

Material Safety Data Sheet

(16790, 16792 and 26212-02)

Section 1: Chemical Product and Company Identification

Product Name: Hydrogen Peroxide 30%

Catalog Number: 16790, 16792 and 26212-02

CAS#: 7722-84-1

Contact Information:

Electron Microscopy Sciences

1560 Industry Road

Hatfield, PA 19440

1-215-412-8400 (phone)

1-800-523-5874 (toll-free)

1-215-412-8450 (fax)

Order Online: emsdiasum.com

CHEMTREC (24-Hour Emergency

Telephone), call: 1-800-424-9300

Section 2: Composition and Information on Ingredients

Name	CAS#	Exposure Limits			% by Weight
		TWA (mg/m3)	STEL (mg/m3)	CEIL (mg/m3)	
Water	7732-18-5				70
Hydrogen Peroxide	7722-84-1	1	2		30

Toxicological Data on Ingredients:

Hydrogen Peroxide

ORAL (LD50):

Acute: 2000 mg/kg [Mouse].

DERMAL (LD50):

Acute: 4000 mg/kg [Rat]. 2000 mg/kg [pig]

VAPOR (LC50):

Acute: 2000 mg/m3 4 hours [Rat].

Section 3: Hazards Identification

Potential Health Effects: Very hazardous in case of skin contact (irritant), of eye contact (irritant). Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of ingestion. Slightly hazardous in case of inhalation (lung sensitizer). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, redness, or, occasionally, blistering.

Potential Chronic Health Effects: **CARCINOGENIC EFFECTS:** Not available. **MUTAGENIC EFFECTS:** Not available. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: combustible materials

Explosion Hazards in Presence of Various Substances: Slightly explosive in presence of open flames and sparks, of heat, or organic materials, of metals, of acids.

Fire Fighting Media and Instructions: **Fire: Small fires:** Use water. Do not use dry chemicals or foams. CO₂, or Halon may provide limited control. **Large fires:** Flood fire area with water from a distance. Move containers from fire area if you can do it without risk. Do not move cargo or vehicle if cargo has been exposed to heat. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. **ALWAYS** stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Hydrogen peroxide, aqueous solution, with not less than 8% but less than 20% Hydrogen peroxide; Hydrogen peroxide, aqueous solution, with not less than 20% but not more than 60% Hydrogen peroxide (stabilized as necessary)/[QC Reviewed] [U.S. Department of Transportation, 2000 Emergency Response Guidebook. RSPA P 5800.8 Edition. Washington, D.C: U.S. Government Printing Office, 2000, p. G-140]

Special Remarks on Fire Hazards: Most cellulose (wood, cotton) materials contain enough catalyst to cause spontaneous ignition with 90% Hydrogen Peroxide. Hydrogen Peroxide is a strong oxidizer. It is not flammable itself, but it can cause spontaneous combustion of flammable materials and continued support of the combustion because it liberates oxygen as it decomposes. Hydrogen peroxide mixed with magnesium and a trace of magnesium dioxide will ignite immediately.

Special Remarks on Explosion Hazards: Soluble fuels (acetone, ethanol, glycerol) will detonate on a mixture with peroxide over 30% concentration, the violence increasing with concentration. Explosive with acetic acid, acetic anhydride, acetone, alcohols, carboxylic acids, nitrogen containing bases, As₂S₃, Cl₂ + KOH, FeS, FeSO₄ + 2 methylpyridine + H₂SO₄, nitric acid, potassium permanganate, P₂O₅, H₂Se, Alcohols + H₂SO₄, Alcohols + tin chloride, Antimony trisulfide, chlorosulfonic acid, Aromatic hydrocarbons + trifluoroacetic acid, Azelic acid + sulfuric acid (above 45°C), Benzenesulfonic anhydride, tert-butanol + sulfuric acid. Hydrazone, Sulfuric Acid, Sodium Iodate, Tetrahydrothiophene, Thiodiglycol, Mercurous oxide, mercuric oxide, Lead dioxide, Lead oxide, Manganese dioxide, Lead sulfide, Gallium + HCl, Ketenes + nitric acid, Iron (ii) sulfate +2-methylpyridine + sulfuric acid, iron (ii) sulfate + nitric acid + sodium carboxymethylcellulose (when evaporated), Vinyl acetate, trioxane, water + oxygenated compounds (e.g: acetaldehyde, acetic acid, acetone, ethanol, formaldehyde, formic acid, methanol, 2-propanol, propionaldehyde), organic compounds.

Beware: Many mixtures of hydrogen peroxide and organic materials may not explode upon contact. However, the resulting combination is detonatable either upon catching fire or by impact.

