

Hydrogen Peroxide Solution

R-0649

SDS Preparation Date (mm/dd/yyyy): 02/14/2016

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Hydrogen Peroxide Solution**

Product Code(s) : R-0649

Recommended use of the chemical and restrictions on use

: Use as directed by manufacturer for purposes directly related to water testing.
Recommended restrictions: None known.

Chemical family : Mixture

Name, address, and telephone number
of the supplier:

**Lowry & Associates, Div. of Chem-Aquascience,
Inc.**

5-1151 Gorham Street
Newmarket, ON, Canada
L3Y 8Y1

Supplier's Telephone # : 905-836-0505

24 Hr. Emergency Tel # : Canutec: 613-966-6666

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Odorless.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Serious eye damage/eye irritation - Category 1

Skin Corrosion/Irritation - Category 2

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Causes serious eye damage.

Causes skin irritation.

Precautionary statement(s)

Wash thoroughly after handling.

Wear protective gloves/eye protection/face protection.

If on skin: Wash with plenty of water.

If skin irritation or rash occurs: Get medical advice/attention.

Take off immediately all contaminated clothing and wash it before reuse.

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.

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Other hazards

Other hazards which do not result in classification: Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

| <u>Chemical name</u> | <u>Common name and synonyms</u> | <u>CAS #</u> | <u>Concentration (% by weight)</u> |
|----------------------|---------------------------------|--------------|------------------------------------|
| Hydrogen peroxide | Dihydrogen dioxide | 7722-84-1 | 3.00 |

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Seek immediate medical attention/advice. Never give anything by mouth if victim is unconscious.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
- Skin contact* : Take off all contaminated clothing immediately. Immediately flush skin with gently flowing, running water for at least 20 minutes. Do not rub area of contact. Cover wound with sterile dressing. Seek immediate medical attention/advice. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed.
- Eye contact* : Immediately flush eyes with running water for at least 20 minutes. Protect unharmed eye. Seek immediate medical attention/advice.

Most important symptoms and effects, both acute and delayed

- : Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage. Causes skin irritation. Symptoms may include tearing, redness and discomfort. Ingestion may cause irritation of the mouth, throat and stomach. May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

- Suitable extinguishing media* : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

- Unsuitable extinguishing media* : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Burning produces obnoxious and toxic fumes.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Carbon oxides ;Hydrogen ;Oxygen.

Special protective equipment and precautions for firefighters

- Protective equipment for fire-fighters* : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

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Special fire-fighting procedures

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Dike for water control. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

- : Remove all sources of ignition. Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities.

Special spill response procedures

- : Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.
 US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use in a well-ventilated area. Wear protective gloves and eye/face protection. Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and flame. Keep away from bases, metals and other incompatibles. Keep container tightly closed when not in use. Keep only in original container. Wash thoroughly after handling.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Store locked up. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Store in corrosion-resistant containers. Keep only in original container.

Incompatible materials : Brass ;Iron; Copper ;Copper alloys; Zinc; Nickel.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

| <u>Chemical Name</u> | <u>ACGIH TLV</u> | | <u>OSHA PEL</u> | |
|----------------------|------------------|-------------|-------------------------------|-------------|
| | <u>TWA</u> | <u>STEL</u> | <u>PEL</u> | <u>STEL</u> |
| Hydrogen peroxide | 1 ppm | N/Av | 1 ppm ; 1.4 mg/m ³ | N/Av |

Exposure controls

Ventilation and engineering measures

- : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

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- Respiratory protection** : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Confirmation of which type of respirator is most suitable for the intended application should be obtained from respiratory protection suppliers. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.
- Skin protection** : Wear protective gloves. Advice should be sought from glove suppliers.
- Eye / face protection** : Wear eye/face protection. Chemical splash goggles must be worn when handling this material. A full face shield may also be necessary.
- Other protective equipment** : Other equipment may be required depending on workplace standards. An eyewash station and safety shower should be made available in the immediate working area.
- General hygiene considerations** : Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Clear colourless liquid.
- Odour** : Odorless.
- Odour threshold** : N/Av
- pH** : Not available.
- Melting/Freezing point** : N/Av
- Initial boiling point and boiling range** : 101.1°C (214°F)
- Flash point** : Not applicable.
- Flashpoint (Method)** : Not applicable.
- Evaporation rate (BuAe = 1)** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Lower flammable limit (% by vol.)** : Not applicable.
- Upper flammable limit (% by vol.)** : Not applicable.
- Oxidizing properties** : No oxidizing properties.
- Explosive properties** : Not explosive
- Vapour pressure** : 10.1 mmHg
- Vapour density** : 0.63
- Relative density / Specific gravity** : 1.00
- Solubility in water** : Soluble
- Other solubility(ies)** : None known.
- Partition coefficient: n-octanol/water or Coefficient of water/oil distribution** : N/Av
- Auto-ignition temperature** : N/Av
- Decomposition temperature** : Not available.
- Viscosity** : N/Av
- Volatiles (% by weight)** : Not available.
- Volatile organic Compounds (VOC's)** : Not available.
- Absolute pressure of container** : N/Av

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Flame projection length : N/Ap
Other physical/chemical comments : None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : This product is not reactive.
Chemical stability : Stable under the recommended storage and handling conditions prescribed.
Possibility of hazardous reactions : Hazardous polymerization does not occur.
Conditions to avoid : Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials : Brass ;Iron; Copper ;Copper alloys; Zinc; Nickel.
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption : NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Causes skin irritation. Symptoms may include redness, edema, drying defatting and cracking of the skin.

