

Material Safety Data Sheet

Hydrogen Peroxide 30%



1. Product and company identification

Product name : Hydrogen Peroxide 30%
Product code : HX0635
Supplier : EMD Millipore Corp.
290 Concord Rd.
Billerica, MA 01821
1-978-715-1335 Technical Service
Monday - Friday: 8:00 - 6:00 PM EST
Synonym : None.
Material uses : Other non-specified industry: Analytical reagent.
Validation date : 12/3/2013.
In case of emergency : 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

2. Hazards identification

Emergency overview : DANGER!
OXIDIZER.
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
CAUSES EYE AND SKIN BURNS.
HARMFUL IF SWALLOWED.
CAUSES SEVERE RESPIRATORY TRACT IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.
MAY BE HARMFUL IF INHALED.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING
ORGANS: BLOOD, LUNGS, MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN,
CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA, NOSE, SINUSES.

Keep away from combustible material. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Physical state : Liquid.
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Routes of entry : Inhalation. Ingestion.
Potential acute health effects
Inhalation : Severely irritating to the respiratory system. May be harmful if inhaled.
Ingestion : Toxic if swallowed. May cause burns to mouth, throat and stomach.
Skin : Corrosive to the skin. Causes burns. May be harmful in contact with skin.
Eyes : Corrosive to eyes. Causes burns.
Potential chronic health effects
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.
Target organs : Contains material which may cause damage to the following organs: blood, lungs, mucous membranes, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses.

Continued on next page

2. Hazards identification

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

| <u>Name</u> | <u>CAS number</u> | <u>% by weight</u> |
|-------------------|-------------------|--------------------|
| Water | 7732-18-5 | 70 |
| Hydrogen peroxide | 7722-84-1 | 30 |

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. 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. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire-fighting measures

- Flammability of the product** : Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : No specific data.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Contact with combustible material may cause fire.
- Special remarks on explosion hazards** : Contact with strong oxidizers may create a fire and explosion hazard.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6 . Accidental release measures

Methods for cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

7 . Handling and storage

- Handling** : Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from combustible material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container, protected from direct sunlight. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

8 . Exposure controls/personal protection

| Ingredient | Exposure limits |
|-------------------|--|
| Hydrogen peroxide | <p>ACGIH TLV (United States, 6/2013). TWA: 1 ppm 8 hour(s). TWA: 1.4 mg/m³ 8 hour(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 1 ppm 8 hour(s). TWA: 1.4 mg/m³ 8 hour(s).</p> <p>NIOSH REL (United States, 4/2013). TWA: 1 ppm 10 hour(s). TWA: 1.4 mg/m³ 10 hour(s).</p> <p>OSHA PEL (United States, 2/2013). TWA: 1 ppm 8 hour(s). TWA: 1.4 mg/m³ 8 hour(s).</p> |

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

8 . Exposure controls/personal protection

- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: safety glasses with side-shields , splash goggles
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Recommended: safety apron
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : [Product does not sustain combustion.]
- Color** : Clear. Colorless.
- Odor** : Sharp odor [Slight]
- pH** : 2-4 Acidic.
- Boiling/condensation point** : 106°C (222.8°F)
- Melting/freezing point** : -26°C (-14.8°F)
- Relative density** : 1.1
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Odor threshold** : Not available.
- Evaporation rate** : 0.36 (Water) compared with(n-Butyl Acetate =1)
- VOC** : 0 % (w/w)
- Solubility** : Easily soluble in the following materials: water

10 . Stability and reactivity

- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing or intensifying fire
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Drying on clothing or other combustible materials may cause fire.
- Materials to avoid** : Highly reactive or incompatible with the following materials: organic materials and metals
.
Avoid contact with combustible materials. Incompatibility with various materials.
Phosphorus compounds , Carboxylic acid.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

| Product/ingredient name | Test Route | Species | Result |
|-------------------------|-------------|---------|------------|
| Hydrogen peroxide | LD50 Dermal | Rat | 4060 mg/kg |
| | LD50 Dermal | Mouse | 1072 mg/kg |
| | LD50 Oral | Rat | 1518 mg/kg |
| | LD50 Oral | Rat | 910 mg/kg |
| | LD50 Oral | Rat | 376 mg/kg |
| | LDLo Dermal | Rabbit | 500 mg/kg |
| | LDLo Oral | Child | 8500 mg/kg |
| | LDLo Oral | Man | 1429 mg/kg |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Observation |
|-------------------------|------------------------|---------|-------|-------------|
| Hydrogen peroxide | Eyes - Severe irritant | Rabbit | - | - |

