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**ACROS
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MSDS

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GRAND RAPIDS COMMUNITY
COLLEGE
151 FOUNTAIN NE

GRAND RAPIDS MI 49503

972

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SALES REPRESENTATIVE OR LOCAL BRANCH.**

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**** MATERIAL SAFETY DATA SHEET ****

Hydrogen Peroxide 30-50%
11189

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Hydrogen Peroxide 30-50%
Catalog Numbers: S74876, S74876-1, 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
Fisher Scientific
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	231-765-0
7732-18-5	Water	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. May cause severe allergic reactions with possible anaphylaxis.
Target Organs: Blood, central nervous system.

Potential Health Effects

Eyes:
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 blisters 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 the trachea and bronchitis. Causes chemical pneumonitis and 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 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 clothes. Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cups of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Wash mouth out with water.

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, giving 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. Containers which have been exposed to fire should be cooled with water. Vapors may be heavier than air. The cap should be removed and the container placed 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 quantities of firefighters immediately. Cool containers with flooding quantities of water. If possible, withdraw containers from the 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:

**** 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. Remove non-combustible material such as earth, sand, or vermiculite. Do not use combustible material such as saw dust. Flammable liquids will keep water. Provide ventilation. Do not get water or spilled material. 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 water. Store protected from light. Discard contaminated absorbent. 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 acids. Peroxide inhibitors should be used. 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; 1.4 mg/m ³ TWA	1 ppm TWA; 1.4 mg/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 eye/face shields 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 Z98.2 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: colorless
Odor: clean, odorless
pH: 3.3 (30% solution)
Vapor Pressure: 23 mm Hg @ 30°C
Evaporation Rate: 1.10
Viscosity: >1.0 (Butyl acetate=1)
Boiling Point: 108 deg C @ 760 mmHg
Freezing/Melting Point: -33 deg C
Decomposition Temperature: Not available.
Specific Gravity/Density: Miscible in water.
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, aniline, tetrahydrofuran (THF)), carboxylic acids, alcohols, triethylamine, sodium fluoride, sodium hydroxide, phosphoric acid, (acetone, ethanol, glycerol), acetic acid, acetic anhydride, 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, molybdenum, 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

Carcinogenicity:

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

Water -
IARC: Group 3 carcinogen

Epidemiology:

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
No information available.
No information available.
No information available.
No information available.
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; Unspecified Fish: Fathead Minnow: LC50 = 16.4 mg/L; 96 Hr; Fresh water Fish: Fathead Minnow: NOEC = 5 mg/L; 96 Hr; Fresh water Fish: Channel catfish: LC50 = 37.4 mg/L; 96 Hr; Fresh water Fish: 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

Canadian TDG

Packing Group: II
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.
Chemicals that are listed on the TSCA inventory are under a Chemical Test Rule.
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
SARA Codes 2-64-1: 1,000 lb TPQ (concentration > 52%)
CAS # 7722-84-1: acute, flammable.

Clean Air Act:

No chemicals are reportable under Section 313.
This material does not contain any Class 1 Ozone depleters.

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Clean Water Act: does not contain any Class 2 Ozone depleters.
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
Labeling in Accordance with EC Directives
Signal Words: 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 36/35 Wear suitable protective clothing and...
S 53 After 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# 7732-18-5: 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
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-THE PHILIPINES: 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)

*** 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 quality, express or implied, as to the information. We assume no liability for any damage or loss 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, however arising, even if the company has been advised of the possibility of such damages.