Sign and symptoms eyes

: Causes serious eye damage. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result.

Potential Chronic Health Effects

: Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: Not available.

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Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

| <u>Chemical name</u> | <u>LC₅₀(4hr)</u> <u>inh, rat</u> | <u>LD₅₀</u> | |
|----------------------|--|------------------------|-------------------------|
| | | <u>(Oral, rat)</u> | <u>(Rabbit, dermal)</u> |
| Hydrogen peroxide | 0.17 mg/L 4 h (no deaths) | 1193 mg/kg | >2000 mg/kg |

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See data for individual ingredient ecotoxicity data.

Ecotoxicity data:

| <u>Ingredients</u> | <u>CAS No</u> | <u>Toxicity to Fish</u> | | |
|--------------------|---------------|------------------------------|----------------------|-----------------|
| | | <u>LC₅₀ / 96h</u> | <u>NOEC / 21 day</u> | <u>M Factor</u> |
| Hydrogen peroxide | 7722-84-1 | 16.4mg/L (Fathead minnow) | N/Av | None. |

| <u>Ingredients</u> | <u>CAS No</u> | <u>Toxicity to Daphnia</u> | | |
|--------------------|---------------|------------------------------|----------------------|-----------------|
| | | <u>EC₅₀ / 48h</u> | <u>NOEC / 21 day</u> | <u>M Factor</u> |
| Hydrogen peroxide | 7722-84-1 | 2.4mg/L Water flea | N/Av | None. |

| <u>Ingredients</u> | <u>CAS No</u> | <u>Toxicity to Algae</u> | | |
|--------------------|---------------|-------------------------------------|--------------------------|-----------------|
| | | <u>EC₅₀ / 96h or 72h</u> | <u>NOEC / 96h or 72h</u> | <u>M Factor</u> |
| Hydrogen peroxide | 7722-84-1 | N/Av | 0.63 mg/L (Green algae) | None. |

Persistence and degradability

: Readily biodegradable.

Bioaccumulation potential

: No data is available on the product itself.

| <u>Components</u> | <u>Partition coefficient n-octanol/water (log Kow)</u> | <u>Bioconcentration factor (BCF)</u> |
|-----------------------------------|--|--------------------------------------|
| Hydrogen peroxide (CAS 7722-84-1) | 1.50 | no bioaccumulation |

Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No additional information.

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SECTION 13. DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.
- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.
- RCRA** : Under the RCRA, it is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14. TRANSPORTATION INFORMATION

| Regulatory Information | UN Number | UN proper shipping name | Transport hazard class(es) | Packing Group | Label |
|---|-----------|-------------------------|----------------------------|---------------|---|
| 49CFR/DOT | None. | Not regulated. | not regulated | none |  |
| 49CFR/DOT Additional information | None. | | | | |
| TDG | None. | Not regulated. | not regulated | none |  |
| TDG Additional information | None. | | | | |
| ICAO/IATA | None. | Not regulated. | not regulated | none |  |
| ICAO/IATA Additional information | None. | | | | |
| IMDG | None. | Not regulated. | not regulated | none |  |
| IMDG Additional information | None. | | | | |

Special precautions for user : None reported by the manufacturer.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

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

: No information available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

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| <u>Ingredients</u> | CAS # | TSCA Inventory | CERCLA Reportable Quantity(RQ) (40 CFR 117.302): | SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355: | SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical | |
|--------------------|-----------|----------------|--|--|---|--------------------------|
| | | | | | Toxic Chemical | de minimus Concentration |
| Hydrogen peroxide | 7722-84-1 | Yes | N/Ap | 1000 lb TPQ (concentration >52%) | No | N/Ap |

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: Acute Health Hazard Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

| <u>Ingredients</u> | CAS # | California Proposition 65 | | State "Right to Know" Lists | | | | | |
|--------------------|-----------|---------------------------|------------------|-----------------------------|-----|-----|-----|-----|-----|
| | | Listed | Type of Toxicity | CA | MA | MN | NJ | PA | RI |
| Hydrogen peroxide | 7722-84-1 | No | N/Ap | Yes | Yes | Yes | Yes | Yes | Yes |

Canadian Information:

WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product. All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

| <u>Ingredients</u> | CAS # | European EINECS | Australia AICS | Philippines PICCS | Japan ENCS | Korea KECI/KECL | China IECSC | NewZealand IOC |
|--------------------|-----------|-----------------|----------------|-------------------|------------|-----------------|-------------|---|
| Hydrogen peroxide | 7722-84-1 | 231-765-0 | Present | Present | (1)-419 | KE-20204 | Present | HSR001326, HSR001449, HSR001450 (dilution) |

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- IUCLID: International Uniform Chemical Information Database
- MA: Massachusetts
- MN: Minnesota

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MSHA: Mine Safety and Health Administration
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

: Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2015 (Chempendium, RTECs, HSDB, INCHEM).
 European Chemicals Agency, Classification Legislation, 2015
 Material Safety Data Sheet from manufacturer
 OECD- The Global Portal to Information on Chemical Substances - eChemPortal, 2015

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

| | |
|--|--|
| <p>Prepared for: Lowry & Associates, Div. of Chem-Aquascience, Inc. 5-1151 Gorham Street Newmarket, ON L3Y 8Y1 www.lowryassociates.ca</p> |  |
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