Brenntag Canada Inc.

BRENNTAG

MATERIAL SAFETY DATA SHEET

HYDROGEN PEROXIDE, ALL GRADES

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Brenntag Canada Inc.
43 Jutland Rd.
Toronto, ON
M8Z 2G6
(416) 259-8231

Website: http://www.brenntag.ca

WHMIS#: 00060401
Index: GCD0028/15A
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Date of Revision: 2015 February 17

EMERGENCY TELEPHONE NUMBER (For Emergencies Involving Chemical Spills or Releases)

1 855 273 6824

PRODUCT IDENTIFICATION

Product Name:	Hydrogen Peroxide, All Grades.
Chemical Name:	Hydrogen Peroxide.
Synonyms:	Hydrogen Peroxide 3%, 5%, 18%, 25%, 35%, 50% Hydrogen dioxide; Hydroperoxide
Chemical Family:	Peroxide.
Molecular Formula:	H_2O_2.
Product Use:	Pharmaceutical. Chemical intermediate. Oxidizing agent. Bleaching sugar, soaps and oils. This product is not intended for ingestion.

WHMIS Classification / Symbol:

C: Oxidizer
E: Corrosive
F: Dangerously Reactive

READ THE ENTIRE MSDS FOR THE COMPLETE HAZARD EVALUATION OF THIS PRODUCT.

2. COMPOSITION, INFORMATION ON INGREDIENTS (Not Intended As Specifications)

Ingredient	*CAS#*	*ACGIH TLV (TWA)*		*% Concentration*
Hydrogen Peroxide	7722-84-1	1 ppm	*A3	3 - 60

A3 = Confirmed animal carcinogen with unknown relevance to humans. (ACGIH-A3).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive! Toxic effects are principally related to its corrosive properties. Solutions and mists with a pH of 3 or less are a significant health concern. Toxic effects may be delayed. May be fatal if swallowed. Causes severe skin and eye burns. Mists or sprays are extremely irritating to eyes and respiratory tract. See "Other Health Effects" Section. Strong oxidizer. Do not store indoors on wooden pallets or near combustible materials (eg. wood, paper and organic materials such as solvents and carbon based chemicals). Contact with other combustible material can cause fire. Can decompose at high temperatures forming toxic gases. Drying on clothing or other combustible material may cause fire. Contents may develop pressure on prolonged exposure to heat. Highly reactive.

POTENTIAL HEALTH EFFECTS

Inhalation:	Corrosive! Product may cause severe irritation of the nose, throat and respiratory tract. Repeated and/or prolonged exposures may cause productive cough, running nose, bronchopneumonia, pulmonary edema (fluid build-up in lungs), and reduction of pulmonary function. Toxic effects may be delayed. See "Other Health Effects" Section.
Skin Contact:	Corrosive! Concentrated solutions may cause pain and deep and severe burns to the skin. Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Burns (chemical) can occur if not promptly removed. Avoid handling when the skin is moist, wet or abraded.
Skin Absorption:	Corrosive! Skin absorption is a secondary concern to the continual destruction of tissue while the product is in contact with the skin.
Eye Contact:	Extremely corrosive! This product causes corneal scarring and clouding. Glaucoma, cataracts and permanent blindness may occur. Contact can cause eye burns.
Ingestion:	Corrosive! This product causes severe burning and pain in the mouth, throat and abdomen. Vomiting, diarrhea and perforation of the esophagus and stomach lining may occur.
Other Health Effects:	Corrosive effects on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain. Strict adherence to first aid measures following any exposure is essential. May cause cyanosis, gastrointestinal bleeding, pulmonary edema, bronchopneumonia and central nervous system (CNS) depression. Cyanosis is characterized by navy blue, almost black lips, tongue, and mucous membranes, with skin colour being slate gray. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. Pulmonary edema is the build-up of fluid in the lungs that might be fatal. Symptoms of pulmonary edema, such as shortness of breath, may not appear until several hours after exposure and are aggravated by physical exertion. (4) CNS depression is characterized by headache, dizziness, drowsiness, nausea, vomiting and incoordination. Severe overexposures may lead to coma and possible death due to respiratory failure.

