

SAFETY DATA SHEET

Creation Date 28-Oct-2009

Revision Date 27-Dec-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name	Hydrogen peroxide, ACS, 29-32% w/w aqueous solution
Cat No. :	33323
Synonyms	Hydrogen Dioxide; Peroxide; Carbamide Peroxide
Recommended Use	Laboratory chemicals.
Uses advised against	Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Oxidizing liquids	Category 2
Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Signal Word

Danger

Hazard Statements

May intensify fire; oxidizer
Harmful if swallowed or if inhaled

Causes severe skin burns and eye damage



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep away from clothing and other combustible materials
Take any precaution to avoid mixing with combustibles
Use only outdoors or in a well-ventilated area

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

Eyes

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 or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Fire

In case of fire: Use CO₂, dry chemical, or foam to extinguish

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

3. Composition/information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	65 - 80
Hydrogen peroxide	7722-84-1	20 - 35

4. First-aid measures

General Advice

If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

	call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms and effects	None reasonably foreseeable. Causes eye burns.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Use water spray or fog; do not use straight streams.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available

Explosion Limits

Upper 100%
Lower 40%

Oxidizing Properties Oxidizer

Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Corrosive material. Containers may explode when heated. Oxidizer: Contact with combustible/organic material may cause fire. In the event of fire and/or explosion do not breathe fumes. Thermal decomposition can lead to release of irritating gases and vapors. May ignite combustibles (wood paper, oil, clothing, etc.).

Hazardous Combustion Products

Hydrogen. Oxygen.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health
3

Flammability
0

Instability
1

Physical hazards
OX

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required.

Do not use steel or aluminum tools or equipment

Environmental Precautions Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and Storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Do not store in metal containers. Containers should be vented periodically in order to overcome pressure buildup. Do not store near combustible materials.

To maintain product quality. Keep refrigerated. Incompatible Materials. Strong oxidizing agents. Metals. Reducing Agent. Alcohols. Ammonia. copper. Copper alloys. lead oxides. Cyanides. Sulfides. Lead. Acetone. Aluminium. . Strong reducing agents. Combustible material.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Hydrogen peroxide	TWA: 1 ppm	(Vacated) TWA: 1 ppm (Vacated) TWA: 1.4 mg/m ³ TWA: 1 ppm TWA: 1.4 mg/m ³	IDLH: 75 ppm REL = 1 ppm (TWA) REL = 1.4 mg/m ³ (TWA)	TWA: 1 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location.
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143. Inorganic gases and vapours filter. Type B. Grey. conforming to EN14387.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Physical State Liquid

Color Colorless

Odor Slight

Odor Threshold No information available

Property

Melting Point/Range

Values

-33 °C / -27.4 °F

Remarks

• Method

Softening Point

No data available

Boiling Point/Range

108 °C / 226.4 °F

@ 760 mmHg

Flash Point

No information available

Method - No information available

Flammability (liquid)	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	> 125°C	
pH	3.3	
Viscosity	No data available	
Water Solubility	Soluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Hydrogen peroxide	-1.1	
Vapor Pressure	No data available	
Density / Specific Gravity	1.110	
Bulk Density	Not applicable	Liquid
Vapor Density	1.10	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

Other Information

Explosive Properties	Not explosive
Oxidizing Properties	Oxidizer
Evaporation Rate	1.0 (Butyl acetate = 1.0)

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Sensitivity to light. Oxidizer: Contact with combustible/organic material may cause fire.
Conditions to Avoid	Incompatible products. Excess heat. Exposure to light. Combustible material.
Incompatible Materials	Strong oxidizing agents, Metals, Reducing Agent, Alcohols, Ammonia, copper, Copper alloys, lead oxides, Cyanides, Sulfides, Lead, Acetone, Aluminium, , Strong reducing agents, Combustible material
Hazardous Decomposition Products	Hydrogen, Oxygen
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation	Harmful by inhalation.
Ingestion	May be harmful if swallowed.
Eyes	Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness.
Skin	Avoid contact with skin. Causes burns.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Hydrogen peroxide	376 mg/kg (Rat) (90%) 910 mg/kg (Rat) (20-60%)	>2000 mg/kg (Rabbit)	LC50 = 2000 mg/m ³ (Rat) 4 h

	1518 mg/kg (Rat) (8-20% sol)	
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Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; Category 1
Bridging principle "Dilution"

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity;

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed				
Hydrogen peroxide	7722-84-1	Not listed	Not listed	A3	Not listed	A3

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects, both acute and delayed No information available.

Other Adverse Effects The toxicological properties have not been fully investigated.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity

Contains a substance which is: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrogen peroxide	EC50 2.5 mg/L/72h	LC50: 16.4 mg/L/96h (P.promelas)	Not listed	EC50 7.7 mg/L/24h

Persistence and Degradability Persistence is unlikely Decomposes Soluble in water based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Hydrogen peroxide	-1.1

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN2014
Proper Shipping Name	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS
Hazard Class	5.1
Subsidiary Hazard Class	8
Packing Group	II

TDG

UN-No	UN2014
Proper Shipping Name	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS
Hazard Class	5.1
Subsidiary Hazard Class	8
Packing Group	II

IATA

UN-No	UN2014
Proper Shipping Name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Hazard Class	5.1
Subsidiary Hazard Class	8
Packing Group	II

IMDG/IMO

UN-No	UN2014
Proper Shipping Name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Hazard Class	5.1
Subsidiary Hazard Class	8
Packing Group	II

15. Regulatory Information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	X	ACTIVE	-
Hydrogen peroxide	7722-84-1	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
- - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Water	7732-18-5	X	-	231-791-2	X	X		X	X	KE-35400
Hydrogen peroxide	7722-84-1	X	-	231-765-0	X	X	X	X	X	KE-20204

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Hydrogen peroxide	-	TQ: 7500 lb

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Hydrogen peroxide	-	1000 lb	-

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Hydrogen peroxide	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Hydrogen peroxide	Theft STQs - 400lb (concentration >=35%)

Other International Regulations

Mexico - Grade

No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Hydrogen peroxide	7722-84-1	-	Use restricted. See entry 75. (see link for restriction details)	-

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Hydrogen peroxide	7722-84-1	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Hydrogen peroxide	7722-84-1	Not applicable	Not applicable	Not applicable	Not applicable

16. Other Information

Prepared By

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Revision Summary	Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS