



# MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/13/2013

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number 108600  
Product name Hydrogen peroxide 35% suitable for use as excipient EMPROVE® exp

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses Pharmaceutical production, Cosmetic raw material

### Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | SDS Phone Support: +1-978-715-1335 | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Oral, H302  
Skin irritation, Category 2, H315  
Serious eye damage, Category 1, H318  
Specific target organ systemic toxicity - single exposure, Category 3, H335  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



Signal Word  
Danger

#### Hazard Statements

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.

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---

## *Precautionary Statements*

P280 Wear eye protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

## **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Chemical nature

Aqueous solution

### **Hazardous ingredients**

*Chemical Name ( Concentration)*

CAS-No.

*hydrogen peroxide ( >= 30 % - < 50 % )*

7722-84-1

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

#### *Inhalation*

After inhalation: fresh air. Call in physician.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

#### *Eye contact*

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

#### *Ingestion*

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

Never give anything by mouth to an unconscious person.

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

Dizziness, Unconsciousness, Diarrhea, Nausea, Vomiting, Headache, Convulsions, muscle twitching, insomnia, shock, Irritation and corrosion, conjunctivitis

Risk of serious damage to eyes.

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

No information available.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

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---

### *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.

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

Not combustible.

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

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

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

#### *Further information*

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

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## **SECTION 6. Accidental release measures**

### **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.

Advice for emergency responders: Protective equipment see section 8.

### **Environmental precautions**

Do not empty into drains.

### **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 material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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## **SECTION 7. Handling and storage**

### **Precautions for safe handling**

Observe label precautions.

### **Conditions for safe storage, including any incompatibilities**

#### *Requirements for storage areas and containers*

Close containers in such a way to enable internal pressure to escape (e.g. excess pressure valve).

No metal containers.

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

Store at +2°C to +25°C (+36°F to +77°F).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

Basis	Value	Threshold limits	Remarks
<i>hydrogen peroxide 7722-84-1</i>			
ACGIH	Time Weighted Average (TWA):	1 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	1 ppm 1.4 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	1 ppm 1.4 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	1 ppm 1.4 mg/m <sup>3</sup>	

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### Eye/face protection

Tightly fitting safety goggles

### Hand protection

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.

### Other protective equipment:

protective clothing

### Respiratory protection

required when vapors/aerosols are generated.

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.

## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	slight

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---

Odor Threshold	No information available.
pH	ca. 2 - 4 at 68 °F ( 20 °C)
Melting point	ca. -24 °C
Boiling point/boiling range	ca. 230 °F ( 110 °C) at 1,013 hPa
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	ca. 20 hPa at 68 °F ( 20 °C)
Relative vapor density	No information available.
Relative density	1.13 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	at 68 °F ( 20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	> 212 °F ( > 100 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.

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## SECTION 10. Stability and reactivity

### Reactivity

See below

### Chemical stability

heat-sensitive

Sensitivity to light

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108600

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---

## *Stabilizer*

Disodium pyrophosphate

phosphoric acid

Ammonium nitrate

## **Possibility of hazardous reactions**

Risk of explosion with:

Risk of ignition or formation of inflammable gases or vapors with:

hydrazine and derivatives, hydrides, combustible substances, Ether, anhydrides, Oxidizing agents, Organic Substances, peroxy compounds, permanganates, organic solvent, organic nitro compounds, brass, Alkali metals, alkali salts, Alkaline earth metals, Metals, metallic oxides, metallic salts, nonmetals, nonmetallic oxides, Aldehydes, Alcohols, Amines, Ammonia, acids, strong alkalis, Acetaldehyde, Acetone, Activated charcoal, anilines, Lead, Powdered metals, acetic acid, Acetic anhydride, Potassium, iodides, potassium permanganate, Methanol, sodium, oils, phosphorus, Oxides of phosphorus, conc. sulfuric acid, Heavy metals

silver, in powder form

alkali hydroxides, with, Heavy metals

vinyl acetate, with, Catalyst

Exothermic reaction with:

alkali hydroxides, Metals, Nitric acid, zinc oxide, metallic salts

phenol, with, metal catalysts

## **Conditions to avoid**

Heating.

