



Hydrogen Peroxide, 50% (All Grades)

Material Safety Data Sheet

Arkema Inc.

1 PRODUCT AND COMPANY IDENTIFICATION

Basic Chemicals
2000 Market Street

Philadelphia, PA 19103

Information Telephone Numbers

Product Information

EMERGENCY PHONE NUMBERS:

Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887

Medical: Rocky Mountain Poison Control Center
(866) 767-5089 (24Hrs)

Phone Number

215-419-7704

Available Hrs

8:30 a.m. - 5:00 p.m.
(Eastern)

Product Name Hydrogen Peroxide, 50% (All Grades)

Product Synonym(s)

Chemical Family Peroxide

Chemical Formula H₂O₂

Chemical Name Hydrogen Peroxide Solution, 50%

EPA Reg Num

Product Use

IN CANADA, IN CASE OF EMERGENCY CALL:
CANUTEC 613-996-6666

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical Wt. %	OSHA
Hydrogen peroxide	7722-84-1	50%	Y
Water	7732-18-5	50%	N

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

The components of this product are all on the TSCA Inventory list.

3 HAZARDS IDENTIFICATION

Emergency Overview

Water white liquid with slightly sharp odor.

DANGER!

CAUSES EYE BURNS. MAY CAUSE BLINDNESS.

CAUSES SKIN BURNS.

CAUSES RESPIRATORY TRACT BURNS.

HARMFUL IF SWALLOWED.

STRONG OXIDIZER.

CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR EXPLOSIVE DECOMPOSITION.

Potential Health Effects

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, it is considered to be moderately toxic if swallowed, practically non-toxic if absorbed



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through skin, slightly toxic if inhaled, and corrosive to eyes and skin. Inhalation of high concentrations of vapor or mist may cause severe irritation of the eyes, nose and upper respiratory tract with cough, chest discomfort and, in severe cases, pulmonary edema (accumulation of fluid in the lungs). Skin contact with concentrated liquid for a short period of time may cause a temporary whitening or bleaching of the skin. Prolonged or repeated contact with skin may cause severe irritation or burns characterized by a tingling sensation, redness, swelling and possible destruction of the dermis with ulceration. If swallowed, this material may cause irritation, burns or perforation of the gastrointestinal tract including the stomach and intestines. Symptoms of injury may include nausea, vomiting, diarrhea, abdominal pain, bleeding or tissue ulceration.

4 FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Get medical attention.

IF ON SKIN, immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes.

IF SWALLOWED, do NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

5 FIRE FIGHTING MEASURES

Fire and Explosive Properties

Auto-Ignition Temperature	NA	
Flash Point	None	Flash Point Method
Flammable Limits- Upper	NA	
Lower	NA	

Extinguishing Media

Use water spray, water fog.

Fire Fighting Instructions

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Fire and Explosion Hazards

Solutions above 65% are especially hazardous as they do not contain enough water to remove the heat of decomposition by evaporation. Avoid breathing fumes from fire exposed material.

6 ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Stop the leak, if possible. Ventilate the space involved. Flush with plenty of water. Combustible materials exposed to hydrogen peroxide should be rinsed immediately with large amounts of water to ensure that all the hydrogen peroxide is removed. Residual hydrogen peroxide which is allowed to dry on organic materials such as paper, fabrics, cotton, leather, wood, or other combustibles can cause the material to ignite and result in a fire. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.



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7 HANDLING AND STORAGE

Handling

Do not get in eyes, on skin or on clothing. Do not breathe mist. Do not taste or swallow. Wash thoroughly after handling. Use only with adequate ventilation. Avoid contamination. Keep container closed.

Storage

Store separate from acids, alkalis, reducing agents, combustibles.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Eye / Face Protection

Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

Skin Protection

Neoprene, Polyvinyl chloride, Butyl rubber Gloves should be worn when handling this material. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash skin thoroughly after handling.

Respiratory Protection

Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Other Protective Equipment

Rubber boots with neoprene or pvc soles. Do NOT wear leather boots. Note: As the water content of hydrogen peroxide evaporates, cotton, rayon, and wool fibers are particularly subject to spontaneous combustion. Where there is significant risk of sudden splash or spray, it is advised that an apron or rubber suit be worn. Any contaminated clothing, including gloves, shoes, aprons, coveralls, etc., should be removed immediately and thoroughly flushed with water to eliminate any traces of hydrogen peroxide before cleaning and reuse.

Airborne Exposure Guidelines for Ingredients

Exposure Limit

Value

Hydrogen peroxide

ACGIH TWA	-	1 ppm 1.4 mg/m ³
OSHA TWA PEL	-	1 ppm 1.4 mg/m ³

-Only those components with exposure limits are printed in this section.

-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

-ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

-WEEL-AIHA Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic skin reactions.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Water white liquid with slightly sharp odor.
pH	NE
Specific Gravity	1.196 @ 20 C
Vapor Pressure	18.3 @ 20 C
Vapor Density	1.0
Melting Point	NE
Freezing Point	-52 C (-62 F)
Boiling Point	114 C (237 F)
Solubility In Water	Complete
Percent Volatile	100%
Molecular Weight	34.01

10 STABILITY AND REACTIVITY**Stability**

This material is chemically stable under normal and anticipated storage and handling conditions.

