature: 15 - 30 °C.
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>
</tbody>
</table>

Engineering measures: All personal protective equipment should be based on a risk assessment. Consult an Environment Health and 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 an 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.
Appearance: liquid, Bottle

Colour: colourless

Odour: odourless

Odour Threshold: No data available

pH: 1.0 - 3.0, (20 °C)

Melting point/range: -52 °C

Boiling point/bubbling 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 recommended storage 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.
- Exposure to sunlight.

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
- Acute inhalation toxicity: LC50 (Rat): 170 mg/l
- Exposure time: 4 h

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**

<table>
<thead>
<tr>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.</td>
</tr>
<tr>
<td>Group 3: Not classifiable as to its carcinogenicity to humans</td>
</tr>
</tbody>
</table>

**OSHA**
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**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 transport regulations
DOT
UN number : 2014
Description of the goods : Hydrogen peroxide, aqueous solutions
Class : 5.1
Packing group : II
Labels : 5.1 (8)
Emergency Response : 140
Guidebook Number :
Environmentally hazardous : no

IATA
UN number : 2014
Description of the goods : Hydrogen peroxide, aqueous solution
Class : 5.1
Packing group : II
Labels : 5.1 (8)
Packing instruction (CAO) : 554
Packing instruction (PAX and CAO) : 554
Packing instruction (LQ) : Y540
Environmentally hazardous : no

IMDG
UN number : 2014
Description of the goods : HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Class : 5.1
Packing group : II
Labels : 5.1 (8)
EmS Number 1 : F-H
EmS Number 2 : S-Q
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category :
Ship type :

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>Hydrogen peroxide</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 12 (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.

**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.

**The components of this product are reported in the following inventories:**

**REACH**
- Not in compliance with the inventory
- hydrogen peroxide solution
- water

**CH INV**
- The formulation contains substances listed on the Swiss Inventory
- hydrogen peroxide solution
- water

**TSCA**
- On TSCA Inventory

**DSL**
- All components of this product are on the Canadian DSL.
SAFETY DATA SHEET

Hydrogen Peroxide Bottle

SECTION 16. OTHER INFORMATION

Further information

NFPA:

Health

Flammability

Instability

OX

1

2

OX

Special hazard.

HMIS III:

HEALTH

FLAMMABILITY

PHYSICAL HAZARD

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

Revision Date:

2015/04/21

Date and Number Formats

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

Date:

Dec 31th, 2012  as  2012/12/31

Numbers:

123456,78  as  123,456.78

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)
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