

MATERIAL SAFETY DATA SHEET

BRENTTAG

NFPA 704 DESIGNATION
HAZARD RATING



Brenntag MSDS #:	BPI-00290
MSDS Revision/Issue Date:	09/11/08
Supersedes Revision Date:	New

4=Extreme
3=High
2=Moderate
1=Slight
0=Insignificant

1. CHEMICAL PRODUCT IDENTIFICATION & COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:	Hydrogen Peroxide 20 – 50%		
GENERAL USE:	Used as a bleaching agent, a refining agent for oils and fats, and as a hypo eliminant in photography. Used in the plastics and microelectronics industries.		
PRODUCT DESCRIPTION:	An inorganic peroxide solution. Synonyms for Hydrogen Peroxide include Dihydrogen Dioxide, Hydroperoxide, Albone and HloxyI.		
INFORMATION PROVIDED BY:	Brenntag Pacific, Inc. 5700 N.W. Front Avenue Portland, OR 97210	EMERGENCY PHONE NUMBERS	
For MSDS call:	PHONE: 503-242-0200	CHEMTREC:	800-424-9300
		CANUTEC:	613-996-6666

2. COMPOSITION & INFORMATION ON INGREDIENTS

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Hydrogen Peroxide	7722-84-1	Oxidizer; Corrosive; Lung toxin; IARC – Suspected Carcinogen	20 to 50%	1 ppm (A3)	None	1 ppm	None

NDA = No Data Available N/A = Not Applicable

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:	A clear, colorless liquid having a sharp odor. A strong oxidizer. Decomposition will release Oxygen, which will increase the explosive limits and the burning rate of flammable or combustible materials. The vapors, mists and liquid can cause severe irritation or burns to the eyes, skin and respiratory tract. Ingestion can cause severe damage to the gastrointestinal tract with possible stomach perforation. Ingestion of a large amount may cause convulsions, coma, possible cerebral edema and death. The NIOSH I.D.L.H. for Hydrogen Peroxide is: 75 ppm.
POTENTIAL HEALTH EFFECTS	
INHALATION:	Inhalation of vapors or mists may be severely irritating or corrosive to the nose, mouth, throat, mucous membranes and lungs. Symptoms of exposure may include sneezing, coughing, choking, chest pain, shortness of breath and impairment of lung function. Some of these effects may be delayed until several hours after exposure.
EYE CONTACT:	Exposure to the vapors, mists or liquid can cause severe eye irritation or burns. Symptoms of exposure may include tearing, redness, swelling, a painful burning sensation and blurred vision. Direct contact with the liquid may cause corneal damage and impairment of vision.
SKIN CONTACT:	Exposure to the mists or liquid can cause severe skin irritation or burns. Symptoms of exposure may include whitening or bleaching of the skin, swelling and eventually a painful tingling or burning sensation. Prolonged skin exposure may cause destruction of the dermis with impairment of the skin, at site of contact, to regenerate. No published data indicates this product is absorbed through the skin.
INGESTION:	Ingestion can cause severe irritation or burns to the mouth, throat and the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, tissue ulceration and possible stomach perforation. Ingestion of a large amount may be fatal.
CHRONIC:	Repeated exposure may cause bleaching of the hair and impairment of lung function. The IARC has classified Hydrogen Peroxide as a Group 3 carcinogen and the ACGIH as an A3 category "confirmed animal carcinogen with unknown relevance to humans". Any increased risk of cancer is dependent upon the duration of exposure and/or the amount ingested.

4. FIRST AID MEASURES

- INHALATION:** If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; use the Holger Nielsen method (back pressure-arm lift) or proper respiratory device. If breathing is difficult, give oxygen. Call a physician.
- EYE CONTACT:** In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention immediately.
- SKIN CONTACT:** In case of contact, immediately flush skin with plenty of clean running water for at least 15 minutes, while removing contaminated clothing and shoes. If burn or irritation occurs, call a physician.
- INGESTION:** If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person.
- NOTE TO PHYSICIANS:** The primary hazard of this product is the corrosivity effect on the eyes, skin and mucous membranes. If this product is ingested, it may be advisable to insert a gastric tube to relieve or prevent increased pressure that may result from the rapid evolution of Oxygen gas upon decomposition. Delayed pulmonary edema can occur several hours after initial exposure.

