

Your Company

File Name

17273

MSDS Summary Sheet

156

Revised: Mar-28-2005

Product: HYDROGEN PEROXIDE 30-50%

WHMIS Classification



C - Oxidizing



E - Corrosive



D2A - Very Toxic

Personal Protective Equipment



Safety Glasses



Hand Protection



Full Body Protective Clothing

First Aid Requirements

IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION

Inhalation:

Immediately remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth. If not breathing, administer artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. Seek medical attention.

Eye Contact:

Extensive irrigation is required (at least 30 minutes), occasionally lifting the upper and lower eyelids. Do not allow person to rub eyes or keep eyes closed. Seek medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention immediately.

Ingestion:

Do not induce vomiting. If conscious and alert, give 2-4 cups of milk or water to drink. Never give anything by mouth to an unconscious person. Rinse mouth with water. In the event of spontaneous vomiting, give water. Seek medical attention immediately.

Handling and Storage Requirements

Store and use with adequate ventilation. Store below 35 °C in a cool, dry, well-ventilated area away from incompatibles and combustibles. Keep away from heat, sparks and flame. Keep containers tightly closed. Protect from light. Avoid all contact.

TDG Requirements



Class 5.1



Class 8

Shipping Name:

HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Hazard Class:

5.1(8)

UN Number: UN2014

Packing Group: II

Departments:

Laboratory

Production

Emergency Response: In case of emergency contact your immediate supervisor.

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Identification:

- **Key:** 11189
- **Name:** Hydrogen Peroxide 30-50%

Catalog Numbers:

AC9470941, S74876, S74876-1, S748761, S748761MF, S74879, S74882, H323-500, H325-100, H325-30GAL, H325-4, H325-500, H325-500001, H327-500, H327-500LC, NC9839610, WESH325500, ZZH3253015

Synonyms:

- Carbamide Peroxide; Hydrogen Dioxide; Peroxide; Hydroperoxide; Urea
- Peroxide; Hydrogen Peroxide 100 Volumes.

Company Identification:

Fisher Scientific
 1 Reagent Lane
 Fairlawn, NJ 07410

For information, call:

- 201-796-7100

Emergency Number:

- 201-796-7100

For CHEMTREC assistance, call:

- 800-424-9300

For International CHEMTREC assistance, call:

- 703-527-3887

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

| CAS # | Chemical Name | % | EINECS # |
|-----------|-------------------|-------|-----------|
| 7722-84-1 | Hydrogen peroxide | 30-50 | 231-765-0 |
| 7732-18-5 | Water | 50-70 | 231-791-2 |

Hazard Symbols: O C

Risk Phrases: 34 8

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Danger! Strong oxidizer. Contact with other material may cause a fire. Corrosive. Light sensitive. May be harmful if swallowed. May cause central nervous system effects. Eye contact may result in permanent eye damage. May cause blood abnormalities. May cause severe respiratory tract irritation with possible burns. Causes eye and skin irritation and possible burns. May cause severe digestive tract irritation with possible burns.

Target Organs: Blood, central nervous system.

POTENTIAL HEALTH EFFECTS

Eye: Contact with liquid is corrosive to the eyes and causes severe burns. Contact with the eyes may cause corneal damage.

Skin: Causes severe skin irritation and possible burns. May cause discoloration, erythema (redness), swelling, and the formation of papules and vesicles (blisters).

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Causes gastrointestinal tract burns. May cause vascular collapse and damage. May cause damage to the red blood cells. May cause difficulty in swallowing, stomach distension, possible cerebral swelling and death. Ingestion may result in irritation of the esophagus, bleeding of the stomach and ulcer formation.

Inhalation: Causes chemical burns to the respiratory tract. May cause ulceration of nasal tissue, insomnia, nervous tremors with numb extremities, chemical pneumonia, unconsciousness, and death. At high concentrations, respiratory effects may include acute lung damage and delayed pulmonary edema.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Laboratory experiments have resulted in mutagenic effects. Repeated contact may cause corneal damage.

SECTION 4 - FIRST AID MEASURES

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Wash mouth out with water. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively. Attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. In the event of severe distension of the stomach or esophagus due to gas formation, insertion of a gastric tube may be required. To treat corneal damage, careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered.

SECTION 5 - FIRE FIGHTING MEASURES

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Strong oxidizer. Contact with combustible materials may cause a fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Use water with caution and in flooding amounts. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Some oxidizers may react explosively with hydrocarbons(fuel). May decompose explosively when heated or involved in a fire. May accelerate burning if involved in a fire.

Extinguishing Media: Use water only! Do NOT use carbon dioxide. Do NOT use dry chemical. Do NOT get water inside containers. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out. For large fires, flood fire area with large quantities of water, while knocking down vapors with water fog.

