

## SAFETY DATA SHEET

Version 8.3  
Revision Date 09/21/2022  
Print Date 05/06/2023**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Hydrogen Peroxide

Product Number : 386790-M

Catalogue No. : 386790

Brand : Millipore

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Reagent for development and research

**1.3 Details of the supplier of the safety data sheet**Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

**1.4 Emergency telephone**Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Serious eye damage (Category 1), H318

Short-term (acute) aquatic hazard (Category 2), H401

Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal Word : Danger

Hazard statement(s)

H318

Causes serious eye damage.

H401

Toxic to aquatic life.

H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Component	Classification	Concentration
<b>Hydrogen Peroxide</b>		
CAS-No. 7722-84-1 EC-No. 231-765-0 Index-No. 008-003-00-9	Ox. Liq. 1; Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; Aquatic Acute 2; Aquatic Chronic 3; H271, H302, H332, H314, H318, H335, H401, H412 Concentration limits: >= 70 %: Ox. Liq. 1, H271; 50 - < 70 %: Ox. Liq. 2, H272; >= 70 %: Skin Corr. 1A, H314; 50 - < 70 %: Skin Corr. 1B, H314; 35 - < 50 %: Skin Irrit. 2, H315; 8 - < 50 %: Eye Dam. 1, H318; 5 - < 8 %: Eye Irrit. 2, H319; >= 35 %: STOT SE 3, H335; > 40 - < 50 %: Ox. Liq. 3, H272;	>= 30 - < 35 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.  
Remove contact lenses.

**If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Nature of decomposition products not known.  
Not combustible.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.  
For personal protection see section 8.

**6.2 Environmental precautions**

Do not empty into drains.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling****Advice on safe handling**

Observe label precautions.

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

No metal containers. Close containers in such a way to enable internal pressure to escape (e.g. excess pressure valve).

Tightly closed. Protected from light. Do not store near combustible materials.

Recommended storage temperature see product label.

**Storage class**

Storage class (TRGS 510): 5.1B: Oxidizing hazardous materials

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Hydrogen Peroxide	7722-84-1	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Confirmed animal carcinogen with unknown relevance to humans		

		TWA	1 ppm 1.4 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	1 ppm 1.4 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		PEL	1 ppm 1.4 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		TWA	1 ppm 1.4 mg/m <sup>3</sup>	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

Tightly fitting safety goggles

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Latex gloves

Minimum layer thickness: 0.6 mm

Break through time: 480 min

Material tested:Lapren® (KCL 706 / Aldrich Z677558, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

#### Body Protection

protective clothing

#### Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Control of environmental exposure

Do not empty into drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: liquid Color: colorless
b) Odor	slight
c) Odor Threshold	No data available
d) pH	2 - 4 at 20 °C (68 °F)
e) Melting point/freezing point	Melting point: -26 °C (-15 °F) at 1,013 hPa
f) Initial boiling point and boiling range	107 °C 225 °F at 1,013 hPa
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	ca.18 hPa at 20 °C (68 °F)
l) Vapor density	No data available
m) Density	1.11 g/cm <sup>3</sup> at 20 °C (68 °F)
Relative density	No data available
n) Water solubility	soluble
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	No data available
q) Decomposition temperature	> 100 °C (> 212 °F) -
r) Viscosity	No data available
s) Explosive properties	Not classified as explosive.
t) Oxidizing properties	Oxidizing potential

### 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Has a fire-promoting effect due to release of oxygen.

## 10.2 Chemical stability

heat-sensitive Sensitivity to light

## 10.3 Possibility of hazardous reactions

Risk of explosion with:

Acetaldehyde

Acetone

Activated charcoal

Alcohols

formic acid

Ammonia

combustible substances

vinyl acetate

Organic Substances

Powdered metals

Dust

hydrazine and derivatives

hydrides

Ether

Potassium

anilines

Metallic salts

acetic acid

Acetic anhydride

Formaldehyde

furfuryl alcohol

oils

sodium

Lithium

lithium aluminium hydride

organic solvents

Magnesium

metallic oxides

Methanol

Reducing agents

Oxides of phosphorus

butanol

with

Sulphuric acid

alkali hydroxides

with

Heavy metals

Exothermic reaction with:

alkali hydroxides

antimony sulfide

tin (II) chloride

Sulfides

3-BROMO-5-CHLORO-4-HYDROXYBENZALDEHYDE

nitric acid (conc.)