4. FIRST AID MEASURES

FIRST AID PROCEDURES

General Guidelines:	Prompt removal of the material and obtaining medical attention are essential for all contact. Remove all contaminated clothing and immediately wash the exposed areas with copious amounts of water. Continue the flushing during transportation to the emergency department. Corrosive effects may be delayed (up to 72 hours), and damage may occur without the sensation or onset of pain. Contact local poison control centre for further guidance.
Inhalation:	Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Obtain medical attention IMMEDIATELY.
Skin Contact:	Prompt removal of the material from the skin is essential. Remove all contaminated clothing and immediately wash the exposed areas with copious amounts of soap and water for a minimum of 30 minutes or up to 60 minutes for critical body areas. Immerse the exposed part immediately in ice water to relieve pain and to prevent swelling and blistering. Place cold packs, ice or wet cloths on the burned area if immersion is not possible. Cover the exposed part with a clean, preferably sterile, lint-free dressing. Obtain medical attention IMMEDIATELY and monitor breathing and treat for shock for severe exposure.
Eye Contact:	Immediately flush eyes with running water for a minimum of 30 minutes, preferably up to 60 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport. Where possible, consult an ophthamologist.
Ingestion:	Do not attempt to give anything by mouth to an unconscious person. IMMEDIATELY contact local Poison Control Centre. If victim is alert and not convulsing, rinse mouth out and give 1 to 2 glasses of milk. Water may be used if milk is not available but it is not as effective. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more milk or water. IMMEDIATELY transport victim to an emergency facility.

Note to Physicians:	Immediate consultation with the local Poison Control Centre should be initiated. Severe and sometimes delayed (up to 72 hours) local and systemic reactions can occur. This product contains materials that may cause severe pneumonitis if aspirated. If ingestion has occurred less than 2 hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Give artificial resuscitation and appropriate chemotherapy if respiration is depressed. Due to the severely irritating or corrosive nature of the material, swallowing may lead to ulceration and inflammation of the upper alimentary tract with hemorrhage and fluid loss. Also, perforation of the esophagus or stomach may occur, leading to mediastinitis or peritonitis and the resultant complications. Mucosal injury following ingestion of this corrosive material may contraindicate the induction of vomiting in the treatment of possible intoxication. Similarly, if gastric lavage is performed, intubation should be done with great care. If oral burns are present or a corrosive ingestion is suspected by the patient's history, perform esophagoscopy as soon as possible. Scope should not be passed beyond the first burn because of the risk of perforation. Medical conditions that may be aggravated by exposure to this product include diseases of the skin, eyes or respiratory tract.

5. FIRE-FIGHTING MEASURES

Flashpoint (°C)	***AutoIgnition Temperature (°C)***	**Flammability Limits in Air (%):** ***LEL***	***UEL***
Non-combustible (does not burn).	Not applicable.	Not applicable.	Not applicable.

Flammability Class (WHMIS):	Not regulated.
Hazardous Combustion Products:	Thermal decomposition products may include oxygen, heat and steam.
Unusual Fire or Explosion Hazards:	Oxygen is released as a result of exposure to above moderate heating; greater than 160 Deg. Celsius. Solutions of hydrogen peroxide are non-flammable by themselves, but are strong oxidizers which can cause ignition of combustible or oxidizable materials. May decompose violently on contact with metals, or their salts, dusts or other contaminants. Contact with oxidizable and combustible materials (wood, paper and organic materials such as solvents and carbon based chemicals) can lead to fires. Closed containers exposed to heat may explode.
Sensitivity to Mechanical Impact:	Not normally shock sensitive, but concentrations greater than 90 % wt./wt. can be made to detonate under severe conditions. (4)
Rate of Burning:	Not available.
Explosive Power:	Not available.
Sensitivity to Static Discharge:	Not expected to be sensitive to static discharge.
EXTINGUISHING MEDIA	
Fire Extinguishing Media:	Water. Use water in as much volume as possible in order to cool the burning mass quickly.
FIRE FIGHTING INSTRUCTIONS	
Instructions to the Fire Fighters:	Use water spray to cool fire-exposed containers or structures. Use water spray to disperse vapours. Spilled material may cause floors and contact surfaces to become slippery.
Fire Fighting Protective Equipment:	Hydrogen peroxide is a corrosive liquid; full protective gear should be worn.

