



Material Safety Data Sheet  
Hydrogen Peroxide 20-40%

MSDS# 11189

Section 1 - Chemical Product and Company Identification

MSDS Name: Hydrogen Peroxide 20-40%  
Catalog Numbers: H323-500, H325-100, H325-30GAL, H325-4, H325-500, H325-500LC, H327-200, H327-500, NC9820303, P170-500  
Synonyms: Carbamide Peroxide; Hydrogen Dioxide; Peroxide; Hydroperoxide; Urea Peroxide; Hydrogen Peroxide 100 Volumes.

Company Identification: Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
For information in the US, call: 201-796-7100  
Emergency Number US: 201-796-7100  
CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

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Risk Phrases:

CAS#: 7722-84-1  
Chemical Name: Hydrogen peroxide  
%: 20-40  
EINECS#: 231-765-0  
Hazard Symbols: O C  
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Risk Phrases:

CAS#: 7732-18-5  
Chemical Name: Water  
%: 60-80  
EINECS#: 231-791-2  
Hazard Symbols:  
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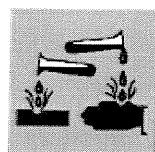
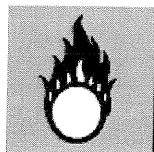
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Risk Phrases:

CAS#: 12058-66-1  
Chemical Name: Disodium stannate  
%: <0.01%  
EINECS#: 235-030-5  
Hazard Symbols:  
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Text for R-phrases: see Section 16

Hazard Symbols:

O C



## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

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 other material may cause 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 100 vol %  
Limits: Upper:

NFPA Rating: ; instability: 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 protected from light. Keep away from alkalis, oxidizable materials, finely divided metals, alcohols, and permanganates. Store only in light-resistant containers fitted with a safety vent.

### Section 8 - Exposure Controls, Personal Protection

| Chemical Name     | ACGIH       | NIOSH                                   | OSHA - Final PELs        |
|-------------------|-------------|---|--------------------------|
| Hydrogen peroxide | 1 ppm       | 1 ppm TWA; 1.4 mg/m3 TWA<br>75 ppm IDLH | 1 ppm TWA; 1.4 mg/m3 TWA |
| Water             | none listed | none listed                             | none listed              |
| Disodium stannate | none listed | none listed                             | none listed              |

OSHA Vacated PELs: Hydrogen peroxide: 1 ppm TWA; 1.4 mg/m3 TWA Water: None listed Disodium stannate: None listed

#### 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

##### 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 gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

### 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 ( 226.40°F)  
Freezing/Melting Point: -33 deg C (-27.40°F)  
Decomposition Temperature: Not available  
Solubility in water: Miscible in water.  
Specific Gravity/Density: 1.1-1.2 (30-50%)  
Molecular Formula: H2O2  
Molecular Weight: 34.01

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: Strong oxidizing agents, strong reducing agents, acetic acid, acetic anhydride, alcohols, brass, copper, copper alloys, finely powdered metals, galvanized iron, hydrazine, iron, magnesium, nitric acid, sodium carbonate, potassium permanganate, cyanides (e.g. potassium cyanide, sodium cyanide), ethers (e.g. dioxane, furfuran, tetrahydrofuran (THF)), urea, chlorosulfonic acid, alkalis, lead, nitrogen compounds, triethylamine, silver, nickel, palladium, organic matter, charcoal, sodium borate, aniline, platinum, formic acid, cyclopentadiene, activated carbon, tert-butyl alcohol, hydrogen selenide, manganese dioxide, mercurous chloride, rust, ketones, carboxylic acids, glycerine, sodium fluoride, sodium pyrophosphate, soluble fuels (acetone, ethanol, glycerol), wood, wood, asbestos, hexavalent chromium compounds, 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  
CAS# 12058-66-1: JN6345000

RTECS:  
**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;

LD50/LC50: Skin, rat: LD50 = 3 gm/kg;  
Skin, rat: LD50 = 4060 mg/kg;

RTECS:  
**CAS# 7732-18-5:** Oral, rat: LD50 = >90 mL/kg;

RTECS:  
**CAS# 12058-66-1:** Oral, mouse: LD50 = 2132 mg/kg;  
Oral, rat: LD50 = 3457 mg/kg;

Other: Oral, rat: LD50 = 1232 mg/kg (35% H2O2); Oral, rat: LD50 = 841 mg/kg (60 %  
Hydrogen peroxide - ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Carcinogenicity: IARC: Group 3 (not classifiable)  
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Disodium stannate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Fish: Carp: LC50 = 42 mg/L; 48 Hr; Unspecified  
Fish: Fathead Minnow: LC50 = 16.4 mg/L; 96 Hr; Fresh water  
Ecotoxicity: Fish: Fathead Minnow: NOEC = 5 mg/L; 96 Hr; Fresh water  
Water flea Daphnia: EC50 = 2.4 mg/L; 48 Hr; Fresh water  
Fish: Channel catfish: LC50 = 37.4 mg/L; 96 Hr; Fresh water

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS

Hazard Class: 5.1

UN Number: UN2014

Packing Group: II

Canada TDG

Shipping Name: HYDROGEN PEROXIDE AQUEOUS SOLN

Hazard Class: 5.108

UN Number: UN2014

Packing Group: II

Section 15 - Regulatory Information

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: Not available

CAS# 12058-66-1: Not available

Canada

CAS# 7722-84-1 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

CAS# 12058-66-1 is listed on Canada's DSL List

Canadian WHMIS Classifications: C, E, F

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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.

US Federal

TSCA

CAS# 7722-84-1 is listed on the TSCA Inventory.

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 12058-66-1 is listed on the TSCA Inventory.

**REVIEWED**

DATE: May 16/2012



Section 16 - Other Information

MSDS Creation Date: 4/21/1999

Revision #11 Date 7/20/2009

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 event 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.

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