EXPLOSION HAZARD: SEVERE, WHEN HIGHLY CONCENTRATED OR PURE H₂O₂ IS EXPOSED TO HEAT, MECHANICAL IMPACT, OR CAUSED TO DECOMPOSE CATALYTICALLY BY METALS AND THEIR SALTS, DUSTS & ALKALIES. ANOTHER SOURCE OF HYDROGEN PEROXIDE EXPLOSIONS IS FROM SEALING THE MATERIAL IN STRONG CONTAINERS. UNDER SUCH CONDITIONS EVEN GRADUAL DECOMPOSITION OF HYDROGEN PEROXIDE TO WATER + ½ OXYGEN CAN CAUSE LARGE PRESSURES TO BUILD UP IN THE CONTAINERS WHICH MAY BURST EXPLOSIVELY.

Fire or explosion: May explode from friction, heat or contamination. These substances will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Some will react explosively with hydrocarbons (fuels). Containers may explode when heated. Runoff may create fire or explosion hazard. Hydrogen peroxide, aqueous solution, stabilized, with more than 60% Hydrogen peroxide; Hydrogen peroxide/stabilized; [QC Reviewed] [U.S. Department of Transportation. 2000 Emergency Response Guidebook. RSPA P 5800.8 Edition. Washington, D.C., U.S. Government Printing Office, 2000, p. G-143]/

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Section 6: Accidental Release Measures

Small Spill: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill: Corrosive liquid. Oxidizing material. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing . . .). Keep substance damp using water spray. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level or above TLV. Check TLV on the MDSS and with local authorities.

Section 7 : Handling and Storage

Precautions: Keep locked up. Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis.

Storage: Keep container tightly closed. Keep container in cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Do not store above 8°C (46.4°F). Refrigerate. Sensitive to light. Store in light-resistant containers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.

Personal Protection: Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots. **Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Hydrogen Peroxide

TWA: 1 (ppm) from ACGIH (TLV) [United States]

TWA: 1 (ppm) from OSHA (PEL) [United States]

TWA: 1 STEL: 2 [Canada]

TWA: 1.4 (mg/m³) from NIOSH

TWA: 1.4 (mg/me) from OSHA (PEL) [United States]

TWA: 1 (ppm) [United Kingdom (UK)]

TWA: 1.4 (mg/m³) [United Kingdom (UK)]

Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid

Taste: Slightly acid. Bitter

Molecular Weight: Not applicable.

Boiling Point: 108°C (226.4°F)

Critical Temperature: Not available

Vapor Pressure: 3.1 kPa (@20°C)

Volatility: Not available

Water/Oil Dist. Coeff.: Not available

Dispersion Properties: See solubility in water, diethyl ether.

Odor: Odorless

Color: Clear, colorless

pH (1% soln/water): Not available

Melting Point: -33°C (-27.4°F)

Specific Gravity: 1.1 (Water=1)

Vapor Density: 1.1 (Air=1)

Odor Threshold: Not available

Ionicity (in water): Not available

Solubility: Easily soluble in cold water. Soluble in diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable. It contains a stabilizer

Instability Temperature: Not available

Conditions of Stability: Excess heat, incompatible materials

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with reducing agents, combustible materials, organic materials, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Remarks: Light sensitive. Incompatible with reducing materials, ethers (dioxane, furfuran, tetrahydrofuran), oxidizing materials. Metals (e.g. potassium, sodium lithium, iron, copper, brass, bronze, chromium, zinc, lead, silver, nickel), metal oxides (e.g., cobalt oxide, iron oxide, lead oxide, lead hydroxide, manganese oxide), metal salts (e.g., calcium permanganate, salts of iron), manganese, asbestos, vanadium, platinum, tungsten, molybdenum, triethylamine, palladium, sodium pyrophosphate, carboxylic acids, cyclopentadiene, formic acid, rust, ketones, sodium carbonate, alcohols, sodium borate, aniline, mercurous chloride, rust, nitric acid, sodium pyrophosphate, hexavalent chromium compounds, tetrahydrofuran, sodium fluoride organic matter, potassium permanganate, urea, chlorosulfonic acid, manganese dioxide, hydrogen selenide, charcoal, coal, sodium borate, alkalis, cyclopentadiene, glycerine, cyanides (potassium, cyanide, sodium cyanide) nitrogen compounds. Caused to decompose catalytically by metals (in order of decreasing effectiveness): Osmium Palladium, Platinum, Iridium, Gold, Silver, Manganese, Cobalt, Copper, Lead. Concentrated hydrogen peroxide may decompose violently or explosively in contact with iron, copper, chromium, and most other metals and their salts and dust.