6. ACCIDENTAL RELEASE MEASURES

Information in this section is for responding to spills, leaks or releases in order to prevent or minimize the adverse effects on persons, property and the environment. There may be specific reporting requirements associated with spills, leaks or releases, which change from region to region.

Containment and Clean-Up Procedures:	See Section 5, "Unusual Fire or Explosion Hazards". See Section 13, "Deactivating Chemicals". In all cases of leak or spill contact vendor at Emergency Number shown on the front page of this MSDS. Wear respirator, protective clothing and gloves. Avoid dry sweeping. Do not use compressed air to clean surfaces. Vacuuming or wet sweeping is preferred. Return all material possible to container for proper disposal. Do not use combustible materials such as sawdust as an absorbent. Spilled material may cause floors and contact surfaces to become slippery. Eliminate all sources of ignition. Collect product for recovery or disposal. For release to land, or storm water runoff, contain discharge by constructing dikes or applying inert absorbent; for release to water, utilize damming and/or water diversion to minimize the spread of contamination. Ventilate enclosed spaces. Notify applicable government authority if release is reportable or could adversely affect the environment.

7. HANDLING AND STORAGE

HANDLING

Handling Practices:	Use normal "good" industrial hygiene and housekeeping practices. Never return unused peroxide to the original containers. Drums which have been exposed to heat may be under internal pressure. These should be cooled and carefully vented before opening. A face shield and apron should be worn. All materials which come into contact with Hydrogen Peroxide should be thoroughly cleaned, including detergent washing and clean water rinse. Aluminum and stainless steel surfaces should be rinsed with an oxidizing acid after the clean water rinse. (4) Immerse contaminated clothing in water immediately and KEEP WET until discarded or laundered.
Ventilation Requirements:	See Section 8, "Engineering Controls".
Other Precautions:	Use only with adequate ventilation and avoid breathing aerosols (vapours or mists). Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Wash contaminated clothing thoroughly before re-use. Absorption via contact with skin, eyes and mucous membranes can contribute to the overall exposure. Consider measures to prevent absorption by these routes. Do not use cutting or welding torches on empty drums that contained this material/product. Protect against excessive heat and direct sunlight. Avoid contact with any direct heat sources. All tools to open drums and transfer vessels should be made of non-sparking material. Most combustible materials in contact with decomposition products will readily burst into flames.

STORAGE

Storage Temperature (°C):	See below.
Ventilation Requirements:	Ventilation should be corrosion proof.
Storage Requirements:	Store in a clean, cool well ventilated area, away from organic chemicals, strong bases, strong acids, metal powders, carbides, sulfides, and any readily oxidizable material. Protect from direct sunlight. Protect against physical damage. Store away from incompatibles. Never store hydrogen peroxide in a closed unvented container. Do not store on wooden floors or wooden pallets. Storage tanks should be in a contained area to control any spills or leaks. Storage area should be equipped with corrosion-resistant floors, sumps and should have controlled drainage to a recovery tank.
Special Materials to be Used for Packaging or Containers:	Materials of construction for storing the product include: aluminum 99.5 %, Stainless Steel 304 or Stainless Steel 316, approved grades of HDPE. Equipment for storage, handling or transport should NOT be made from the following material, or, where applicable, its alloys: steel, iron, copper, nickel, lead and silver. (4) Attacks some types of rubber, plastics and coatings. Confirm suitability of any material before using.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Recommendations listed in this section indicate the type of equipment, which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