Carcinogenicity

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| Hydrogen peroxide | A3 | 3 | - | - | - | - |

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

12 . Ecological information

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|----------------------|---|----------|
| Hydrogen peroxide | Acute EC50 24 mg/L | Daphnia | 48 hours |
| | Acute EC50 5.74 mg/L | Algae - Green algae - Pseudokirchneriella subcapitata | 3 days |
| | Acute EC50 5.74 mg/L | Algae - Green algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 5.53 mg/L | Algae - Green algae - Parachlorella kessleri | 3 days |
| | Acute EC50 5.38 mg/L | Algae - Green algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 1.2 mg/L | Algae - Green algae - Dunaliella tertiolecta - Exponential growth phase | 72 hours |
| | Acute EC50 24 ppm | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| | Acute EC50 2320 ug/L | Daphnia - Water flea - Daphnia magna - Neonate - <24 hours | 48 hours |
| | Acute LC50 30 mg/L | Fish - g2i:m6vg:7pt - Siluriformes - Fingerling - 10 to 15 cm | 96 hours |
| | Acute LC50 26.7 mg/L | Fish | 96 hours |
| | Acute LC50 22 mg/L | Fish | 96 hours |
| | Acute LC50 150 ppm | Fish - Bluegill - Lepomis macrochirus - 0.35 g | 96 hours |
| | Acute LC50 93 ppm | Fish - Rainbow trout, donaldson trout - | 96 hours |
| | Fresh water | | |

12 . Ecological information

Oncorhynchus mykiss - 0.89
g



Environmental effects : No known significant effects or critical hazards.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

14 . Transport information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|------------------------|-----------|-------------------------------------|---------|-----|--|------------------------|
| DOT Classification | UN2014 | HYDROGEN PEROXIDE, AQUEOUS SOLUTION | 5.1 (8) | II |   | - |

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Oxidizing material
Toxic material
Corrosive material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR**: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.
SARA 302/304/311/312 extremely hazardous substances: Hydrogen peroxide
SARA 302/304 emergency planning and notification: Hydrogen peroxide
SARA 302/304/311/312 hazardous chemicals: Hydrogen peroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Hydrogen peroxide: Fire hazard, reactive, Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

Connecticut Carcinogen Reporting : None of the components are listed.

Connecticut Hazardous Material Survey : None of the components are listed.

15 . Regulatory information

- Florida substances** : None of the components are listed.
- Illinois Chemical Safety Act** : None of the components are listed.
- Illinois Toxic Substances Disclosure to Employee Act** : None of the components are listed.
- Louisiana Spill** : None of the components are listed.
- Louisiana Reporting** : None of the components are listed.
- Massachusetts Spill** : None of the components are listed.
- Massachusetts Substances** : The following components are listed: Hydrogen peroxide
- Minnesota Hazardous Substances** : None of the components are listed.
- Michigan Critical Material** : None of the components are listed.
- New Jersey Toxic Catastrophe Prevention Act** : None of the components are listed.
- New Jersey Spill** : None of the components are listed.
- New Jersey Hazardous Substances** : The following components are listed: Hydrogen Peroxide 30%
- New York Toxic Chemical Release Reporting** : None of the components are listed.
- New York Acutely Hazardous Substances** : The following components are listed: Hydrogen peroxide
- Pennsylvania RTK Hazardous Substances** : The following components are listed: Hydrogen peroxide
- Rhode Island Hazardous Substances** : None of the components are listed.

Canada

- WHMIS (Canada)** : Class C: Oxidizing material.
Class E: Corrosive material
- Canadian lists** : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.
- CEPA DSL / CEPA NDSL** : All components are listed or exempted.

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

EU regulations

Hazard symbol or symbols :



- Risk phrases** : R22- Harmful if swallowed.
R41- Risk of serious damage to eyes.
- Safety phrases** : S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39- Wear eye/face protection.

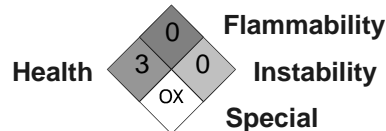
International regulations

15 . Regulatory information

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): Not determined.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): All components are listed or exempted.

16 . Other information

National Fire Protection Association (U.S.A.) :



Notice to reader

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