



SAFETY DATA SHEET

Hydrogen Peroxide 50%



Date : 7th February 2018

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Hydrogen Peroxide 50%

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Acute Toxicity (Oral) – Category 4

Acute Toxicity (Inhalation) Category 4

Skin Corrosion/Irritation – Category 2

Sub-category B Serious Eye Damage/Eye Irritation – Category 1

Specific target organ toxicity (single exposure) – Category 3

Oxidizing Liquids – Category 2

GHS LABEL ELEMENTS



SIGNAL WORD

DANGER

HAZARD STATEMENTS

Causes serious eye damage Harmful if

swallowed Harmful if inhaled

May cause respiratory irritation

Causes skin irritation

May cause or intensify fire; oxidizer

PRECAUTIONARY STATEMENTS

Use only outdoors or in a well-ventilated area

Avoid breathing mist/vapors/spray

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

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

Take any precaution to avoid mixing with combustibles/flammables

Keep/Store away from clothing/flammable materials/combustibles

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. IF ON SKIN: Wash with plenty of water.

If skin irritation occurs: Get medical advice/ attention
Take off all contaminated clothing and wash it before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell Rinse mouth
In case of fire: Use water for extinction

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	EC Number	Wt %
Hydrogen Peroxide	7722-84-1	231-765-0	50
Water	7732-18-5	231-791-2	50

4. FIRST AID MEASURES

EYES: Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

SKIN: Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. See a medical doctor immediately.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTES TO MEDICAL DOCTOR: Hydrogen peroxide at these concentrations 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.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Flood with water.

FIRE / EXPLOSION HAZARDS: Product is non-combustible. On decomposition releases oxygen which may intensify fire.

FIRE FIGHTING PROCEDURES: Any tank or container surrounded by fire should be flooded with water for cooling. Wear full protective clothing and self-contained breathing apparatus.

FLAMMABLE LIMITS: Non-combustible
SENSITIVITY TO IMPACT: No data available
SENSITIVITY TO STATIC DISCHARGE: No data available

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Dilute with a large volume of water and hold in a pond or diked area until hydrogen peroxide decomposes. Hydrogen peroxide may be decomposed by adding sodium metabisulfite or sodium sulfite after diluting to about 5%. Dispose according to methods outlined for waste disposal.

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.

7. HANDLING AND STORAGE

HANDLING: Wear chemical splash-type monogoggles and full-face shield, impervious clothing, such as rubber, PVC, etc., and rubber or neoprene gloves and shoes. Avoid cotton, wool and leather. Avoid excessive heat and contamination. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible container rupture. Hydrogen peroxide should be stored only in vented containers and transferred only in a prescribed manner. Never return unused hydrogen peroxide to original container, empty drums should be triple rinsed with water before discarding. Utensils used for handling hydrogen peroxide should only be made of glass, stainless steel, aluminum or plastic.

STORAGE: Store drums out of direct sunlight and away from combustibles.

COMMENTS: VENTILATION: Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into the work environment.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	NIOSH
Hydrogen Peroxide	TLV (TWA): 1 ppm	PEL (TWA) : 1 ppm PEL (TWA) : 1.4 mg/m ³	IDLH : 75 ppm REL (TWA) : 1 ppm REL (TWA) : 1.4 mg/m ³

ENGINEERING CONTROLS : Ventilation should be provided to minimize the release of hydrogen peroxide vapors and mists into the work environment. Spills should be minimized or confined immediately to prevent release into the work area. Remove contaminated clothing immediately and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE : Use chemical splash-type monogoggles and a full-face shield made of polycarbonate, acetate, polycarbonate/acetate, PETG or thermoplastic.

RESPIRATORY : If concentrations in excess of 10 ppm are expected, use self- contained breathing apparatus (SCBA), or other approved atmospheric-supplied respirator (ASR) equipment (e.g., a full-face airline respirator (ALR)). DO NOT use any form of air-purifying respirator (APR) or filtering facepiece (AKA dust mask), especially those containing oxidizable sorbants such as activated carbon.

PROTECTIVE CLOTHING : For body protection wear impervious clothing such as an approved splash protective suit made of SBR Rubber, PVC (PVC Outershell w/Polyester Substrate), Gore-Tex (Polyester trilaminate w/Gore-Tex), For foot protection, wear approved boots made of NBR, PVC, Polyurethane, or neoprene. Overboots made of Latex or PVC, as well as firefighter boots are also permitted. DO NOT wear any form of boot or overboots made of nylon or nylon blends. DO NOT use cotton, wool or leather, as these materials react RAPIDLY with higher concentrations of hydrogen peroxide. Completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

GLOVES : For hand protection, wear approved gloves made of nitrile, PVC, or neoprene. DO NOT use cotton, wool or leather for these materials react RAPIDLY with higher concentrations of hydrogen peroxide. Thoroughly rinse the outside of gloves with water prior to removal. Inspect regularly for leaks.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR	: Slightly pungent
APPEARANCE	: Clear, colorless liquid
AUTOIGNITION TEMPERATURE	: Non-combustible
FLAMMABILITY LIMIT IN AIR	
Lower flammable limit (LFL)	: Not applicable
Upper flammable limit (UFL)	: Not applicable
BOILING POINT	: 114°C/237°F
COEFFICIENT OF OIL / WATER	: Not available
DENSITY / WEIGHT PER	: Not available
EVAPORATION RATE	: > 1 (Butyl Acetate = 1)
FLASH POINT	: Non-combustible
FREEZING POINT	: -33°C/-27°F
ODOR THRESHOLD	: Not available
OXIDIZING PROPERTIES	: Strong oxidizer
PERCENT VOLATILE	: 100
pH	: 1.0 – 3.0
SOLUBILITY IN WATER	: 100 %
SPECIFIC GRAVITY	: 1.19 @ 25 °C
VAPOR DENSITY	: Not available (Air = 1)
VAPOR PRESSURE	: 23 mmHg @ 30°C

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID

: Excessive heat or contamination could cause product to become unstable.