5. FIRE FIGHTING MEASURES

- Flashpoint and Method:** This product does not flash.
- Flammable Limits (in air, % by volume)** **Lower:** Not applicable **Upper:** Not applicable
- Autoignition Temperature:** Not applicable
- GENERAL HAZARD:** The Uniform Fire Code physical hazard classification for this product is: **Oxidizer, Class 2**; and the health hazard is: **Corrosive**. This product is not flammable, but thermal decomposition will release Oxygen, which will increase the explosive limits and the burning rate of flammable or combustible materials. This product may produce hazardous vapors, mists or decomposition products.
- FIRE FIGHTING INSTRUCTIONS:** **EXTINGUISHING MEDIA:** Flood with water.
Use a water spray or fog to cool the containers exposed to the heat of a fire.
- FIRE FIGHTING EQUIPMENT:** Fire fighters should wear full protective equipment, including self-contained breathing apparatus.
- HAZARDOUS COMBUSTION PRODUCTS:** When heated to dryness and decomposition, it emits Hydrogen Peroxide, Oxygen gas and water vapor.

6. ACCIDENTAL RELEASE MEASURES

- LAND SPILL:** Remove all combustible materials. Wearing recommended protective equipment and clothing, dike the spill and pick up the bulk of liquid using non-sparking tools, or absorb the liquid in sand or a non-combustible absorbent. Place in approved containers for disposal or satellite accumulation. **CAUTION: Oxidizer wastes are not to be mixed with any other wastes, including other oxidizer wastes.** Do not return this product to the original containers. Flush the spill area with water; collect the rinsates for disposal or sewer, as appropriate.
- WATER SPILL:** Wear recommended protective equipment and clothing if contact with hazardous material can occur. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. As appropriate, notify all downstream users of possible contamination.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: Below 38° C. (100° F.)

STORAGE PRESSURE: Ambient

GENERAL: Store in a cool, dry, well-ventilated area away from sources of high intensity heat and incompatible materials or products. Do not expose to direct sunlight. Store in vented containers. This product can be potentially "explosive", due to the rapid evolution of Oxygen gas, when contaminated with other chemicals, metals or even dirt. Avoid concentrating the Hydrogen Peroxide by the evaporation of the water. This product is a strong oxidizer and should be separated from all flammable or combustible products or materials, including wood.

Do not get this product in eyes, on skin or on clothing. Wear recommended personnel protective equipment when handling this product. Do not breathe vapors, mists or aerosols. Use only with adequate ventilation. Keep the container tightly closed when not in use. Wash thoroughly after handling this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL MEASURES: Use a local or general, mechanical exhaust ventilation system capable of maintaining emissions, in the work area, below the OSHA-PEL or ACGIH-TLV.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposures above the OSHA-PEL or ACGIH-TLV, but less than 10 ppm Hydrogen Peroxide, wear a NIOSH approved full facepiece or half mask air-purifying cartridge respirator equipped with a good particulate / mist cartridge, or a supplied air respirator.

NIOSH recommendations for exposures:

- Greater than 10 ppm, but less than 25 ppm, use a supplied air respirator;
- Greater than 25 ppm, but less than 50 ppm, use a full facepiece, continuous flow, supplied air respirator;
- Greater than 50 ppm, but less than 75 ppm, use a full facepiece supplied air respirator or self-contained breathing apparatus (SCBA);

EYES: Wear chemical goggles (recommended by ANSI Z87.1-1979), unless a full facapiece respirator is worn.

GLOVES: Wear Butyl Rubber, Nitrile, Viton, Responder, Tychem TK or Natural Rubber gloves when handling this product.