ENGINEERING CONTROLS

Engineering Controls:	Local exhaust ventilation required. Ventilation should be corrosion proof. Make up air should be supplied to balance air that is removed by local or general exhaust ventilation. Ventilate low lying areas such as sumps or pits where dense vapours may collect. For personnel entry into confined spaces (i.e. bulk storage tanks) a proper procedure must be followed. It must include consideration of, among other things, ventilation, testing of tank atmosphere, provision and maintenance of SCBA, and emergency rescue. Use the "buddy" system. The second person should be in view and trained and equipped to execute a rescue. (6)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye Protection:	Safety glasses with side shields are recommended as minimal eye protection. Use full face-shield and chemical safety goggles when there is potential for contact. Contact lenses should not be worn when working with this material.
Skin Protection:	Gloves and protective clothing made from neoprene, butyl rubber, nitrile rubber or PVC should be impervious under conditions of use. Do not use gloves or protective clothing made from polyvinyl alcohol (PVA). Attacks some types of rubber, plastics and coatings. Prior to use, user should confirm impermeability. Discard contaminated gloves.
Respiratory Protection:	Recommendations for respirator selection for Hydrogen Peroxide are: up to 10 ppm use any supplied-air respirator; up to 25 ppm use any continuous-flow supplied-air respirator; up to 50 ppm use full facepiece self-contained breathing apparatus or full facepiece supplied-air respirator; up to 75 ppm use any full facepiece supplied-air respirator that is operated in a pressure-demand or other positive pressure mode. (4) Charcoal filters should not be used as they are not compatible with oxidizers. An air-supplied respirator if concentrations are higher or unknown. Immediately Dangerous to Life and Health (IDLH) value: 75 ppm. The purpose of establishing an IDLH value is to ensure that the worker can escape from a given contaminated environment in the event of failure of the most protective respiratory equipment. In the event of failure of respiratory protective equipment, every effort should be made to exit immediately. (4) If while wearing a respiratory protection, you can smell, taste or otherwise detect anything unusual, or in the case of a full facepiece respirator you experience eye irritation, leave the area immediately. Check to make sure the respirator to face seal is still good. If it is, replace the filter, cartridge or canister. If the seal is no longer good, you may need a new respirator. (6)
Other Personal Protective Equipment:	Wear an impermeable apron and boots. Locate safety shower and eyewash station close to chemical handling area. Take all precautions to avoid personal contact.

EXPOSURE GUIDELINES

SUBSTANCE	***ACGIH TLV***		***OSHA PEL***		***NIOSH REL***	
	(STEL)	***(TWA)***	***(STEL)***	***(TWA)***	***(STEL)***	
Hydrogen Peroxide	—	1 ppm	---	1 ppm	---	

9. PHYSICAL AND CHEMICAL PROPERTIES (Not intended as Specifications)

Physical State:	Liquid.
Appearance:	Clear, colourless liquid.
Odour:	Slight, pungent odour.
Odour Threshold (ppm):	Not available.
Boiling Range (°C):	See Section 16, "Other Information".
Melting/Freezing Point (°C):	See Section 16, "Other Information".
Vapour Pressure (mm Hg at 20° C):	See Section 16, "Other Information".
Vapour Density (Air = 1.0):	See Section 16, "Other Information".
Relative Density (g/cc):	See Section 16, "Other Information".
Bulk Density:	See Section 16, "Other Information".
Viscosity:	1.07 mPa.s (27.2%); 1.17 mPa.s (50%); 1.24 mPa.s (70%).
Evaporation Rate (Butyl Acetate = 1.0):	Not applicable.
Solubility:	Soluble in water, alcohols and ethers.
% Volatile by Volume:	Not available.
pH:	1 to 4.
Coefficient of Water/Oil Distribution:	Not available.
Volatile Organic Compounds (VOC):	Not available.
Flashpoint (°C):	Non-combustible (does not burn).

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

Under Normal Conditions:	Solutions of high purity are very stable. Decomposition increases with increase in temperature. Decomposition increases with increase in concentration. Decomposition increases outside the pH range 3.5 - 4.5. Decomposition increases with presence of heavy metals and organics.

Under Fire Conditions:	Unstable.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	High temperatures, sparks, open flames and all other sources of ignition. Rate of decomposition doubles for each 10 °C increase. Less than 90 % concentration does not readily detonate. Greater than 90 % concentration or high temperature may facilitate detonation. Do not distill to dryness. Avoid excessive temperature or prolonged reflux, such as in batch distillation.
Materials to Avoid:	Reducing agents. Strong bases. Organic materials. Avoid oxidizable materials, metal powder, copper, bronze, fuels (eg. lubricants, machine oils), fluorocarbon lubricants, acids, corrosive liquids, chlorates, sulphur, charcoal, coke and other finely divided combustibles. Contact with oxidizable and combustible materials (wood, paper and organic materials such as solvents and carbon based chemicals) can lead to fires. Potassium Permanganate. Salts of metals. Metals. Corrosive to iron, steel, copper and their alloys. Nickel and its alloys. Lead. Silver. Attacks some types of rubber, plastics and coatings.
Decomposition or Combustion Products:	Thermal decomposition products may include oxygen, heat and steam.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:

