

2.2 GHS Label elements, including precautionary statements

Pictogram:

Signal Word:

Danger

Hazard statement(s):

May be corrosive to metals. Causes severe burns and serious eye damage. May cause respiratory irritation.

Precautionary statement(s):

Prevention - Keep away from heat. Keep/Store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustible materials. Keep only in original container. Wash thoroughly after handling. Wear protective gloves and eye/face protection. **Response** - 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. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. **In case of fire:** Use water spray or fog to extinguish

Hazards not otherwise classified

Other hazards which do not result in classification: Ingestion can cause irritation and corrosive action in the mouth, stomach and digestive tract. May cause mild skin irritation. Solutions may be corrosive to metal.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	CAS-No	Weight %
Hydrogen peroxide	7722-84-1	12
Water	7732-18-5	88

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice:

If symptoms persist, call a physician.

If inhaled:

Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.

In case of skin contact:	Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 30 minutes. Do not rub area of contact. Seek immediate medical attention/advice. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed.
In case of eye contact:	Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Seek immediate medical attention/advice.
In case of ingestion:	Seek immediate medical attention/advice. Do not induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

May cause severe eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis. May cause respiratory irritation. Symptoms include coughing, shortness of breath and wheezing. Ingestion can cause irritation and corrosive action in the mouth, stomach and digestive tract. May cause mild skin irritation. Redness, swelling, itching and dryness.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable (and unsuitable) extinguishing media

Fires should be flooded with large amounts of water. Avoiding using other types of extinguishing materials, such as foam or dry chemicals. Avoid using Carbon dioxide or other similar extinguishing agents as they are not effective in fires involving oxidizers.

5.2 Specific hazards arising from the substance or mixture

May intensify fire; oxidizer. Substance releases oxygen when heated, which may increase the severity of an existing fire. Not flammable.

5.3 Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

5.4 Further information

Fight fires from a safe distance. Evacuate personnel to safe areas. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

6.3 Methods and materials for containment and cleaning up

Ventilate area of release. Remove all sources of ignition. Stop leak if you can do so without risk. Dike for water control. Contain and absorb spilled liquid with noncombustible, inert absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802). US CERCLA Reportable quantity (RQ): None reportable.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use in a well-ventilated area. Wear chemically resistant protective equipment during handling. Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from combustible material. Ground all equipment during handling. Never return contaminated material to its original container. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use.

Hygiene measures

Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Store in corrosion-resistant containers. Store in vented containers. Do not store on wooden pallets. Protect from sunlight.

SECTION 8. Exposure controls/personal protection

8.1 Occupational exposure limits

Control parameters

Exposure Guidelines

Ingredients with workplace control parameters.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Hydrogen peroxide 7722-84-1	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³	IDLH: 75 ppm TWA: 1 ppm TWA: 1.4 mg/m ³	Mexico: TWA 1 ppm Mexico: TWA 1.5 mg/m ³ Mexico: STEL 2 ppm Mexico: STEL 3 mg/m ³
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Hydrogen peroxide 7722-84-1	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapors below their respective threshold limit value. Use explosion proof equipment.

Personal protective equipment

Eye/face protection

Chemical splash goggles are recommended. A full face shield may also be necessary.

Skin and body protection

Impervious gloves must be worn when using this product. Wear impervious gloves, such as butyl rubber. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Full protective flameproof clothing. Wear chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

Respiratory protection

Respiratory protection is required if the concentrations exceed the TLV. Wear a positive-pressure supplied air respirator. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Control of environmental exposure

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid.
Appearance	Clear.
Odor	Odorless.
Odor Thresh	No information available.
pH	5-6
Melting Point/Range	Not available.
Boiling Point/Range	100 °C / 212 °F
Flash Point	No information available.
Evaporation Rate	>1
Flammability (solid, gas)	Not applicable.
Flammability or explosive limit	
	Upper : NA
	Lower : NA

Vapor Pressure	22 mmHG @ 30 °C
Vapor Density	NA
Density	1.0
Solubility	Soluble.
Partition coefficient; n-octanol/water	No data available.
Autoignition Temp	No data available.
Decomposition Temp	150-152 °C
Viscosity	No data available.
Molecular Formula	H2O2
Molecular Weight	34.01
VOC Content(%)	No data available.
Oxidizing properties	Strong oxidizer which will promote combustion. Will accelerate combustion and increase the risk of fire and explosion in combustible or flammable materials.