Incompatibility

Material decomposes with the potential to produce a rupture of unvented closed containers. Contact with metals, metal ions, organics, wood, dust, shavings, dry vegetables may cause decomposition.

Hazardous Decomposition Products

This material decomposes if contaminated, causing fire and possible explosions. Oxygen can be liberated at temperatures above ambient.

11 TOXICOLOGICAL INFORMATION**Toxicological Information**

Data on this material and/or its components are summarized below. Hydrogen Peroxide Single exposure (acute) studies indicate that this material is moderately toxic if swallowed (rat LD50 805 mg/kg; 70% solution), practically non-toxic if absorbed through skin (rabbit LD50 >6,500 mg/kg; 70% solution), slightly toxic if inhaled (no mortality in rats at 170 mg/m³ for 4 hours), and corrosive to rabbit eyes and skin. No skin allergy was observed in guinea pigs following repeated exposure. Solutions are commonly used for disinfecting wounds, bleaching hair or as a mouth wash and generally do not show adverse skin reactions. Accidental ingestion by children has resulted in death from lung edema, stomach erosions and gas distention and burns to the throat and esophagus. Eye and throat irritation and bleaching of hair have been reported by workers exposed to this material in the atmosphere.

Several studies have been conducted by administering material in the drinking water of mice and rats. The primary findings were irritation of the gastric mucous. Repeated inhalation exposure of rats and mice caused nasal irritation without notable adverse effects on the lining of the upper respiratory system. Repeated inhalation exposure of dogs resulted in upper respiratory tract irritation and emphysematous changes in the lungs. Generally, long-term oral dosing caused no adverse effects other than erosion of the stomach lining from direct application of the test material. Several studies have shown an increase in gastrointestinal tract tumors in mice and rats following long-term exposure in the drinking water. Concentrations less than 1% do not promote gastrointestinal tumors. The U.S. Federal Drug Administration has concluded that there is insufficient evidence of carcinogenicity and the International Agency for Research on Cancer (IARC) has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). Genetic changes were observed in tests using bacteria and animal cells, but not in animals.



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12 ECOLOGICAL INFORMATION

Ecotoxicological Information

Data on this material and/or its components are summarized below.

Hydrogen Peroxide

This material is highly toxic to marine algae (LC50 0.85 mg/l), moderately toxic to Daphnia magna (EC50 7.7 mg/l) and Daphnia pulex (LC50 2.4 mg/l). It is slightly toxic to coho salmon (LC50 10 mg/l), channel catfish (LC50 37.4 mg/l), golden orfe (LC50 35 mg/l), fathead minnow (LC50 16.4 mg/l), snail (LC50 17.7 mg/l) and bacteria (EC50 30 mg/l).

Chemical Fate Information

No data are available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal

Consult with environmental engineer or professional to determine if neutralization is appropriate and for handling procedures for residual materials. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14 TRANSPORT INFORMATION

DOT Name	Hydrogen Peroxide, Aqueous Solution,
DOT Technical Name	
DOT Hazard Class	5.1
UN Number	UN 2014
DOT Packing Group	PG II
RQ	
DOT Special Information	Subsidiary (8) Non-Bulk packages must have Class 5.1 and Class 8 labels. Bulk packages require Class 5.1 Oxidizer placards.

15 REGULATORY INFORMATION

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health	Y	Fire	Y
Delayed (Chronic) Health	N	Reactive	Y
		Sudden Release of Pressure	N

The components of this product are all on the TSCA Inventory list.

Ingredient Related Regulatory Information:

SARA Reportable Quantities	CERCLA RQ	SARA TPQ
Hydrogen peroxide	NE	1000 LBS
Water	NE	



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SARA Title III, Section 302

This product does contain chemical(s), as indicated below, currently on the Extremely Hazardous Substance List, Section 302, SARA Title III. See Section 2 for further details regarding concentrations and registry numbers.

Hydrogen peroxide

Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

Hydrogen peroxide

New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right-to-Know Substances List.

Hydrogen peroxide

Pennsylvania Environmental Hazard

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Environmental Hazard List.

Hydrogen peroxide

Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List.

Hydrogen peroxide

16 OTHER INFORMATION

Revision Information

Revision Date	12 OCT 2004	Revision Number	20
Supersedes Revision Dated	11-OCT-2004		

Revision Summary

Section 16 for Canada

Key

NE= Not Established NA= Not Applicable (R) = Registered Trademark

Miscellaneous

This MSDS covers the following grades of H₂O₂:

Albone; Alb; Alb A; Alb CG; MS; Alb MT; Alb LCL; Alb LC; AL-1; AL-2; AL-3; AL-4; A; Per; Perone; FG; ASG; AG; CG; Pure; M; DS; EG; KASTONE 50; Valsterane; Peroxal; CLG; SEG

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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