SUBSTANCE	***LD50 (Oral, Rat)***	***LD50 (Dermal, Rabbit)***	***LC50 (Inhalation, Rat, 4h)***
Hydrogen Peroxide	693 – 1 232 mg/kg (70 – 30%) (3)	> 2 000 mg/kg (3)	2 000 mg/m³ (1, 3)

Carcinogenicity Data:	The ingredient(s) of this product is (are) not classed as carcinogenic by ACGIH, IARC, OSHA or NTP.
Reproductive Data:	Not available. No adverse reproductive effects are anticipated.
Mutagenicity Data:	Hydrogen Peroxide which in vitro was shown to be mutagenic without metabolic activation, and generally not mutagenic with metabolic activation. (3) See "Other Studies Relevant to Material".
Teratogenicity Data:	Not available. No adverse teratogenic effects are anticipated.
Respiratory / Skin Sensitization Data:	None known.
Synergistic Materials:	None known.
Other Studies Relevant to Material:	At concentration of 8% and higher, Hydrogen Peroxide in direct contact with the eyes can cause irreversible tissue damage and result in blindness. (3) Ingestion can cause corrosive damage to the gastrointestinal tract and gas embolisms, and may be fatal. (3) A drop of 5 - 30 % Hydrogen Peroxide in rabbit eyes causes surface clouding, which is persistent when concentration is greater than 10 %. In some cases, a 5 % solution caused severe corneal damage. Rabbits exposed daily for 3 months to vapours at 22 ppm showed no eye injury, although the hair was bleached and irritation was noted around the nose. (4) Dogs were exposed 6 hours/day, 5 days/week for 6 months to an average vapour concentration of 7 ppm. Autopsies showed thickened skin, but no hair follicle destruction. The lungs were irritated, but there was no significant changes in the blood or urinary components. (4) Intestinal (duodenal) tumours were induced in mice given drinking water containing 0.4 % Hydrogen Peroxide for 108 weeks. In one study, no promoter role nor potential to cause skin cancer was shown. (4) Hydrogen Peroxide has been shown to induce DNA repair in bacteria (E. coli) and mutations in yeast (Saccharmyces cerevisiae). Mutagenic activity in mammalian cells is low. (4)

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Harmful to aquatic life at low concentrations. Hydrogen Peroxide: Fish toxicity: 96-hour TLm = 22 to 35 mg/L (Fathead Minnow). (3) 96-hour TLm = 27.4 mg/L (Catfish). (3) 96-hour LC50 (Pimephales promelas) = 16.4 mg/L (3) 48-hour EC50 (Daphnia pulex) = 2.4 mg/L (3) 72 to 96-hour EC50 (Algae, Fresh Water) = 3.7 to 160 mg/L (3) 72 to 96-hour EC50 (Nitzchia closrerium, Salt Water) = 0.85 mg/L (3) 96-Hour NOEC (Pimephales promelas) = 5.0 mg/L (3) 48-hour NOEC (Daphnia pulex) = 1.0 mg/L (3)
Environmental Fate:	Hydrogen Peroxide has considerable abiotic and biotic degradability. (3) When tested for mobility, Hydrogen Peroxide showed non-significant volatility in air and non-significant evapouration and adsorption for soils/sediments. (3) Abiotic Degradation: Air, indirect photo-oxidation, t1/2 = 10 to 20 hours. Conditions: sensitizer, OH radicals. (3) Water, redox reaction, t1/2 = 2.5 days, 10,000 ppm. Conditions: mineral and enzymatic catalyst, fresh water. (3) Water, redox reaction, t1/2 = 20 days, 100 ppm. Conditions: mineral and enzymatic catalyst, fresh water. (3) Water, redox reaction, t1/2 = 60 hours. Conditions: mineral and enzymatic catalyst, salt water. (3) Soil, redox reaction, t1/2 = 15 hours. Conditions: mineral catalyst. (3) Biotic Degradation: Aerobic, t1/2 = below 1 minute in biological treatment sludge. Result: rapid and considerable biodegradation. (3) Aerobic, t1/2 = 0.3 to 2 days in fresh water. Result: rapid and considerable biodegradation. (3) Effects on biological treatment plants, above 200 mg/L. Result: inhibitory action. (3) Potential for Bioaccumulation: Hydrogen Peroxide does not bioaccumulate due to enzymatic metabolism. Hydrogen Peroxide quickly decomposes to water and oxygen. (3)

