

Libox Chem (India) Pvt. Ltd.

Safety Data Sheet (SDS) - Potassium Permanganate

1. IDENTIFICATION.

1.1 Product Identifier used on the label

Name: POTASSIUM PERMANGANATE
POTASSIUM PERMANGANATE (TECHNICAL)
POTASSIUM PERMANGANATE (PURE)
POTASSIUM PERMANGANATE (FREE FLOWING)

1.2 Other means of identification

Synonyms: Permanganic acid potassium salt, Chameleon mineral, Condy's Crystal, Permanganate of potash

1.3 Recommended use of the chemical.

Potassium permanganate is an oxidant recommended for applications that require a strong oxidant.

1.4 Identification of the company.

Company: Libox Chem (India) Pvt. Ltd.
Address: 112, Kundaim Industrial Estate,
City: Kundaim
State: Goa
Telephone: +91 832 2396415
Fax: +91 832 2396415
Web: www.liboxgoa.com
E-mail: sales@liboxgoa.com

1.5 Emergency telephone number: +91 832 2396415 (9am to 5 pm – Indian Time)

2. HAZARDS IDENTIFICATION.

Globally Harmonized system (GHS) of Classification of the substance

Oxidizing solid, Category 2
Acute toxicity, Category 4
Aquatic toxicity (acute), Category 1
Aquatic toxicity (chronic), Category 1

Signal Word

DANGER



HAZARD STATEMENTS

H272	MAY INTENSIFY FIRE; OXIDIZER
H302	HARMFUL IF SWALLOWED
H314	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE
H410	VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

PRECAUTIONARY STATEMENTS

P102	KEEP OUT OF REACH OF CHILDREN.
P220	KEEP/STORE AWAY FROM CLOTHING / COMBUSTIBLE MATERIALS
P264	WASH HANDS AND FACE THOROUGHLY AFTER HANDLING
P270	DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT
P273	AVOID RELEASE TO THE ENVIRONMENT
P303 + P361 + P353	IF ON (SKIN) OR HAIR: REMOVE / TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/SHOWER.
P305 + P351 + P338	IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING.

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3. COMPOSITION OF/INFORMATION ON INGREDIENTS.

Substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC:

Index no.	CAS No.	EC No.	Registration Number (Pre- Reg. Number)	Name	Concentration	Symbols	R Phrase *
025-002-00-9	7722-64-7	231-760-3	17-2119920812-43-0000	Potassium Permanganate	Greater than 97%	O Xn N	R8 R22 R50/53

* The complete text of the R phrases is given in section 16 of this Safety Data Sheet.

4. FIRST AID MEASURES.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Inhalation.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.

Eye contact.

If wearing contact lenses, remove them. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance.

Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. **NEVER** use solvents or thinners.

Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. **NEVER** induce vomiting.

Note to physician: Decomposition products are alkaline. Insoluble decomposition product formed is brown colored Manganese dioxide. Avoid gastric lavage or emesis.

5. FIRE FIGHTING MEASURES.

Recommended extinguishing methods.

Use large quantities of water. Water will turn pink to purple when in contact with potassium permanganate. Do not use dry chemicals, CO₂.

Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and gloves.

Other recommendations.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

6. MEASURES TO TAKE IN CASE OF ACCIDENTAL SPILL.

Personal precautions, Protective Equipment and Emergency procedures.

Eliminate possible ignition points and ventilate the area. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

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Environmental protection precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground. In case of large spills or if the product contaminates lakes, rivers, or sewers, inform the responsible authorities according to local legislation.

Methods and material for containment and cleaning up.

Clean up spills immediately by sweeping or shoveling up the material. Do not return spilled material to the original container; transfer to a clean metal or plastic drum. To clean up solutions of Permanganate: Absorb with inert media like diatomaceous earth or inert floor dry, collect into a drum and dispose of properly. Do not use saw dust or other incompatible media. For later elimination of waste, follow the recommendations under section 13.

7. HANDLING AND STORAGE.

7.1 Precautions for safe Handling.

The fumes are heavier than air and can spread across the ground. They can form explosive mixtures with air. Prevent the creation of flammable or explosive fume concentrations in the air; prevent fume concentrations above work exposure limits. The preparation must only be used in areas where all unprotected flames and other ignition points have been eliminated. Electrical equipment has to be protected according to applicable standards.

