SAFETY DATA SHEET

1. Identification

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>Hydrogen Peroxide 25% Standard Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td></td>
</tr>
<tr>
<td>SDS number</td>
<td>320864-03</td>
</tr>
<tr>
<td>Recommended use</td>
<td>Bleaching agent; oxidizer.</td>
</tr>
<tr>
<td>Recommended restrictions</td>
<td>None known.</td>
</tr>
</tbody>
</table>

Manufacturer/Importer/Supplier/Distributor information

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Harcros Chemicals Inc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company name</td>
<td>Harcros Chemicals Inc</td>
</tr>
<tr>
<td>Address</td>
<td>5200 Speaker Rd.</td>
</tr>
<tr>
<td></td>
<td>Kansas City, KS 66106</td>
</tr>
<tr>
<td></td>
<td>United States</td>
</tr>
<tr>
<td>Main Telephone Number</td>
<td>1-913-321-3131</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.harcros.com">www.harcros.com</a></td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:custserv@harcros.com">custserv@harcros.com</a></td>
</tr>
<tr>
<td>Emergency #: CHEMTREC</td>
<td>1-800-424-9300</td>
</tr>
<tr>
<td>Emergency #: CHEMTREC</td>
<td>1-703-527-3887 (call collect)</td>
</tr>
</tbody>
</table>

2. Hazard(s) identification

Physical hazards: Oxidizing liquids

Health hazards:
- Acute toxicity, oral
- Skin corrosion/irritation
- Serious eye damage/eye irritation
- Specific target organ toxicity, repeated exposure

Environmental hazards: Not classified.

OSHA defined hazards:
- Combustible dust: Not applicable
- Pyrophoric gas: Not applicable
- Simple asphyxiant: Not applicable

Label elements

Signal word: Danger

Hazard statement: May intensify fire; oxidizer. May intensify fire; oxidizer. Harmful if swallowed. Causes severe skin burns and eye damage. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention: Keep away from heat. Do not breathe mist or vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response

If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention if you feel unwell. Wash contaminated clothing before reuse.

Storage

Store away from incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in accordance with local/regional/national/international regulations.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Peroxide</td>
<td>7722-84-1</td>
<td>20 - &lt; 30</td>
<td></td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td>70 - &lt; 80</td>
<td></td>
</tr>
</tbody>
</table>

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards  
May intensify fire; oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures  
Keep unnecessary personnel away. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up  
Use water spray to reduce vapors or divert vapor cloud drift. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Wear appropriate protective equipment and clothing during clean-up. This product is miscible in water. Should not be released into the environment.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions  
Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling  
Keep away from heat. Take any precaution to avoid mixing with combustibles. Keep away from clothing and other combustible materials. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities  
Store locked up. Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Peroxide (CAS 7722-84-1)</td>
<td>PEL</td>
<td>1.4 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 ppm</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Peroxide (CAS 7722-84-1)</td>
<td>TWA</td>
<td>1 ppm</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
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<tr>
<th>Components</th>
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</tr>
<tr>
<td></td>
<td></td>
<td>1 ppm</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. It is recommended that users of this product perform a risk assessment to determine the appropriate PPE.

### Appropriate engineering controls

- **Individual protection measures, such as personal protective equipment**
  - **Eye/face protection**: Chemical respirator with organic vapor cartridge and full facepiece. Do not get in eyes. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
  - **Skin protection**
    - **Hand protection**: Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.
    - **Other**: Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
  - **Respiratory protection**: Chemical respirator with organic vapor cartridge and full facepiece.
  - **Thermal hazards**: Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

- Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 9. Physical and chemical properties

- **Appearance**
  - **Physical state**: Liquid.
  - **Form**: Liquid.
  - **Color**: Colorless.
  - **Odor**: Odorless.
  - **Odor threshold**: Not available.
  - **pH**: 4 - 6
  - **Melting point/freezing point**: -7.6 °F (-22 °C)
  - **Initial boiling point and boiling range**: > 212 °F (> 100 °C)
  - **Flash point**: Not available.
  - **Evaporation rate**: Not available.
  - **Flammability (solid, gas)**: Not applicable.
  - **Upper/lower flammability or explosive limits**
    - **Flammability limit - lower (%)**: Not available.
    - **Flammability limit - upper (%)**: Not available.
    - **Explosive limit - lower (%):** Not available.
    - **Explosive limit - upper (%):** Not available.
  - **Vapor pressure**: Not available.
  - **Vapor density**: Not available.
  - **Relative density**: Not available.
  - **Solubility(ies)**
    - **Solubility (water)**: Complete.
  - **Partition coefficient**
    - **(n-octanol/water)**: Not available.
  - **Auto-ignition temperature**: Not available.
Decomposition temperature: Not available.

Viscosity: Not available.

