Material Safety Data Sheet

.Hydrogen Peroxide Solution

Content:50%

ACC# 11189

Section 1 - Chemical Product and Company Identification

Item name : Hydrogen Peroxide Solution

Content:50%

Synonyms: Carbamide Peroxide; Hydrogen Dioxide; Peroxide; Hydroperoxide;

Urea Peroxide; Hydrogen Peroxide 100 Volumes.

The suggestion and the restriction of the use : Used as an oxidizing agent, bleaching agent, disinfectant, chlorine removal agent , Used in peroxide, foam and other porous materials and so on .

Section 2 - Composition, Information on Ingredients

CAS# NO	Chemical Name	Percent	EINECS/ELINCS
7722-84-1	Hydrogen peroxide solution	50%	231-765-0
7732-18-5	Water	50%	231-791-2

Hazard Symbols: O C
Risk Phrases: 34 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless. **Danger!** Strong oxidizer. Contact with other material may cause a fire. Eye contact may result in permanent eye damage. May cause central nervous system effects. Causes eye and skin irritation and possible burns. Corrosive. May cause severe respiratory tract irritation with possible burns.

May cause severe digestive tract irritation with possible burns. Mutagen. Light sensitive. May be harmful if swallowed. May cause blood abnormalities.
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.

GHS Classification:5.1+8

Classification of the substance or mixture:

Oxidizing liquids:1
Acute toxicity（ take orally）：4
Acute toxicity（inhalation）：4
Skin corrosion： 1B
Severe ocular injury ：1
Genotoxicity：2

GHS Pictograms: The Label elements in The globally harmonized system including the recautionary statements

Signal word: danger

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 soap and 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 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.

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 saw dust. 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 form alkalies, oxidizable materials, finely divided metals, alcohols, and permanganates. Store below 35°C. Store only in light-resistent 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 solution	1 ppm TWA	1 ppm TWA; 1.4 mg/m3 TWA 75 ppm IDLH	1 ppm TWA; 1.4 mg/m3 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

Appearance: clear, colorless

Odor: slight acid odor

pH: 3.3 (50% solution)

Vapor Pressure: 23 mm Hg @ 30C

Vapor Density: 1.10-1.22

Evaporation Rate:>1.0 (Butyl acetate=1)

Viscosity: 1.25 cP

Boiling Point: 108 deg C @ 760 mmHg

Freezing/Melting Point:-33 deg C

Autoignition Temperature: Noncombustible

Flash Point: Noncombustible

Decomposition Temperature: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Reactivity: 1

Explosion Limits, Lower:40 vol %

Upper: 100 vol %

Solubility: Miscible in water.

Specific Gravity/Density:1.1-1.22 (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: 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, alkalies, 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; MX0890000; MX0899000; MX0899500; MX0900000
CAS# 7732-18-5: ZC0110000
LD50/LC50:
CAS# 7722-84-1:
Inhalation, rat: LC50 = 2 gm/m3/4H;
Oral, mouse: LD50 = 2 gm/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;
Skin, rat: LD50 = 3 gm/kg;
Skin, rat: LD50 = 4060 mg/kg;<BR.

CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;<BR.

Carcinogenicity:
CAS# 7722-84-1:
ACGIH: A3 - Animal Carcinogen
IARC: Group 3 carcinogen CAS# 7732-18-5: 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; Unspecified Fathead Minnow: LC50 = 16.4 mg/L; 96 Hr; Fresh water Fathead Minnow: NOEC = 5 mg/L; 96 Hr; Fresh water flea Daphnia: EC50 = 2.4 mg/L; 48 Hr; Fresh water Channel catfish: LC50 = 37.4 mg/L; 96 Hr; Fresh water No data available.
Environmental: Rain washout is expected due to condensation of hydrogen peroxide on contact with water droplets. In the atmosphere, indirect photooxidation is perdicted with a half-life of 10 to 20 hours. Non-significant evaporation and adsorption from water surfaces and soil/sediments is expected. Rapid and cosiderable aerobic biodegradation was determined with a half-life < 1 minute (biological treatment sludge) and 0.3 to 2 days (fresh water). Hydrogen peroxide is non-bioaccumulable.
Physical: No information available.
Other: No information available.

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	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	HYDROGEN PEROXIDE SOLUTION				HYDROGEN PEROXIDE SOLUTION
Hazard Class:	5.1				5.1(8)
UN Number:	UN2014				UN2014
Packing Group:	II				II

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

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

CAS# 7722-84-1: concentration > 52%: TPQ = 1000 pounds; RQ = 1000 poun ds

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 depletors. This material does not contain any Class 2 Ozone depletors.

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:

CAS# 7722-84-1 is considered highly hazardous by OSHA.

STATE

CAS# 7722-84-1 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

CAS# 7732-18-5 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 28 After contact with skin, wash immediately with...

S 3 Keep in a cool place.

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.

Canada

CAS# 7722-84-1 is listed on Canada's DSL List. CAS# 7722-84-1 is listed on Canada's DSL List. CAS# 7732-18-5 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 m g/m3) OEL-GERMANY:TWA 1 ppm (1.4 mg/m3) OEL-THE NETHERLANDS:TWA 1 pp m (1.4 mg/m3) OEL-THE PHILIPPINES:TWA 1 ppm (1.4 mg/m3) OEL-SWITZERL AND: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 m g/m3)

Section 16 - Additional Information

MSDS Creation Date: 04/26/2022

Revision #4 Date: 04/26/2022

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 Fisher 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 Fisher has been advised of the possibility of such damages.