ethanol

glycerol

Potassium hydroxide

phosphorus

metallic oxides

Sodium hydroxide

Aldehydes  
nonmetals  
nonmetallic oxides  
strong alkalis  
Amines  
Acids  
Oxidizing agents  
alkali salts  
Alkali metals  
Alkaline earth metals  
iodides  
peroxi compounds  
Brass  
organic nitro compounds  
phenol  
with  
metal catalysts  
Risk of ignition or formation of inflammable gases or vapours with:  
potassium permanganate  
Wood/Sawdust  
vinyl acetate  
with  
Catalyst

#### **10.4 Conditions to avoid**

Heating.

#### **10.5 Incompatible materials**

Metals

#### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

#### **11.1 Information on toxicological effects**

##### **Mixture**

##### **Acute toxicity**

Acute toxicity estimate Oral - 2,312 mg/kg

(Calculation method)

Acute toxicity estimate Inhalation - 4 h - 37 mg/l - vapor(Calculation method)

Acute toxicity estimate Dermal - > 5,000 mg/kg

(Calculation method)

No data available

##### **Skin corrosion/irritation**

After long-term exposure to the chemical: Causes skin burns.

##### **Serious eye damage/eye irritation**

conjunctivitis

##### **Respiratory or skin sensitization**

No data available



**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Dizziness  
Unconsciousness  
Diarrhea  
Nausea  
Vomiting  
Headache  
Convulsions  
muscle twitching  
insomnia  
shock  
Irritation and corrosion  
conjunctivitis  
Risk of serious damage to eyes.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

**Components****Hydrogen Peroxide****Acute toxicity**

LD50 Oral - Rat - female - 693.7 mg/kg  
(OECD Test Guideline 401)

Acute toxicity estimate Inhalation - 4 h - 11.1 mg/l - vapor  
(Expert judgment)

LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg  
(US-EPA)

No data available

**Skin corrosion/irritation**

Causes severe burns. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

Method: OECD Test Guideline 474

Species: Mouse - male and female - Bone marrow

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation. - Respiratory Tract

**Specific target organ toxicity - repeated exposure****Aspiration hazard**

No data available

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**SECTION 12: Ecological information****12.1 Toxicity****Mixture**

No data available

**12.2 Persistence and degradability**

Biodegradability                      Remarks: No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Endocrine disrupting properties**

No data available

**12.7 Other adverse effects**

No interference with wastewater treatment plants are to be expected when used properly.

Discharge into the environment must be avoided.

No data available

**Components****Hydrogen Peroxide**

Toxicity to fish

semi-static test LC50 - Pimephales promelas (fathead minnow)

Millipore - 386790-M

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	- 16.4 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	semi-static test LC50 - Daphnia pulex (Water flea) - 2.4 mg/l - 48 h (US-EPA)
Toxicity to algae	static test ErC50 - Skeletonema costatum (marine diatom) - 1.38 mg/l - 72 h Remarks: (ECHA)
	static test NOEC - Skeletonema costatum (marine diatom) - 0.63 mg/l - 72 h Remarks: (ECHA)
Toxicity to bacteria	static test EC50 - activated sludge - 466 mg/l - 30 min (OECD Test Guideline 209)
	static test EC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209)

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

#### DOT (US)

UN number: 2014 Class: 5.1 (8) Packing group: II  
 Proper shipping name: Hydrogen peroxide, aqueous solutions  
 Reportable Quantity (RQ):  
 Poison Inhalation Hazard: No

#### IMDG

UN number: 2014 Class: 5.1 (8) Packing group: II EMS-No: F-H, S-Q  
 Proper shipping name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION

#### IATA

UN number: 2014 Class: 5.1 (8) Packing group: II  
 Proper shipping name: Hydrogen peroxide, aqueous solution

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## SECTION 15: Regulatory information

### SARA 302 Components

Millipore - 386790-M

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**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

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**SECTION 16: Other information****Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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