

# SAFETY DATA SHEET

## Hydrogen Peroxide 50% Standard



Date : 24<sup>th</sup> August 2016

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Hydrogen Peroxide 50% Standard

**ALTERNATE PRODUCT NAME(S):** -

**MANUFACTURER**

THAI PEROXIDE CO., LTD.

70 Moo 4, Sudbantad Road, T. Taldiew

A. Kaeng Khoi, Saraburi, 18110, Thailand

Tel no. (66 36) 240-210

Fax no. (66 36) 240-211

**EMERGENCY TELEPHONE NUMBER**

(66 36) 240-210

### 2. HAZARDS IDENTIFICATION

#### GHS CLASSIFICATION

Acute Toxicity (Oral) – Category 4

Acute Toxicity (Inhalation) – Category 4

Skin Corrosion/Irritation – Category 1B

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 severe skin burns and eye damage

Harmful if swallowed

Harmful if inhaled  
May cause respiratory irritation  
May intensify fire; oxidizer

### PRECAUTIONARY STATEMENTS

Avoid breathing vapours  
Wear protective gloves/protective clothing/eye protection/face protection.  
Keep away from heat/sparks/open flames/hot surfaces – No smoking  
Store in a well ventilated place. Keep cool. Store locked up  
Do not eat, drink or smoke when using this product  
Rinse immediately contaminated clothing and skin with plenty of water before removing clothes  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF ON SKIN: Remove/Take off immediately all contaminated clothing. Wash with soap and water. Wash contaminated clothing before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

---

### 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
Hydrogen Peroxide	1 ppm (TWA)	1 ppm (PEL) 1.4 mg/m <sup>3</sup> (PEL)

**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

<b>ODOR:</b>	Odorless
<b>APPEARANCE:</b>	Clear, colorless liquid
<b>AUTOIGNITION TEMPERATURE:</b>	Non-combustible
<b>BOILING POINT:</b>	114°C/237°F
<b>COEFFICIENT OF OIL / WATER:</b>	Not available
<b>DENSITY / WEIGHT PER VOLUME:</b>	Not available
<b>EVAPORATION RATE:</b>	> 1 (Butyl Acetate = 1)
<b>FLASH POINT:</b>	Non-combustible
<b>FREEZING POINT:</b>	-52°C/-62°F
<b>ODOR THRESHOLD:</b>	Not available
<b>OXIDIZING PROPERTIES:</b>	Strong oxidizer
<b>PERCENT VOLATILE:</b>	100
<b>pH:</b>	<= 5
<b>SOLUBILITY IN WATER:</b>	100 %
<b>SPECIFIC GRAVITY:</b>	1.19 @ 20°C/4°C
<b>VAPOR DENSITY:</b>	Not available (Air = 1)
<b>VAPOR PRESSURE:</b>	18.3 mmHg @ 30°C
<b>COMMENTS:</b>	
pH (1% solution): 5.0 - 6.0	

---

## 10. STABILITY AND REACTIVITY

<b>CONDITIONS TO AVOID:</b>	Excessive heat or contamination could cause product to become unstable.
<b>STABILITY:</b>	Stable (heat and contamination could cause decomposition)
<b>POLYMERIZATION:</b>	Will not occur
<b>INCOMPATIBLE MATERIALS:</b>	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**

**LD<sub>50</sub> Oral** 50% solution: LD<sub>50</sub> > 225 mg/kg bw (rat)  
35 % solution: LD<sub>50</sub> 1193 mg/kg bw (rat)

**LD<sub>50</sub> Dermal** 35% solution: LD<sub>50</sub> > 2000 mg/kg bw (rabbit)

**LC<sub>50</sub> Inhalation** 50% solution: LC<sub>50</sub> > 170 mg/m<sup>3</sup> (rat) (4-hr)

Hydrogen Peroxide vapors: LC<sub>0</sub> 9400 mg/m<sup>3</sup> (mouse) (5 - 15 minutes)

Hydrogen Peroxide vapors: LC<sub>50</sub> > 2160 mg/m<sup>3</sup> (mouse)

**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	Not listed	Not listed	Not listed	(ACGIH) Listed (A3, animal carcinogen)

---

**12. ECOLOGICAL INFORMATION**

**ECOTOXICOLOGICAL INFORMATION:**

Channel catfish 96-hour LC<sub>50</sub> = 37.4 mg/L  
Fathead minnow 96-hour LC<sub>50</sub> = 16.4 mg/L  
Daphnia magna 24-hour LC<sub>50</sub> = 7.7 mg/L  
Daphnia pulex 48-hour LC<sub>50</sub> = 2.4 mg/L

Freshwater snail 96-hour LC<sub>50</sub> = 17.7 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

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

#### INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

<b>PROPER SHIPPING NAME:</b>	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS with not less than 20%, but not more than 60% hydrogen peroxide.
------------------------------	---

**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 H<sub>2</sub>O<sub>2</sub>  
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. Drums should not be stacked  
in transit. 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%

---

Thai Peroxide believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use are beyond the control of Thai Peroxide, Thai Peroxide expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.