The preparation can be electrostatically charged: always use earth grounds when transferring the product. Operators must use anti-static footwear and clothing, and floors must be conductors.

Keep the container tightly closed and isolated from heat sources, sparks, and fire. Do not use tools that can cause sparks.

Prevent the preparation from contacting the skin or eyes. Avoid the inhalation of fumes and mists that form when spraying.

For personal protection, see section 8. Never use pressure to empty the containers. They are not pressure-resistant containers. In the application area, smoking, eating, and drinking must be prohibited.

Follow legislation on occupational health and safety. Keep the product in containers made of a material identical to the original.

7.2 Conditions for safe Storage.

Store according to local legislation. Observe indications on the label. Store the containers between 5 and 35° C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidizing agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorized persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

Incompatible materials: Strong reducing agents. Finely powdered metals. Peroxides, Aluminum, Zinc, Lead, Copper. Copper alloys.

8. EXPOSURE CONTROL/PERSONAL PROTECTION.

8.1 Exposure limits.

OSHA PEL: Ceiling: 5 mg/m³

Work exposure limit for:

	Long term occupational exposure limit value		Short term occupational exposure limit value	
	ppm	mg/m ³	ppm	mg/m ³
AGW (Germany)	-	0.5 inhalable aerosol	-	-
MAK (Germany)	-	0.5 inhalable	-	-
Belgium	-	0.2	-	-
France	-	-	-	-
Spain	-	0.2	-	-
Netherlands	-	-	-	-
United Kingdom	-	0.5	-	-
United States	-	-	-	-

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8.2 Individual Protection measures and Exposure controls

Measures of a technical nature: Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system. If these are not enough to keep the particulate concentrations below the work exposure limit, suitable breathing equipment must be used.

Breathing protection: When workers are subjected to concentrations above the exposure limit, they must use suitable and officially approved equipment. Use active carbon masks.

Hand protection: for prolonged or repeated contact, use polyvinyl alcohol or nitrile rubber types of gloves. Protective creams can help to protect exposed areas of the skin. These creams must **NEVER** be applied once exposure has occurred.

Eye protection: use protective goggles especially designed to protect against liquid splatters. Install emergency eyewashes near the use area.

Skin protection: personnel must wear anti-static clothing made of natural fiber or synthetic fibers resistant to high temperatures. All body parts that have been in contact with the preparation must be washed.

9. PHYSICAL AND CHEMICAL PROPERTIES.

APPEARANCE AND ODOR:	Dark purple solid with metallic luster, odorless
BOILING POINT, 760 mm Hg:	Not applicable
VAPOR PRESSURE (mm Hg):	Not applicable
FLASH POINT:	Not applicable
SOLUBILITY IN WATER % BY SOLUTION:	6% at 20°C (68°F) and 20% at 65°C (149°F)
PERCENT VOLATILE BY VOLUME:	Not volatile
EVAPORATION RATE:	Not applicable
MELTING POINT	Starts to decompose with evolution of oxygen (O ₂) at above 150°C. Once initiated, the decomposition is exothermic and self-sustaining.
SPECIFIC GRAVITY	2.7 at 20°C (68°F)
BULK DENSITY	Approximately 1.45 - 1.6 kg / l
VAPOR DENSITY (AIR=1)	Not applicable
OXIDIZING PROPERTIES	Strong oxidizer
VISCOSITY	Not applicable
pH OF THE SUBSTANCE	Not applicable
PARTITION COEFFICIENT: n-OCTONAL/WATER	
MOLECULAR WEIGHT	158.03 g/mol

10. STABILITY AND REACTIVITY.

10.1 STABILITY

Under normal conditions, the material is stable.

10.2 CONDITIONS TO AVOID

Contact with incompatible materials or heat (150°C / 302°F) could result in violent exothermic chemical reaction.

10.3 MATERIALS TO AVOID

Acids, peroxides, formaldehyde, anti-freeze, hydraulic fluids and all combustible organic or readily oxidizable inorganic materials including metal powders. With hydrochloric acid, chlorine gas is liberated.

10.4 HAZARDOUS DECOMPOSITION PRODUCTS

When involved in a fire, potassium permanganate may liberate irritating, poisonous and/or corrosive fumes. Oxides of potassium and manganese may be formed.

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11. TOXICOLOGICAL INFORMATION.