CLOTHING & EQUIPMENT: Wear a Butyl Rubber, Nitrile or Natural Rubber apron or full protective clothing when handling this product. An eyewash station and safety shower should be available in the work area.

FOOTWEAR: Wear Butyl Rubber, Nitrile or Natural Rubber boots.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless	Bulk Density (pounds/ft³):	Not applicable
Physical State:	Liquid	Vapor Pressure:	About 23 mm Hg @ 30° C.
Odor:	Sharp	Vapor Density (air=1):	No data available
Odor Threshold:	No data available	Evaporation Rate (n-Butyl Acetate=1):	Less than 1
Molecular Formula:	H ₂ O ₂ (in water)	VOC Content:	Not applicable
Molecular Weight:	34.02 (in water)	% Volatile:	100
Boiling Point:	Greater than 100° C. (212° F.)	Solubility in H₂O:	Complete
Freezing/Melting Point:	Less than 0° C. (32° F.)	Octanol/Water Partition Coefficient:	No data available
Specific Gravity:	1.069 to 1.195 @ 25° C.	pH (as is):	About (2.96-20%) to (1.34-50%)
Density (pounds/gallon):	8.92 to 9.97	pH (1% solution):	No data available

10. STABILITY AND REACTIVITY

GENERAL: This product is stable and hazardous polymerization will not occur.

CONDITIONS TO AVOID: Hot storage, above 38° C. (100° F.).

INCOMPATIBLE MATERIAL: Caustics and strong alkali, all metals and metal salts, other oxidizers and all oxidizable substances.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to dryness and decomposition, it emits Hydrogen Peroxide, Oxygen gas and water vapor.

SENSITIVITY TO MECHANICAL IMPACT: This product is not sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE: This product is not sensitive to static discharge.

11. TOXICOLOGICAL INFORMATION

Components: Hydrogen Peroxide
Eye Contact: No data available
Skin Contact: No data available
Oral Rat LD₅₀: 1,518 mg/kg (8 – 20% solution)
Dermal Rabbit LD₅₀: No data available
Inhalation Rat LC₅₀: 2 gm/m³/4 hours
Human Data: Oral Man LD₅₀: 1,429 mg/kg (30% solution)
Other Toxicological Data: Dermal Rat LD₅₀: 4,060 mg/kg (90% solution)
Carcinogenicity: Oral Mouse TD₀₁: 622 gm/kg/2 Years-Continuous; Tumorigenic – Carcinogenic by RTECS criteria; Gastrointestinal - Tumors (30% solution)
Teratogenicity: No data available
Mutagenicity: Human DNA Damage; lymphocyte: 9 umol/Liter
Synergistic Products: None reported
Target Organs: Eyes, Skin, Mucous membranes, Lungs, Gastrointestinal tract & Central Nervous System
Medical Conditions Aggravated By Exposure: Skin, Respiratory or Gastrointestinal disorders

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:
 This product is completely soluble in water and can affect the pH of water. No specific environmental fate data is available, but it is expected to readily break down to Oxygen and water, if introduced into the environment.
ENVIRONMENTAL CONSIDERATIONS:
 The aquatic toxicity for this product has not been determined.

13. DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATION: Ignitable Waste
U.S. EPA WASTE NUMBER/DESCRIPTION: D001
 If this material is disposed of as shipped, it meets the criteria of a hazardous waste as defined under 40 CFR 261 due to its ignitability. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous liquid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage, and disposal facility, by incineration.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Hydrogen peroxide, aqueous solutions
Hazard Class: 5.1 (8) **UN Number:** UN2014 **Packing Group:** II
Primary Label: Oxidizer **Subsidiary Label(s):** Corrosive
Primary/Subsidiary Placards: Oxidizer / Corrosive
DOT Reportable Quantity (RQ): Not listed **RQ for Product:** Not applicable
Marine Pollutant: No
2004 North American Emergency Response Guidebook No.: 140
TDG PROPER SHIPPING NAME: HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Hazard Class: 5.1 (8) **UN Number:** UN2014 **Packing Group:** II
Primary Label: Oxidizer **Subsidiary Label(s):** Corrosive
Primary/Subsidiary Placards: Oxidizer
TDG Reportable Quantity (RQ):[#] At least 50 kg or 50 liters
TDG Schedule XII: Not listed
Regulated Limit (RL):^{}** Not listed **RL for Product:** Not applicable
Other Shipping Information: See page 6, section 16 for additional information on shipping Hydrogen Peroxide, aqueous solutions.

