

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/11/2009

Reviewed on 04/01/2009

1 Identification of substance:

Product details:

Product name: Hydrogen peroxide, 29.0-32.0%

Stock number: 33323

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Hydrogen peroxide (CAS# 7722-84-1): 29.0-32.0%

Water (CAS# 7732-18-5): balance

Identification number(s):

EINECS Number: 231-765-0

Index number: 008-003-00-9

3 Hazards identification

Hazard description:



Xn Harmful

Information pertaining to particular dangers for man and environment

R 22 Harmful if swallowed.

R 41 Risk of serious damage to eyes.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	2	Health (acute effects) = 2
FIRE	0	Flammability = 0
REACTIVITY	3	Reactivity = 3

GHS label elements



Danger

2.13/2 - May intensify fire; oxidizer.



Danger

3.1/3 - Toxic if swallowed.



Danger

3.2/1C - Causes severe skin burns and eye damage.

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

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Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

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 or doctor/physician.

Specific treatment (see label).

Rinse mouth.

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO₂, powder or water spray.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

General information Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents Water spray

Special hazards caused by the material, its products of combustion or resulting gases:

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Absorb with liquid-binding material.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

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Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from flammable substances.

Store away from reducing agents.

Store away from metals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Hydrogen peroxide

	ppm
ACGIH TLV	1
Belgium TWA	1
Denmark TWA	1
Finland TWA	1; 3-STEL
France TWA	1
Germany MAK	1
Ireland TWA	1; 2-STEL
Korea TLV	1
Netherlands MAC-TGG	1
Poland TWA	1.5 mg/m ³ ; 4 mg/m ³ -STEL
Norway TWA	1
Sweden TWA	1
Switzerland MAK-W	1; 2-STEL
United Kingdom TWA	1; 2-STEL
OSHA PEL	1

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Pungent
Change in condition	
Melting point/Melting range:	-41°C (-42°F)
Boiling point/Boiling range:	150.2°C (302°F)
Sublimation temperature / start:	Not determined
Flash point:	Not determined
Ignition temperature:	Not determined

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Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	1.11 g/cm ³ (approx)
Solubility in / Miscibility with Water:	Fully miscible

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Reducing agents

Alkali metals

Light

Dangerous reactions

Reacts with reducing agents

Reacts with flammable substances

Dangerous products of decomposition: Oxygen

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	910 mg/kg (rat)
	LDLo	9 mL/kg (child)
		8500 mg/kg (child)

Primary irritant effect:

on the skin:

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Mutagenic effects have been observed on tests with bacteria.

Subacute to chronic toxicity:

Hydrogen peroxide is highly irritating to skin, eyes and mucous membranes. The eyes in particular are especially sensitive. Irritation is a function of concentration and solutions over 30% may easily cause skin blisters.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - convulsions or effect on seizure threshold.

Lungs, Thorax, or Respiration - cyanosis.

Lungs, Thorax, or Respiration - respiratory stimulation.

Brain and Coverings - other degenerative changes.

Peripheral Nerve and Sensation - spastic paralysis with or without sensory change.

Blood - hemorrhage.

Blood - pigmented or nucleated red blood cells.

Blood - changes in leukocyte (WBC) count.

Gastrointestinal - peritonitis.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss.

Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

IARC-3: Not classifiable as to carcinogenicity to humans.

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

12 Ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

DOT regulations:

Hazard class:	5.1
Identification number:	UN2014
Packing group:	II
Proper shipping name (technical name):	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Label	oxidized

Land transport ADR/RID (cross-border)



ADR/RID class:	5.1 (OC1) Oxidizing substances
Danger code (Kemler):	58
UN-Number:	2014
Packaging group:	II
Description of goods:	2014 HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Maritime transport IMDG:



IMDG Class:	5.1
UN Number:	2014
Label	5.1+8
Packaging group:	II
Proper shipping name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

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Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:	5.1
UN/ID Number:	2014
Label	5.1+8
Packaging group:	II
Proper shipping name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

UN "Model Regulation": UN2014, HYDROGEN PEROXIDE, AQUEOUS SOLUTION, 5.1 (8), II

15 Regulations

Product related hazard informations:

Hazard symbols:

Xn Harmful

Risk phrases:

22 Harmful if swallowed.

41 Risk of serious damage to eyes.

Safety phrases:

17 Keep away from combustible material.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

28 After contact with skin, wash immediately with plenty of water

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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