**Other Information**
- **Explosive properties**: Not explosive.
- **Flash point class**: Non-flammable.
- **Oxidizing properties**: May intensify fire; oxidizer.
- **Percent volatile**: 100
- **pH in aqueous solution**: 5 - 6
- **Specific gravity**: 1.091 @20°C

**10. Stability and reactivity**

**Reactivity**: Greatly increases the burning rate of combustible materials.

**Chemical stability**: Material is stable under normal conditions.

**Possibility of hazardous reactions**: Hazardous polymerization does not occur.

**Conditions to avoid**: Heat. Contact with incompatible materials.

**Incompatible materials**: Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Combustible material. Reducing agents. Metals. Carbon. Salts.

**Hazardous decomposition products**: Oxygen.

**11. Toxicological information**

**Information on likely routes of exposure**
- **Inhalation**: May cause damage to organs through prolonged or repeated exposure by inhalation. May cause irritation to the respiratory system.
- **Skin contact**: Causes severe skin burns.
- **Eye contact**: Causes serious eye damage.
- **Ingestion**: Causes digestive tract burns. Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**
- **Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.**

**Information on toxicological effects**
- **Acute toxicity**: Harmful if swallowed. May cause respiratory irritation.
- **Skin corrosion/irritation**: Causes severe skin burns and eye damage.
- **Serious eye damage/eye irritation**: Causes serious eye damage.

**Respiratory or skin sensitization**
- **Respiratory sensitization**: Not a respiratory sensitizer.
- **Skin sensitization**: This product is not expected to cause skin sensitization.

**Germ cell mutagenicity**: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
- Hydrogen Peroxide (CAS 7722-84-1) Not classifiable as to carcinogenicity to humans.

- Not regulated.

**US. National Toxicology Program (NTP) Report on Carcinogens**
- Not listed.

**Reproductive toxicity**: This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity -
single exposure
May cause respiratory irritation.

Specific target organ toxicity -
repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

12. Ecological information
Ecotoxicity
Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations
Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information
DOT

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN2014</th>
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<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Hydrogen peroxide, aqueous solution 20 to 40%</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
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</tr>
<tr>
<td>Class</td>
<td>5.1</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>8</td>
</tr>
<tr>
<td>Label(s)</td>
<td>5.1, 8</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Special provisions</td>
<td>12, B53, B80, B81, B85, IB2, IP5, T7, TP2, TP6, TP24, TP37</td>
</tr>
<tr>
<td>Packaging exceptions</td>
<td>None</td>
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<tr>
<td>Packaging non bulk</td>
<td>202</td>
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<tr>
<td>Packaging bulk</td>
<td>243</td>
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IATA

<table>
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<tr>
<th>UN number</th>
<th>UN2014</th>
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</tr>
<tr>
<td>Subsidiary risk</td>
<td>8</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
</tr>
</tbody>
</table>
5C
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

Other information
Passenger and cargo aircraft
Forbidden
Cargo aircraft only
Forbidden

IMDG
UN number
UN2014
UN proper shipping name
Hydrogen peroxide, aqueous solution 20 to 40%

Transport hazard class(es)
Class
5.1
Subsidiary risk
8
Label(s)
5.1, 8
Packing group
II

Environmental hazards
Marine pollutant
No.

EmS
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

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

DOT

IATA; IMDG

15. Regulatory information
US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Hydrogen Peroxide (CAS 7722-84-1) 1000 LBS

Material name: Hydrogen Peroxide 25% Standard Grade
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
- Immediate Hazard - Yes
- Delayed Hazard - Yes
- Fire Hazard - Yes
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
- Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
  Not regulated.
- Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
  Not regulated.
- Safe Drinking Water Act (SDWA)
  Not regulated.

US state regulations
- US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
  Not listed.
- US. Massachusetts RTK - Substance List
  Hydrogen Peroxide (CAS 7722-84-1)
- US. New Jersey Worker and Community Right-to-Know Act
  Hydrogen Peroxide (CAS 7722-84-1)
- US. Pennsylvania Worker and Community Right-to-Know Law
  Hydrogen Peroxide (CAS 7722-84-1)
- US. Rhode Island RTK
  Hydrogen Peroxide (CAS 7722-84-1)
- US. California Proposition 65
  California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Country(s) or region | Inventory name | On inventory (yes/no)*
---|---|---
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

| Issue date | 02-17-2016 |
| Version # | 01 |
| HMIS® ratings | Health: 3*  
Flammability: 0  
Physical hazard: 2 |
| NFPA ratings | Health: 3  
Flammability: 0  
Instability: 0  
Special hazards: OX |

Disclaimer
Harcros Chemicals Inc cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals Inc., provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals Inc., knows of no medical condition, other than those noted on this Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.

Revision information
Hazard(s) identification: Disposal  
Hazard(s) identification: Response