Autoignition Temperature: Noncombustible

Flash Point: Noncombustible

Explosion Limits, lower: 40 vol %

Explosion Limits, upper: 100 vol %

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1; Special Hazard: OX

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Flush spill area with water. Provide ventilation. Do not get water inside containers. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

SECTION 7 - HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Contents may develop pressure upon prolonged storage. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Do not ingest or inhale. Store protected from light. Discard contaminated shoes. Unused chemicals should not be returned to the container. Rinse empty drums and containers thoroughly with water before discarding.

Storage: Keep away from heat, sparks, and flame. Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light. Keep away from alkalis, oxidizable materials, finely divided metals, alcohols, and permanganates. Store below 35°C. Store only in light-resistant containers fitted with a safety vent.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

EXPOSURE LIMITS

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|-------------------|-------------|---|-------------------------------------|
| Hydrogen peroxide | 1 ppm | 1 ppm TWA; 1.4mg/m ³ TWA 75ppm IDLH | 1 ppm TWA; 1.4mg/m ³ TWA |
| Water | none listed | none listed | none listed |

OSHA Vacated PELs:

Hydrogen peroxide: 1 ppm TWA; 1.4 mg/m³ TWA

Water: No OSHA Vacated PELs are listed for this chemical.

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: clear, colorless

Odor: slight acid odor

pH: 3.3 (30% solution)

Vapor Pressure: 23 mm Hg @ 30C

Vapor Density: 1.10

Evaporation Rate: >1.0 (Butyl acetate=1)

Viscosity: 1.25 cP

Boiling Point: 108 deg C @ 760 mmHg

Freezing/Melting Point: -33 deg C

Decomposition Temperature: Not available.

Solubility in water: Miscible in water.

Specific Gravity/Density: 1.1-1.2 (30-50%)

Molecular Formula: H2O2

Molecular Weight: 34.0128

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability: Decomposes slowly to release oxygen. Unstable when heated or contaminated with heavy metals, reducing agents, rust, dirt or organic materials. Stability is reduced when pH is above 4.0.

Conditions to Avoid: Mechanical shock, incompatible materials, light, ignition sources, dust generation, excess heat, combustible materials, reducing agents, alkaline materials, strong oxidants, rust, dust, pH > 4.0.

Incompatibilities with Other Materials: Activated carbon, tert-butyl alcohol, chlorosulfonic acid, cyclopentadiene, charcoal, formic acid, magnesium, hydrazine, hydrogen selenide, manganese dioxide, mercurous chloride, strong oxidizing agents, strong reducing agents, brass, copper, copper alloys, galvanized iron, nickel, lead, rust, ethers (e.g. dioxane, furfuran, tetrahydrofuran (THF)), carboxylic acids, alcohols, aniline, glycerine, sodium borate, urea, sodium carbonate, triethylamine, sodium fluoride, sodium pyrophosphate, soluble fuels (acetone, ethanol, glycerol), acetic acid, acetic anhydride, nitrogen compounds, wood, wood, alkalies, asbestos, organic matter, finely powdered metals, iron, silver, platinum, palladium, ketones, cyanides (e.g. potassium cyanide, sodium cyanide), hexavalent chromium compounds, nitric acid, potassium permanganate, salts of iron, copper, chromium, vanadium, tungsten, molybdeum, and platinum.

Hazardous Decomposition Products: Oxygen, hydrogen gas, water, heat, steam.

Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:

- CAS# 7722-84-1: MX0887000 MX0888000 MX0890000 MX0899000 MX0899500 MX0900000
- CAS# 7732-18-5: ZC0110000

LD50/LC50:

- CAS# 7722-84-1: Draize test, rabbit, eye: 1 mg Severe; Inhalation, rat: LC50 = 2 gm/m³/4H; Inhalation, rat: LC50 = 2000 mg/m³; Oral, mouse: LD50 = 2000 mg/kg; Oral, rabbit: LD50 = 820 mg/kg; Oral, rat: LD50 = 1518 mg/kg;

Oral, rat: LD50 = 910 mg/kg; Oral, rat: LD50 = 376 mg/kg; Oral, rat: LD50 = 4050 mg/kg; Skin, rat: LD50 = 3 gm/kg; Skin, rat: LD50 = 4060 mg/kg.

- CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg. Oral, rat: LD50 = 1232 mg/kg (35% H₂O₂); Oral, rat: LD50 = 841 mg/kg (60 %

Carcinogenicity:

Hydrogen peroxide -

- ACGIH: A3 - Animal Carcinogen IARC: Group 3 carcinogen

Water -

- Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

No information available.

Teratogenicity:

No information available.

Reproductive Effects:

No information available.

Neurotoxicity:

No information available.

Mutagenicity:

- CAS#: 7722-84-1 Mutation in Microorganisms: Salmonella typhimurium = 100 ug/plate.; Hyman, embryo = 50 umol/L.; Cytogenetic Analysis: Human, embryo = 20 umol/L. Mutation in Mammalian Somatic Cells: Hamster, lung = 1mmol/L.