9.2 Other safety information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts vigorously, violently or explosively with many organic and inorganic chemicals, such as strong acids, and chlorides, acid anhydrides, ketones, glycols, and organic peroxides.

10.2 Chemical stability

Dangerously reactive material. Stability depends upon many factors including temperature, pH, and the presence of impurities. Solutions that are completely free of contamination are relatively stable. May decompose violently if impurities are present.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Do not keep container sealed. Keep out of direct sunlight. Keep away from combustible material.

10.5 Incompatible materials

Combustible materials: Nitric acid, organic materials, metals, reducing agents, Potassium Pentaborate Tetrahydrate.

10.6 Hazardous decomposition products

None known, refer to hazardous combustion products in Section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute Toxicity

No information available.

Toxicologically Synergistic Products

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	>90 mL/kg	Not listed	Not listed
Hydrogen peroxide	1193 mg/kg	>2000 mg/kg (Rabbit)	0.17 mg/L (Rat) 4 h (no deaths)

Skin corrosion/irritation

Direct skin contact may cause slight or mild, transient irritation.

Serious eye damage/eye irritation

Chemical burns, corneal damage, and possibly blindness can result from direct contact.

Respiratory or skin sensitization

Not expected to be a skin or respiratory sensitizer.

Germ cell mutagenicity

Not expected to be mutagenic in humans.

Carcinogenicity

This material is not classified as hazardous under US OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Contains the following chemicals listed as confirmed animal carcinogens (A3) by AXGIH: Hydrogen Peroxide.

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

IARC: (International Agency for Research on Cancer)

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*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)

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Mexico - Occupational Exposure Limits - Carcinogens

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*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*

Reproductive toxicity

Not expected to have other reproductive effects.

Specific target organ toxicity - single exposure

Category 3 (respiratory) May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

No information available.

Chronic effects

None known or reported by the manufacturer.

11.2 Additional information

None.

SECTION 12. Ecological information

12.1 Toxicity

Ecotoxicity

May be toxic to aquatic life with long lasting effects. See the following tables for the substance's ecotoxicity data. Do not allow material to contaminate ground water system.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrogen peroxide	NOEC 0.63 mg/L/72h	LC50: 16.4 mg/L/96h (P.promelas)	Not listed	EC50 2.4mg/L/48h

12.2 Persistence and degradability

Biodegradation is not applicable to inorganic materials.

12.3 Bio accumulative potential

No data is available on the product itself.

12.4 Mobility in soil

No data is available on the product itself.

Component	log Pow
Hydrogen peroxide	1.50

12.5 Results of PBT and vBvB assessment

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

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No data is available on the product itself.

SECTION 13. Disposal considerations

13.1 Waste Disposal Methods

Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container. Dispose in accordance with all applicable federal, state, provincial and local regulations. If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14: Transport information

DOT

UN-No UN2984
Proper Shipping Name Hydrogen peroxide, aqueous solutions
Hazard Class 5.1
Packing Group III

TDG

UN-No UN2984
Proper Shipping Name Hydrogen peroxide, aqueous solutions
Hazard Class 5.1
Packing Group III

IMDG/IMO

UN-No UN2984
Proper Shipping Name Hydrogen peroxide, aqueous solutions
Hazard Class 5.1
Packing Group III

ICAO/IATA

UN-No UN2984
Proper Shipping Name Hydrogen peroxide, aqueous solutions
Hazard Class 5.1
Packing Group III

SECTION 15: Regulatory information

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Section 312, Extremely Hazardous Substance, 40 CFR 372	
					Toxic Chemical	de minimus Concentration
Hydrogen peroxide	7722-84-1	Yes	N/Ap	1000 lb TPQ (concentration >52%)	No	N/Ap
Water	7732-18-5	Yes	N/Ap	N/Av	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard ; Oxidizing liquid ; Reactive hazard . Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Hydrogen peroxide	7722-84-1	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Water	7732-18-5	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product. **International Information:**

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Hydrogen peroxide	7722-84-1	231-765-0	Present	Present	(1)-419	KE-20204	Present	HSR001326, HSR001449, HSR001450 (dilution)
Water	7732-18-5	231-791-2	Present	Listed	Listed	KE-35400	Present	Listed

SECTION 16: Other information

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Disclaimer:

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.