[#] Canadian Transportation of Dangerous Goods Regulations (TDGR), Part IX, Table I, Quantities or levels for Immediate Reporting: releases of reportable quantities, RQ, that meet the definition of a "dangerous occurrence" (a threat to life, health, property, or the environment) must be reported to the appropriate authorities as outlined in TDGR 9.13(1) and 9.14(1).

^{**} Reporting to Environment Canada is required for any releases exceeding the regulated limits, RL, of 9.2 materials (primary or secondary). The regulated limits are found in Schedule XIII of the TDGR.

15. REGULATORY INFORMATION

COMPONENTS: Hydrogen Peroxide
OSHA Target Organs: Eyes, Skin, Mucous membranes, Lungs, Gastrointestinal tract & Central Nervous System

Carcinogenic Potential:
 Regulated by OSHA: No
 Listed on NTP Report: No
 Listed by IARC: Yes
 IARC Group: Group 3
 ACGIH Appendix A: Yes (A3)
 A1 Confirmed Human: Not applicable
 A2 Suspected Human: Not applicable

U.S. EPA Requirements

Release Reporting
CERCLA (40 CFR 302)
 Listed Substance: Not listed
 Reportable Quantity: Not applicable
 Category: Not applicable
 RCRA Waste No.: Not applicable
Unlisted Substance: Yes
 Reportable Quantity: 100 pounds
 Characteristic: Ignitability
 RCRA Waste No.: D001

SARA TITLE III

Section 302 & 303 (40 CFR 355):
 Listed Substance: Not listed
 Reportable Quantity: Not applicable
 Planning Threshold: Not applicable

Section 311 & 312 (40 CFR 370):
 Hazard Categories (product): Fire: Y Sudden Release of Pressure: N Reactive: N Acute Health: Y Chronic Health: N
 Planning threshold: 10,000 pounds

Section 313 (40 CFR 372):
 Listed Toxic Chemical: Not listed
 Reporting Threshold: Not applicable

U.S. TSCA Status

Listed (40 CFR 710): Yes

State Regulations

State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):
 Carcinogen: No
 Reproductive Toxin: No

Other Regulations

State Right To Know Laws: MA, NJ

Canadian Regulations

Product Information:
 Controlled Product: Yes
 WHMIS Hazard Symbols: Oxidizing Material; Corrosive Material; Dangerously Reactive Material
 WHMIS Class & Division: C; E; F

Ingredient Information:
 IDL Substance: Yes
 DSL or NDSL Lists: DSL

16. OTHER INFORMATION

EPA Registration number: Not applicable

Approved Product Uses: Not applicable

Special Notes:

This product does not contain any substances, which the State of California has found to cause cancer and/or birth defects or other reproductive harm.

Additional DOT Notes:

49 CFR 172.505 (d) – "Hazardous materials that possess secondary hazards may exhibit secondary placards that correspond to the placards described in this part, even when not required by this part (see also 172.519 (b) (4) of this subpart)."

All containers holding a Hydrogen Peroxide solution that meets the DOT requirements as a hazardous material will have vented bungs and orientation arrows on two opposite sides that show which end must be up.

Special Instructions:

Store Hydrogen Peroxide 20 - 50% in a cool, dry, well-ventilated area, out of direct sunlight and away from all incompatible materials or products.

MSDS Revision Information: Information Revised This Issue Date: New product MSDS.

Form Revision made 2/03/06

MSDS Distributed by: Brenntag Pacific, Inc.

NW Environmental Department

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Date Prepared: September 11, 2008

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