13. DISPOSAL CONSIDERATIONS

Deactivating Chemicals:	Apply cautiously a dilute solution of a reducing agent such as sodium sulphite or sodium bisulphite to the contained spill. Neutralization is expected to be exothermic. Vigourous effervescence results. Flush spill area with water.
Waste Disposal Methods:	This information applies to the material as manufactured. Reevaluation of the product may be required by the user at the time of disposal since the product uses, transformations, mixtures and processes may influence waste classification. Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems.
Safe Handling of Residues:	See Section 13, "Deactivating Chemicals".
Disposal of Packaging:	Empty containers retain product residue (liquid and/or vapour) and can be dangerous. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. Do not expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. Treat package in the same manner as the product. Do not dispose of package until thoroughly washed out.

14. TRANSPORTATION INFORMATION

CANADIAN TDG ACT SHIPPING DESCRIPTION:

HYDROGEN PEROXIDE, AQUEOUS SOLUTION, Class 5.1(8), UN2014, PG .

Label(s): Oxidizing Substances, Corrosives. Placard: Oxidizing Substances.

ERAP Index: -----. Exemptions: None known.

Hydrogen Peroxide, Above 60 % :
HYDROGEN PEROXIDE, STABILIZED or HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED, Class 5.1(8), UN2015, PG I.
Labels: Oxidizer and Corrosive. Placards: Oxidizer. ERAP Index: 1000 L.

Hydrogen Peroxide, 20 % - 60 % :
HYDROGEN PEROXIDE, AQUEOUS SOLUTION, Class 5.1(8), UN2014, PG II.
Labels: Oxidizer and Corrosive. Placards: Oxidizer. ERAP Index: Not applicable.

Hydrogen Peroxide, 8 % to less than 20 % :
HYDROGEN PEROXIDE, AQUEOUS SOLUTION, Class 5.1, UN2984, PG III.
Labels: Oxidizer. Placards: Oxidizer. ERAP Index: Not applicable.

Hydrogen Peroxide, less than 8 % :
Not regulated.

US DOT CLASSIFICATION (49CFR 172.101, 172.102):

HYDROGEN PEROXIDE, AQUEOUS SOLUTION, Class 5.1(8), UN2014, PG .

Label(s): Oxidizer, Corrosive. Placard: Oxidizer.

CERCLA-RQ: - Exemptions: None known.

Hydrogen Peroxide, Above 60 % :
HYDROGEN PEROXIDE, STABILIZED or HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED, Class 5.1(8), UN2015, PG I.
Labels: Oxidizer and Corrosive. Placards: Oxidizer. ERAP Index: 1000 L.

Hydrogen Peroxide, 20 % - 60 % :
HYDROGEN PEROXIDE, AQUEOUS SOLUTION, Class 5.1(8), UN2014, PG II.
Labels: Oxidizer and Corrosive. Placards: Oxidizer. ERAP Index: Not applicable.

Hydrogen Peroxide, 8 % to less than 20 % :
HYDROGEN PEROXIDE, AQUEOUS SOLUTION, Class 5.1, UN2984, PG III.
Labels: Oxidizer. Placards: Oxidizer. ERAP Index: Not applicable.

Hydrogen Peroxide, less than 8 % :
Not regulated.