Other Studies:

No data available.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Carp: LC50 = 42 mg/L; 48 Hr; UnspecifiedFish: Fathead Minnow:

- LC50 = 16.4 mg/L; 96 Hr; Fresh waterFish: Fathead Minnow: NOEC = 5 mg/L; **96 Hr; Fresh waterWater flea Daphnia:** EC50 = 2.4 mg/L; 48 Hr; **Fresh waterFish:** Channel catfish: LC50 = 37.4 mg/L; 96 Hr; Fresh water

SECTION 13 - DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

SECTION 14 - TRANSPORT INFORMATION

US DOT

- Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS
- Hazard Class: 5.1
- UN Number: UN2014
- Packing Group: II

Canadian TDG

- Shipping Name: HYDROGEN PEROXIDE AQUEOUS SOLN
- Hazard Class: 5.1(0.8)
- UN Number: UN2014

SECTION 15 - REGULATORY INFORMATION

US FEDERAL

TSCA

- CAS# 7722-84-1 is listed on the TSCA inventory.
- CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List

- None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

- None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

- None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

- None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

- None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

- CAS# 7722-84-1: 1,000 lb TPQ (concentration > 52%)

SARA Codes

- CAS # 7722-84-1: acute, flammable.

Section 313

- No chemicals are reportable under Section 313.

Clean Air Act:

- This material does not contain any hazardous air pollutants.
- This material does not contain any Class 1 Ozone depleters.
- This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

- None of the chemicals in this product are listed as Hazardous Substances under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

- None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Hydrogen peroxide can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

- Hazard Symbols: O C
- Risk Phrases:
 - R 34 Causes burns.
 - R 8 Contact with combustible material may cause fire.
- Safety Phrases:
 - S 3 Keep in a cool place.
 - S 28 After contact with skin, wash immediately with...
 - S 36/39 Wear suitable protective clothing and eye/face protection.
 - S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

- CAS# 7722-84-1: 0
- CAS# 7732-18-5: No information available.

United Kingdom Occupational Exposure Limits

- CAS# 7722-84-1: OES-United Kingdom, TWA 1 ppm TWA; 1.4 mg/m³ TWA
- CAS# 7722-84-1: OES-United Kingdom, STEL 2 ppm STEL; 2.8 mg/m³ STEL
- CAS# 7722-84-1: OES-United Kingdom, STEL 2 ppm STEL; 2.8 mg/m³ STEL

United Kingdom Maximum Exposure Limits

Canada

- CAS# 7722-84-1 is listed on Canada's DSL List.
- CAS# 7732-18-5 is listed on Canada's DSL List.
- This product has a WHMIS classification of C, E, D2A.
- CAS# 7722-84-1 is listed on Canada's Ingredient Disclosure List.
- CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

- CAS# 7722-84-1: OEL-AUSTRALIA:TWA 1 ppm (1.5 mg/m3)
- OEL-BELGIUM:TWA 1 ppm (1.4 mg/m3)
- OEL-DENMARK:TWA 1 ppm (1.4 mg/m3)
- OEL-FINLAND:TWA 1 ppm (1.4 mg/m3);STEL 3 ppm (4.2 mg/m3)
- OEL-FRANCE:TWA 1 ppm (1.5 mg/m3)
- OEL-GERMANY:TWA 1 ppm (1.4 mg/m3)
- OEL-THE NETHERLANDS:TWA 1 ppm (1.4 mg/m3)
- OEL-THE PHILIPPINES:TWA 1 ppm (1.4 mg/m3)
- OEL-SWITZERLAND:TWA 1 ppm (1.4 mg/m3);STEL 2 ppm (2.8 mg/m3)
- OEL-TURKEY:TWA 1 ppm (1.4 mg/m3)
- OEL-UNITED KINGDOM:TWA 1 ppm (1.5 mg/m3);STEL 2 ppm (3 mg/m3)

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|-------------------------------------|
| SECTION 16 - ADDITIONAL INFORMATION |
|-------------------------------------|

MSDS Creation Date: 4/21/1999, **Revision #4 Date:** 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

File No.
17273

Product Name
HYDROGEN PEROXIDE 30-50%

156

WHMIS Classification



Personal Protective Equipment



FIRST AID: IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION

Inhalation: Immediately remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth. If not breathing, administer artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. Seek medical attention.

Eye Contact: Extensive irrigation is required (at least 30 minutes), occasionally lifting the upper and lower eyelids. Do not allow person to rub eyes or keep eyes closed. Seek medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention immediately.

Ingestion: Do not induce vomiting. If conscious and alert, give 2-4 cups of milk or water to drink. Never give anything by mouth to an unconscious person. Rinse mouth with water. In the event of spontaneous vomiting, give water. Seek medical attention immediately.

Notes: DANGER! Strong oxidizing agent. Contact with other material may cause fire. Can be explosive when exposed to heat or flame. May cause severe eye, skin and respiratory irritation or burns. Highly reactive and incompatible; see MSDS for complete listing.

Emergency

Contact EH&S coordinator or your immediate supervisor.

Refer to Material Safety Data Sheet For Additional Information

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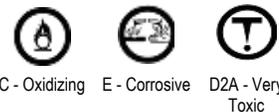
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