

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Reference Material for Potassium Permanganate Titration Solution

1.2 Other means of identification

Product number CPRM1539
Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Oxidizing solids, Category 2
Acute toxicity - Category 4, Oral
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1
Reproductive toxicity, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H272 May intensify fire; oxidizer
H302 Harmful if swallowed
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P203 Obtain, read and follow all safety instructions before use.

Response

P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P391 Collect spillage.
P318 IF exposed or concerned, get medical advice.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Reference Material for Potassium Permanganate Titration Solution	Potassium permanganate	7722-64-7	231-760-3	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air. Half-upright position. Artificial respiration may be needed. Refer immediately for medical attention.

Following skin contact

Wear protective gloves when administering first aid. First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again. Refer for medical attention .

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth. If within a few minutes after ingestion, one small glass of water may be given to drink. Do NOT induce vomiting. Refer immediately for medical attention.

4.2 Most important symptoms/effects, acute and delayed

Burns and stains the skin dark brown. If ingested will cause severe distress of gastro-intestinal system. May be fatal if over 4 oz. are consumed. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Following ingestion of tablets, gastric lavage & supervision on surgical unit is proposed. operation should be conservative if digestive perforation is present, although it is extremely rare.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material on fire or involved in fire: Flood with water. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

5.2 Specific hazards arising from the chemical

Behavior in Fire: May cause fire on contact with combustibles. Containers may explode. (USCG, 1999)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT absorb in saw-dust or other combustible absorbents.

6.2 Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT absorb in saw-dust or other combustible absorbents.

6.3 Methods and materials for containment and cleaning up

Environmental considerations: Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner./ Cover solids with a plastic sheet to prevent dissolving in rain or fire fighting water. Add sodium bisulfite (NaHSO₃).

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO contact with combustible substances. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from combustible substances, reducing agents and powdered metals. Well closed. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: (as Mn): 0.2 mg/m³, as TWA.EU-OEL: (as Mn, inhalable fraction): 0.2 mg/m³ as TWA.EU-OEL: (as Mn, respirable fraction): 0.05 mg/m³ as TWA.MAK: (as Mn, inhalable fraction): 0.2 mg/m³; (as Mn, respirable fraction): 0.02 mg/m³; peak limitation category: II(1); pregnancy risk group: C; (DFG 2016)

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Avoid inhalation of dust. Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Potassium permanganate is a purplish colored crystalline solid. Noncombustible but accelerates the burning of combustible material. If the combustible material is finely divided the mixture may be explosive. Contact with liquid combustible materials may result in spontaneous ignition. Contact with sulfuric acid may cause fire or explosion. Used to make other chemicals and as a disinfectant.
Colour	Dark purple or bronze-like crystals; Almost opaque by transmitted light and of a blue metallic luster by reflected air.
Odour	Odorless
Melting point/freezing point	240°C
Boiling point or initial boiling point and boiling range	no data available
Flammability	Not combustible but enhances combustion of other substances. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	Not flammable (USCG, 1999)
Decomposition temperature	240°C
pH	no data available
Kinematic viscosity	no data available
Solubility	Soluble in many organic solvents; also by concentrated acids with the liberation of oxygen.
Partition coefficient n-octanol/water	1.73 (calculated)
Vapour pressure	at 20°C: negligible
Density and/or relative density	1.01g/mL at 25°C
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

500 mg/cu m Manganese compounds and fume (as Mn)

Decomposes on heating. This produces toxic gases and irritating fumes. The substance is a strong oxidant. It reacts with combustible and reducing materials. This generates fire and explosion hazard. Reacts violently with powdered metals. This generates fire hazard.

10.2 Chemical stability

Stable in air and light; soln are unstable

10.3 Possibility of hazardous reactions

MODERATE, BY CHEMICAL REACTION. POTASSIUM PERMANGANATE is a very powerful oxidizing agent, particularly in acidic surroundings. Reacts with incandescence with aluminum carbide [Mellor 5:872. 1946-47]. Grinding with antimony or arsenic causes ignition of the metals [Mellor 12:322. 1946-47]. Mixtures with acetic acid or acetic anhydride may explode if not kept cold [Von Schwartz 1918. p. 34]. Explosions can occur when acidified solutions come in contact with benzene, carbon disulfide, diethyl ether, ethyl alcohol, petroleum, or organic matter. Contact with glycerol may produce an explosion [Pieters 1957. p. 30]. Contact with concentrated hydrogen peroxide solution can produce an explosion [Haz. Chem. Data 1973. p. 230]. Contact with solid hydroxylamine produces an immediate white flame [Mellor 8:294. 1946-47]. Transport through a polypropylene tube ignited the tube [MCA Case History 1842. 1972]. Mixing with concentrated sulfuric acid in a vessel containing moisture caused an explosion (due to formation of manganese heptoxide) [Delhez 1967].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Caution: take great care in handling as explosions may occur if it is brought into contact with org or other readily oxidizable substances, either in soln or in dry state.

10.6 Hazardous decomposition products

Decomp at about 240 deg c with evolution of oxygen; decomp by alcohol & many other org solvents, also by concn acids with liberation of oxygen; with hydrochloric acid, chlorine liberated; readily decomp by many reducing substances, such as ferrous salts, iodides, oxalates, etc, esp in presence of an acid

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Guinea pig oral 810 mg/kg.
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation of dust may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

The substance may have effects on the lungs. This may result in bronchitis and pneumonia. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LD50 *Lepomis macrochirus* (bluegill sunfish) 2.7-3.6 mg/l /Conditions of bioassay not specified
- Toxicity to daphnia and other aquatic invertebrates: no data available

- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1490 (For reference only, please check.) IMDG: UN1490 (For reference only, please check.) IATA: UN1490 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: POTASSIUM PERMANGANATE (For reference only, please check.) IMDG: POTASSIUM PERMANGANATE (For reference only, please check.) IATA: POTASSIUM PERMANGANATE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.) IMDG: 5.1 (For reference only, please check.) IATA: 5.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.) IMDG: II (For reference only, please check.) IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Potassium permanganate	Potassium permanganate	7722-64-7	231-760-3
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Rinse contaminated clothing with plenty of water because of fire hazard.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.