

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide 29%

SECTION 1 – PRODUCT IDENTIFICATION AND USE

PRODUCT NAME: HYDROGEN PEROXIDE 29%
PRODUCT USE: Oxidizing Agent
CHEMICAL NAME: Not applicable

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SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species
Water 7732-18-5	Balance	Oral LD50 (Rat) >90 mL/kg
Hydrogen Peroxide 7722-84-1	29	LD50 (oral, male rat): 1193 mg/kg (35% solution) ; LD50 (oral, female rat): 801 mg/kg (60% solution) ; LD50 (oral, male rat): 75 mg/kg (70% solution) ; LD50 (oral, mouse): 2000 mg/kg (90% solution) ; LD50 (dermal, rabbit): approximately 690 mg/kg (90% solution) ; LD50 (oral, rat): 805 mg/kg (70% solution) ; LC50 (inhalation, rat) ; >0.17mg/l/4h (50% solution) ; LD50 (dermal, rabbit) : > 6500 mg/kg (70% solution)

Note: No additional remark.

SECTION 3 – HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: Corrosive. May cause conjunctivitis, corneal burns and permanent damage. Symptoms may occur with delay.

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HYDROGEN PEROXIDE 29%**

Skin Contact: Corrosive. May cause burns resulting in permanent damage. Prolonged exposure may cause severe irritation and white discoloration. Burning may result in localized erythema (redness) or even blistering of the skin.

Inhalation: Causes severe respiratory irritation. Vapours may cause pulmonary edema. Toxic effects may be delayed.

Ingestion: Ingestion of high concentrations causes rapid release of oxygen which may expand the esophagus or stomach resulting in severe damage (bleeding, ulceration or perforation). Expected to cause burns to the gastrointestinal tract. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

SECTION 4 – FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing. Have an ophthalmologist make an evaluation of eye injury.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and laundry before reuse.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

SECTION 4 – FIRST AID MEASURES

Notes to Physician: Hydrogen peroxide at this concentration is a strong oxidant. Direct contact with the eye is likely to cause corneal damage especially if not washed immediately. Careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered. Because of the likelihood of corrosive effects on the gastrointestinal tract after ingestion, and the unlikelihood of systemic effects, attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. There is a remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point: None.

Flash Point Method: Not applicable.

Autoignition Temperature: Not available.

Flammable Limits in Air (%): Not Available.

Extinguishing Media: Do not use CO2 extinguisher on this material; use only water spray or appropriate foam. Do not use organic compounds on this material.

Special Exposure Hazards: Strong oxidizer. Contact with combustible materials may cause a fire. Release of oxygen may support combustion. Contact with incompatible materials (e.g. metals, alkalis and reducing agents) will cause hazardous decomposition resulting in the release of large quantities of heat, steam and oxygen gas. Exposure to heat may cause hazardous decomposition. A severe detonation hazard may exist when mixed with organic liquids, e.g. kerosene or gasoline. Isolate and restrict area access. Fight fire from a safe distance and from a protected location. Stay upwind. Stop leak only if safe to do so. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could result in container rupture.

Hazardous Decomposition/Combustion Materials (under fire conditions): Oxygen. Steam.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 0, INSTABILITY 3

HMIS RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 0, REACTIVITY 3

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

Environmental Precautionary Measures: Prevent entry into sewers or streams, dike if needed.

Procedure for Clean Up: Restrict access to unprotected personnel. Stop leak only if safe to do so. Small spills: Flush area with water. Large spills : Dike with earth, sand or inert sorbent material to contain spill. Remove liquid with compatible pumps or vacuum equipment. Place in suitable container for disposal. Flush area with water. Keep materials which can burn away from spilled materials.

Spontaneous combustion hazard : - combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles, can cause the material to ignite and result in a fire.

SECTION 7 – HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Empty containers may contain hazardous product residues. Avoid contact with eyes, skin and clothing. Avoid breathing vapor. Never use air pressure to empty a container.

Storage: Do not store near combustible materials. Store in a cool, dry, well ventilated area. Keep containers tightly closed. Do not store this material in containers made of light metals. Recommended container materials: glass, polyvinyl chloride, polyethylene, ceramics, polypropylene. Use adequate venting devices on all packages, containers and tanks and check correct operation periodically. Do not confine product in unvented vessels or between closed valves. Risk of overpressure and bursting due to decomposition in confined spaces and pipes.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Respiratory Protection: If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Gloves:

Natural rubber gloves. Butyl rubber gloves. Nitrile gloves.

Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Water	Not available	Not available.	Not Available.
Hydrogen Peroxide	1 ppm TLV-TWA	1 ppm TWA 1.4 mg/m ³ TWA	75 ppm

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Colour: Clear Colourless

Odour: Slight Acrid

pH Not Available.

Specific Gravity: 1.108

Boiling Point: Not Available.

Freezing/Melting Point: Not Available.

Vapour Pressure: Not Available.

Vapour Density: Not Available.

% Volatile by Volume: 100%

Evaporation Rate: <1

Solubility: Completely miscible.

VOCs: Not Available.

Viscosity: Not Available.

Molecular Weight: Not Available.

Other: Not Available.

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: High temperatures. Spontaneous combustion hazard : - Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood, or other combustibles, can cause the material to ignite and result in a fire.

Materials to Avoid: Metals. Reducing agents. Alkalis. Combustible material. Organic materials. Heavy metals and their salts.

Hazardous Decomposition Products: Oxygen. Steam.

Additional Information:

No additional remark.

SECTION 11 – TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: Ingestion of high concentrations causes rapid release of oxygen which may expand the esophagus or stomach resulting in severe damage (bleeding, ulceration or perforation). Expected to cause burns to the gastrointestinal tract. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

Skin Contact: Corrosive. May cause burns resulting in permanent damage. Prolonged exposure may cause severe irritation and white discoloration. Burning may result in localized erythema (redness) or even blistering of the skin.

Inhalation: Causes severe respiratory irritation. Vapours may cause pulmonary edema. Toxic effects may be delayed.

SECTION 11 – TOXICOLOGICAL INFORMATION

Eye Contact: Corrosive. May cause conjunctivitis, corneal burns and permanent damage. Symptoms may occur with delay.

Additional Information:

Acute Test of Product:

Acute Oral LD50: 805 mg/kg (rat)

Acute Dermal LD50: >6500 mg/kg (rabbit)

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Water	Not listed.	Not listed.
Hydrogen Peroxide	Group 3	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Carcinogenicity Comment: No additional information available.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: It is not possible to conclude that hydrogen peroxide is mutagenic. Positive results have been obtained in cultured humans cells. Negative results have been obtained in relevant studies using live animals. Positive results have been obtained in short-term mutagenicity tests.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicological Information

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity	Ecotoxicity - Freshwater Algae Data
Water	Not Available	Not Available	Not Available.
Hydrogen Peroxide	LC50 (48 hr) carp: 42 mg/L. ; LC50 (96 hr) fish : 37.4 mg/l	EC50 (24 hr) Daphnia : 7.7 mg/l	NOEC (72 hr) Algae : 0.1 mg/l

Other Information:

Under ambient conditions quick hydrolysis, reduction or decomposition occurs. Hydrogen peroxide quickly decomposes to oxygen and water.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION 14 – TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: HYDROGEN PEROXIDE AQUEOUS SOLUTION

DOT Hazardous Class 5.1 (8)

DOT UN Number: UN2014

DOT Packing Group: II

DOT Reportable Quantity (lbs): Not Available.

Note: No additional remark.

Marine Pollutant: No.

TDG (Canada):

TDG Shipping Name: HYDROGEN PEROXIDE AQUEOUS SOLUTION

Hazard Class: 5.1 (8)

UN Number: UN2014

Packing Group: II

Note: No additional remark.

Marine Pollutant: No.

SECTION 15 – REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Water	Not Listed.	Not Listed.	Not Listed.
Hydrogen Peroxide	Listed	Not Listed.	Not Listed.

California Proposition 65: Not Listed.

MA Right to Know List: Listed.

New Jersey Right-to-Know List: Listed.

Pennsylvania Right to Know List: Listed.

WHMIS Hazardous Class:

C OXIDIZING MATERIALS

D1B TOXIC MATERIALS

E CORROSIVE MATERIAL

F DANGEROUSLY REACTIVE MATERIAL



SECTION 16 – OTHER INFORMATION

Additional Information: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

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END OF MSDS