## **Incompatible materials**

Lead, bronze, Iron, Copper, brass, silver

## **Hazardous decomposition products**

no information available

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## **SECTION 11. Toxicological information**

### **Information on toxicological effects**

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Target Organs*

Eyes

Skin

Lungs

Gastro-intestinal system

head

Respiratory organs

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---

## *Acute oral toxicity*

absorption

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LD50 rat: 1,193 - 1,270 mg/kg (IUCLID)

## *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute toxicity estimate: 31.43 mg/l

Calculation method

## *Acute dermal toxicity*

LD50 rabbit: > 2,000 mg/kg

US-EPA

## *Skin irritation*

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

Mixture causes skin irritation.

## *Eye irritation*

conjunctivitis

Mixture causes serious eye damage.

## *Sensitization*

Sensitization test: guinea pig

Result: negative

(External MSDS)

## *Genotoxicity in vivo*

Mutagenicity (mammal cell test): micronucleus.

mouse

Result: negative

Method: OECD Test Guideline 474

## *Specific target organ systemic toxicity - single exposure*

Target Organs: Respiratory system

Mixture may cause respiratory irritation.

## *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

## *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **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.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential

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---

carcinogen by OSHA.

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.

ACGIH Confirmed animal carcinogen with unknown relevance to humans.

hydrogen peroxide 7722-84-1

## Further information

### Systemic effects:

Headache, Dizziness, Nausea, Vomiting, Diarrhea, insomnia, muscle twitching, Convulsions, Unconsciousness, shock  
Handle in accordance with good industrial hygiene and safety practice.

## Ingredients

### *hydrogen peroxide*

#### *Acute oral toxicity*

Acute toxicity estimate: 500.1 mg/kg  
Expert judgment

#### *Acute inhalation toxicity*

Acute toxicity estimate: 11.1 mg/l; vapor  
Expert judgment

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## SECTION 12. Ecological information

### Ecotoxicity

#### *Toxicity to algae*

IC50 *Chlorella vulgaris* (Fresh water algae): 2.5 mg/l; 72 h  
OECD Test Guideline 201

### Persistence and degradability

#### *Biodegradability*

Readily biodegradable.

### Bioaccumulative potential

No information available.

### Mobility in soil

No information available.

#### *Additional ecological information*

No interference with wastewater treatment plants are to be expected when used properly.  
Discharge into the environment must be avoided.

## Ingredients

### *hydrogen peroxide*

#### *Toxicity to fish*

LC50 *Pimephales promelas* (fathead minnow): 16.4 mg/l; 96 h (IUCLID)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 2.3 mg/l; 48 h (ECOTOX Database)



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---

NOEC Daphnia magna (Water flea): 0.63 mg/l; 21 d (External MSDS)

*Toxicity to algae*

IC50 Pseudokirchneriella subcapitata (green algae): 5.7 mg/l; 72 h (ECOTOX Database)

Growth rate NOEC Skeletonema costatum: 0.63 mg/l; 72 h (External MSDS)

*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

*Biodegradability*

Readily biodegradable.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

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## SECTION 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.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 2014
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Class	5.1 ( 8)
Packing group	II
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 2014
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Class	5.1 ( 8)
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes <b>Not permitted for transport</b>

### Sea transport (IMDG)

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**UN number** UN 2014  
**Proper shipping name** HYDROGEN PEROXIDE, AQUEOUS SOLUTION  
**Class** 5.1 ( 8)  
**Packing group** II  
**Environmentally hazardous** --  
**Special precautions for user** yes  
**EmS** F-H S-Q

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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Oxidizer

Harmful if swallowed.

Target organ effects

Corrosive to skin

Corrosive to eyes

Corrosive by inhalation.

Carcinogen

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Reactivity Hazard

Acute Health Hazard

Chronic Health Hazard

#### SARA 313

SARA 313: 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.

#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

##### *Ingredients*

hydrogen peroxide

7722-84-1

#### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

##### *Ingredients*

phosphoric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

##### *Ingredients*

phosphoric acid

#### DEA List I

Not listed

#### DEA List II

Not listed

## US State Regulations

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108600

Version 1.1

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## Massachusetts Right To Know

### *Ingredients*

hydrogen peroxide

## Pennsylvania Right To Know

### *Ingredients*

water

hydrogen peroxide

## New Jersey Right To Know

### *Ingredients*

water

hydrogen peroxide

## California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 08/13/2013

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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