15. REGULATORY INFORMATION

CANADA

CEPA - NSNR:	All components of this product are included on the DSL.
CEPA - NPRI:	Not included.
CANADIAN FOOD AND DRUG ACT/REGULATIONS:	The use of this material/product as a food additive is regulated by Health Canada in the Food and Drug Act and the Food and Drug Regulations. It is incumbent on the user of this material/product to ensure any intended food application is consistent with Health Canada guidelines. Food Grade Hydrogen Peroxide is manufactured to meet specifications outlined in the Food Chemical Codex. The Food and Drug Administration (FDA) has not approved hydrogen peroxide for human consumption. It is approved for a limited number of food processing applications by the (FDA). (3) Food Grade designation in no way implies that the product is safe for consumption by humans.

Controlled Products Regulations Classification (WHMIS):

C: Oxidizer
E: Corrosive
F: Dangerously Reactive

USA

Environmental Protection Act:	All components of this product are included on the TSCA inventory.
OSHA HCS (29CFR 1910.1200):	Oxidizer. Corrosive. Dangerously Reactive.
U.S. FOOD AND DRUG ADMINISTRATION:	This material/product is regulated for use by the US FDA. It is incumbent on the user of this material/product to ensure any intended food application is consistent with US FDA guidelines. Food Grade Hydrogen Peroxide is manufactured to meet specifications outlined in the Food Chemical Codex. The Food and Drug Administration (FDA) has not approved hydrogen peroxide for human consumption. It is approved for a limited number of food processing applications by the (FDA). (3) Food Grade designation in no way implies that the product is safe for consumption by humans.

NFPA: 3 Health, 0 Fire, 3 Reactivity (4)
HMIS: 3 Health, 0 Fire, 3 Reactivity (4)

INTERNATIONAL

Not available.

16. OTHER INFORMATION

ADDITIONAL INFORMATION

	25%	35%	50%	70%
Boiling Range (Deg Celsius):	100	108.0	115.0	125.0
Melting/Freezing Point (Deg Celsius)	-26	-33.0	-52.0	-40.3
Vapour Density (Air = 1.0):	n/a	n/a	1.0	1.2
Vapour Pressure (mm Hg at 20 Deg. Celsius):	n/a	n/a	9.0	6.8
Relative Density (gm/cc, Water = 1.0):	1.097	1.132	1.2	1.29
Bulk Density (kg/m³):	1 097	1 132	1 200	1 290

n/a = Not available.

REFERENCES

1. RTECS-Registry of Toxic Effects of Chemical Substances, Canadian Centre for Occupational Health and Safety RTECS database.
2. Clayton, G.D. and Clayton, F.E., Eds., Patty's Industrial Hygiene and Toxicology, 3rd ed., Vol. IIA,B,C, John Wiley and Sons, New York, 1981.
3. Supplier's Material Safety Data Sheet(s).
4. CHEMINFO chemical profile, Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada.
5. Guide to Occupational Exposure Values, 2011, American Conference of Governmental Industrial Hygienists, Cincinnati, 2011.
6. Regulatory Affairs Group, Brenntag Canada Inc.
7. The British Columbia Drug and Poison Information Centre, Poison Managements Manual, Canadian Pharmaceutical Association, Ottawa, 1981.

To obtain revised copies of this or other Material Safety Data Sheets, contact your nearest Brenntag Canada Regional office.

British Columbia: 20333-102B Avenue, Langley, BC, V1M 3H1
Phone: (604) 513-9009 Facsimile: (604) 513-9010

Alberta: 6628 - 45 th. Street, Leduc, AB, T9E 7C9
Phone: (780) 986-4544 Facsimile: (780) 986-1070

Manitoba: 681 Plinquet Street, Winnipeg, MB, R2J 2X2
Phone: (204) 233-3416 Facsimile: (204) 233-7005

Ontario: 43 Jutland Road, Toronto, ON, M8Z 2G6
Phone: (416) 259-8231 Facsimile: (416) 259-5333

Quebec: 2900 Jean Baptiste Des., Lachine, PQ, H8T 1C8
Phone: (514) 636-9230 Facsimile: (514) 636-0877

Atlantic: A-105 Akerley Boulevard, Dartmouth, NS, B3B 1R7

Phone: (902) 468-9690 Facsimile: (902) 468-3085

Prepared By: Regulatory Affairs Group, Brenntag Canada Inc., (416) 259-8231.