11.1 Acute Toxicity

Ingestion:

LD50 (oral, rat): 750 mg/Kg.

Investigated as a mutagen, reproductive effector.

Skin Contact:

LD 50 dermal no data available.

The product may be absorbed into the body through the skin. Major effects of exposure: severe irritation, brown staining of skin.

Inhalation:

LC 50 inhal. no data available,

The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

Note: Max Usage Level for Potable water treatment should not exceed 50 mg/l.

The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.

11.2 Chronic Toxicity

No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

11.3 Carcinogenicity

Potassium permanganate has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.

11.4 Medical conditions generally aggravated by exposure

Potassium permanganate solution will cause further irritation of tissue, open wounds, burns or mucous membranes.

12. ECOLOGICAL INFORMATION.

Environmental Fate: No information found. Environmental Toxicity:

Dangerous to the environment. Very toxic to aquatic organisms; may cause long term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS.

Dumping into sewers or waterways is prohibited. Waste and empty containers must be handled and eliminated according to current, local/national legislation.

14. INFORMATION PERTAINING TO TRANSPORT.

Transport following ADR/TPC rules for highway transport, RID rules for railway, IMDG for sea, and ICAO/IATA for air transport.

Transport method

14.1 Land: Transport by road: ADR 2007, Transport by rail: RID

UN no.: 1490 Class: 5.1 Packaging group: II Labels: 5.1 Hazard number: 50

Transport documentation: Consignment note and written instructions

14.2 Sea: Transport by ship: IMDG 33-06

UN no.: 1490 Class: 5.1 Packaging group: II Labels: 5.1

FEm – Emergency sheets (F – Fire, S - Spills): F-H,S-Q

Sea pollutant (PP – Strong sea pollutant, P – Sea pollutant): Transport documentation: Bill of lading

14.3 Air: Transport by plane: IATA/ICAO

UN no.: 1490 Class: 5.1 Packaging group: II Labels: 5.1

Transport document: Airway bill

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15. REGULATORY INFORMATION.

EUROPEAN REGULATIONS

GERMANY WATER CLASSIFICATION

Potassium permanganate (7722-64-7) Number 1936, hazard class 3 - severe hazard to waters

CLP CLASSIFICATION

This product is hazardous according to the Regulation (EC) No. 1272/2008 on Classification, Labeling and Packaging of Substances and Mixtures (CLP).

Oxidizing solid, Category 2 Acute toxicity, Category 4

Hazardous to the Aquatic Environment - Hazard, Category 1 Hazardous to the Aquatic Environment - Hazard, Category 1

Symbols:



OXIDIZER



IRRITANT (SKIN AND EYE)
ACUTE TOXICITY



DANGEROUS TO
ENVIRONMENT



CORROSIVE

R Phrases:

R8	Contact with combustible material may cause fire.
R22	Harmful if swallowed.
R50/53	Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

S phrases:

S2	Keep out of the reach of children.
S60	This material and its container must be disposed of as hazardous waste.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Component	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA - Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) - Toxic Chemicals	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Potassium permanganate 7722-64-7	Not applicable	Not applicable	Not applicable	Not applicable	>= 1.0 %

International Inventories

TSCA	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Potassium Permanganate has also been classified in accordance with the hazard criteria of the Controlled Products Regulation Canada.

U.S. Federal Regulations

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SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Potassium permanganate	7722-64-7	95-100	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Potassium permanganate 7722-64-7 (95-100)	100 lb			X

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPS) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Potassium permanganate	7722-64-7	95-100	Present (includes any unique chemical substance that contains Manganese as part of its infrastructure)			

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Potassium permanganate	100 lb	

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Potassium permanganate	X	X	X	X	X

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16. OTHER INFORMATION.

Complete text of the R phrases that appear in section 3:

R8	Contact with combustible material may cause fire.
R22	Harmful if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NIOSH	National Institute for Occupational Safety and Health
MSHA	Mine Safety and Health Administration
OSHA	Occupational Safety and Health Administration
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
PEL	Permissible Exposure Limit
C	Ceiling Exposure Limit
TLV-TWA	Threshold Limit Value-Time Weighted Average
CAS	Chemical Abstract Service
EINECS	Inventory of Existing Chemical Substances (European)

The information given in this Safety Data Sheet has been drafted in accordance with REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet on the Preparation is based on current knowledge. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.