STABILITY

: Stable (heat and contamination could cause decomposition)

POLYMERIZATION

: Will not occur

INCOMPATIBLE MATERIALS

: Reducing agents, wood, paper and other combustibles, iron and other heavy metals, copper alloys and caustic.

HAZARDOUS DECOMPOSITION PRODUCTS

: Oxygen which supports combustion.

COMMENTS

: Materials to Avoid: Dirt, organics, cyanides and combustibles such as wood, paper, oils, etc.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS : 50% hydrogen peroxide: Extremely irritating/corrosive (rabbit) [FMC Study Number: I83-748]

SKIN EFFECTS : 50% hydrogen peroxide: Mildly irritating after 4-hour exposure (rabbit) [FMC Study Number: I83-747]

DERMAL LD50 : 50% hydrogen peroxide: > 2,000 mg/kg (rabbit) [FMC Study Number: I83-746]

ORAL LD50 : 50% hydrogen peroxide: 1,193 mg/kg (rat) [FMC Study Number: I83-745]

INHALATION LC50 : 50% hydrogen peroxide: > 0.17 mg/L (rat) [FMC Study Number: I89-1080]

TARGET ORGANS : Eye, skin, nose, throat, lungs

ACUTE EFFECTS FROM OVEREXPOSURE : Severe irritant/corrosive to eyes, skin and gastrointestinal tract. May cause irreversible tissue damage to the eyes including blindness. Inhalation of mist or vapors may be severely irritating to nose, throat and lungs.

CHRONIC EFFECTS FROM OVEREXPOSURE : The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' (A3).

CARCINOGENICITY:

Chemical Name	IARC	NTP	OSHA	Other
Hydrogen Peroxide	Group 3	Not listed	Not listed	(ACGIH) Listed (A3, animal carcinogen)

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

Fish <i>Leuciscus idus</i> 72-hour LC50	= 35 mg/L
Fish <i>Pimephales promelas</i> 96-hour LC50	= 16.4 mg/L
<i>Daphnia magna</i> 24-hour EC50	= 7.7 mg/L
<i>Daphnia pulex</i> 48-hour EC50	= 2.4 mg/L
Algae <i>Skeletonema costatum</i> 72-hour EC50	= 1.38 mg/L
<i>Daphnia magna</i> 21-day NOEC	= 0.63 mg/L

For more information refer to ECETOC "Joint Assessment of Commodity Chemicals No. 22, Hydrogen Peroxide." ISSN-0773-6339, January 1993

CHEMICAL FATE INFORMATION : Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Hydrogen peroxide half-life in freshwater ranged from 8 hours to 20 days, in air from 10-20 hours and in soils from minutes to hours depending upon microbiological activity and metal contaminants.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD : An acceptable method of disposal is to dilute with a large amount of water and allow the hydrogen peroxide to decompose followed by discharge into a suitable treatment system in accordance with all regulatory agencies. The appropriate regulatory agencies should be contacted prior to disposal.

14. TRANSPORT INFORMATION

UN RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS

PROPER SHIPPING NAME	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide. (stabilized as necessary)
PRIMARY HAZARD CLASS / DIVISION	:	5.1 (Oxidizer)
SUBSIDIARY RISK	:	8
UN NUMBER	:	UN 2014
UN PACKING GROUP	:	II
LABEL(S)	:	Oxidizer + Corrosive
PLACARD(S)	:	5.1 (Oxidizer) + Corrosive

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

PROPER SHIPPING NAME	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS with not less than 20%, but not more than 60% hydrogen peroxide.
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**INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) /
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)**

PROPER SHIPPING NAME : HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS
with not less than 20% but not more than 40% hydrogen
peroxide. (stabilized as necessary)*

(* Air regulations permit shipment of Hydrogen Peroxide (20 - 40% by weight) in unvented containers for Air Cargo Only aircraft, as well as for Passenger and Cargo aircraft. HOWEVER, all TPL Hydrogen Peroxide containers are vented and therefore, air shipments of TPL H₂O₂ is not permitted. IATA air regulations state that venting of packages containing oxidizing substances is not permitted for air transport.

OTHER INFORMATION:

Protect from physical damage. Keep drums in upright position. Do not store drum on wooden pallets.

15. REGULATORY INFORMATION

INTERNATIONAL LISTINGS

Hydrogen peroxide : China : Listed
Japan (ENCS) : (1)-419
Korea : KE-20204
Philippines (PICCS : Listed

HAZARD AND RISK PHRASE DESCRIPTIONS:

EC Symbols : O (Oxidizer)
C (Corrosive)
Xn (Harmful)

EC Risk Phrases : R5 (Heating may cause an explosion.)
R8 (Contact with combustible material may cause fire)
R20/22 (Harmful by inhalation and if swallowed.)
R35 (Causes severe burns.)

16. OTHER INFORMATION

NFPA

Health	3
Flammability	0
Reactivity	1
Special	OX

SPECIAL = OX (Oxidizer)

NFPA (National Fire Protection Association)

Degree of Hazard Code:

4 = Extreme

3 = High

2 = Moderate

1 = Slight

0 = Insignificant

NOTE: NFPA Reactivity is 3 - when greater than 52%

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