



SAFETY DATA SHEET

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

Revision Date 08/17/2015

Version 1.2

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
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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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, Respiratory system, 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.

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H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Precautionary Statements

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

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

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P310 Immediately call a POISON CENTER or doctor/ physician.

P321 Specific treatment (see supplemental first aid instructions on this label).

P330 Rinse mouth.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature	Aqueous solution
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Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

hydrogen peroxide ($\geq 30\%$ - $< 50\%$)

7722-84-1

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

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

Eye contact

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

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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.

SECTION 5. Fire-fighting measures

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.

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.

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. Chemizorb®). 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).

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 ³	
OSHA_TRANS	PEL:	1 ppm 1.4 mg/m ³	
Z1A	Time Weighted Average (TWA):	1 ppm 1.4 mg/m ³	

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.

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Other protective equipment:

protective clothing

Respiratory protection

required when vapors/aerosols are generated.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	slight
Odor Threshold	No information available.
pH	ca. 2 - 4 at 20 °C (20 °C)
Melting point	ca. -24 °C
Boiling point/boiling range	ca. 110 °C (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 20 °C (20 °C)
Relative vapor density	No information available.
Density	1.13 g/cm ³ at 20 °C (20 °C)
Relative density	No information available.
Water solubility	at 20 °C (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.

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Decomposition temperature	> 100 °C (> 100 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	Oxidizing potential

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

heat-sensitive
Sensitivity to light

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, peroxi 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

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; vapor

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

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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 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

LC50 Rat: > 0.17 mg/l; 4 h

US-EPA

Acute dermal toxicity

LD50 Rabbit: > 2,000 mg/kg

US-EPA

Repeated dose toxicity

Mouse

male

Oral

90 d

daily

NOAEL: 26 mg/kg

LOAEL: 76 mg/kg

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OECD Test Guideline 408
Subchronic toxicity

Rat
male and female
inhalation (dust/mist/fume)
28 d
daily
NOAEL: 0.0029 mg/l
LOAEL: 0.0146 mg/l
OECD Test Guideline 412
Subacute toxicity

Germ cell mutagenicity
Genotoxicity in vivo
In vivo micronucleus test
Mouse
Result: negative
Method: OECD Test Guideline 474

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
semi-static test LC50 Pimephales promelas (fathead minnow): 16.4 mg/l; 96 h
Analytical monitoring: yes
US-EPA

semi-static test NOEC Pimephales promelas (fathead minnow): 5 mg/l; 96 h
Analytical monitoring: yes
US-EPA

Toxicity to daphnia and other aquatic invertebrates
semi-static test LC50 Daphnia pulex (Water flea): 2.4 mg/l; 48 h
Analytical monitoring: yes
US-EPA

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semi-static test NOEC *Daphnia pulex* (Water flea): 1 mg/l; 48 h

Analytical monitoring: yes

US-EPA

Toxicity to algae

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

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

Toxicity to bacteria

static test EC50 activated sludge: 466 mg/l; 30 min

Analytical monitoring: yes

OECD Test Guideline 209

static test EC50 activated sludge: > 1,000 mg/l; 3 h

Analytical monitoring: yes

OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

flow-through test NOEC *Daphnia magna* (Water flea): 0.63 mg/l; 21 d (ECHA)

Biodegradability

> 99 %; 0.5 h; aerobic

(ECHA)

Readily biodegradable.

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

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.

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	--

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Special precautions for user	yes
	Not permitted for transport

Sea transport (IMDG)

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

SECTION 15. Regulatory information

United States of America

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
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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

US State Regulations

Massachusetts Right To Know

Ingredients

hydrogen peroxide

Pennsylvania Right To Know

Ingredients

hydrogen peroxide

New Jersey Right To Know

Ingredients

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.

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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

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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.

Precautionary Statements

Prevention

P280 Wear eye protection.

Response

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.

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.

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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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