Special Remarks on Corrosivity: Not available

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals: Acute oral toxicity (LD50): 6667 mg/kg (Mouse) (Calculated value for the mixture).

Acute dermal toxicity (LD50): 6667 mg/kg (pig) (Calculated value for the mixture).

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH [Hydrogen Peroxide]. Classified 3 (Not classifiable for human.) by IARC [Hydrogen Peroxide].

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Hydrogen Peroxide]. Mutagenic for bacteria and/or yeast. [Hydrogen Peroxide]. Contains material which may cause damage to the following organs: blood, upper respiratory tract, skin, eyes, central nervous system (CNS).

Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant). Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of ingestion, of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May cause cancer and may affect genetic material based on animal data. May be tumorigenic. (Hydrogen Peroxide)

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects:

Skin: Causes severe skin irritation and possible burns. Absorption into skin may affect behavior/central nervous system (tremor, ataxia, convulsions), respiration (dyspnea, pulmonary emboli), brain.

Eyes: Causes severe eye irritation, superficial clouding, corneal edema, and may cause burns.

Inhalation: Causes respiratory tract irritation with coughing, lacrimation. May cause chemical burns to the respiratory tract. May affect behavior/Central nervous system (insomnia, headache, ataxia, nervous tremors with numb extremities) and may cause ulceration of nasal tissue, and, chemical pneumonia, unconsciousness, and possible death. At high concentrations, respiratory effects may include acute

lung damage, and delayed pulmonary edema. May affect blood.

Ingestion: Causes gastrointestinal tract irritation with nausea, vomiting, hypermotility, and diarrhea. Causes gastrointestinal tract burns. May affect cardiovascular system and cause vascular collapse and damage. May affect blood (change in leukocyte count, pigmented or nucleated red blood cells). May cause difficulty in swallowing, stomach distension and possible cerebral swelling. May affect behavior/central nervous system (tetany, excitement).

Chronic Potential Health Effects: Prolonged or repeated skin contact may cause dermatitis. Repeated contact may also cause corneal damage. Prolonged or repeated ingestion may affect metabolism (weight loss). Prolonged or repeated inhalation may affect respiration, blood. (Hydrogen Peroxide).

Section 12: Ecological Information

Ecotoxicity: Not available

BOD5 and COD: Not available

Products of Biodegradation: Possibly hazardous short/long term degradation products are to be expected.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state, and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 5.1: Oxidizing material.

Identification: Hydrogen peroxide, aqueous solution UNNA: 2014 PG: II

Special Provisions for Transport: Not available



DOT (Pictograms):

OXIDIZER

DANGEROUSLY REACTIVE MATERIAL

Section 15: Other Regulatory Information

Federal and State Regulations:

New York acutely hazardous substances: Hydrogen Peroxide

Rhode Island RTK hazardous substances: Hydrogen Peroxide

Pennsylvania RTK: Hydrogen Peroxide

Florida: Hydrogen Peroxide

Minnesota: Hydrogen Peroxide

Massachusetts RTK: Hydrogen Peroxide

New Jersey: Hydrogen Peroxide

TSCA 8(b) inventory: Hydrogen Peroxide

SARA 302/304/311/312 extremely hazardous substances: Hydrogen Peroxide

CERLCA: Hazardous substance: Hydrogen Peroxide: 1 lbs. (0.4536 kg);

California Proposition 65 Warnings:

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications: WHMIS (Canada): CLASS C: Oxidizing material

CLASS E: Corrosive liquid.

CLASS F: Dangerously reactive material.

DSCL (EEC)

R8 (Contact with combustible material may cause fire.

R34 – Causes burns

S3 – Keep in a cool place.

S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 – After contact with skin, wash immediately with Plenty of water.

S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.

HMIS (U.S.A)
Health Hazard – 3
Fire Hazard – 0
Reactivity – 1
Personal Protection –

National Fire Protection Association (U.S.A.)
Health - 2
Flammability - 0
Reactivity - 1
Specific Hazard – oxy

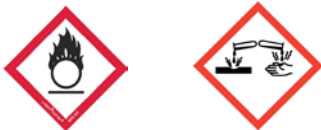
WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)



ADR (Europe) (Pictograms)



Protective Equipment

Gloves Full Suit

Vapor Respirator. Be sure to use an approved/certified respirator or equivalent.
Wear appropriate respirator when ventilation is inadequate.

Face Shield

Section 16: Other Information:

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The information above is believed to be accurate and represents the best information currently available to us. However, we make no 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 Electron Microscopy Sciences 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 Electron Microscopy Sciences has been advised of the possibility of such damages.