



Univar USA Inc Material Safety Data Sheet

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MSDS No:

Version No:

Order No:

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052  
(425) 889 3400

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Emergency Assistance

For emergency assistance involving chemicals call  
Chemtrec - (800) 424-9300

The Version Date and Number for this MSDS is : 08/28/2009 - #008

PRODUCT NAME: POTASSIUM PERMANGANATE  
MSDS NUMBER: P1436VSX  
DATE ISSUED: 03/01/2008  
SUPERSEDES: 12/01/2007  
ISSUED BY: 008237

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MATERIAL SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council, of 18 December 2006 concerning REACH

Section 1 Chemical Product and Company Identification

PRODUCT NAME: CAIROX Potassium permanganate, KMnO4  
TRADE NAME: CAIROX POTASSIUM PERMANGANATE  
SYNONYMS: Permanganic acid potassium salt  
Potassium permanganate  
Chameleon mineral  
Condy's crystals  
Permanganate of potash

USES OF SUBSTANCE: Potassium permanganate is an oxidant recommended for applications that require a strong oxidant.

COMPANY NAME (US):  
COMPANY ADDRESS:  
CARUS CORPORATION  
315 Fifth Street, Peru, IL 61354, USA

INFORMATION: (815) 223-1500 (Tel)  
(815) 224-6816 (FAX)  
www.caruscor\_poration.com (Web)  
salesmkt@caruscorporation.com (Email)

EMERGENCY TELEPHONE:  
(800) 435 6856 (USA)  
(815) 223-1500 (Other countries)  
(800) 424-9300 (Chemtrec, USA)  
(703) 527-3887 (Chemtrec, Other countries)

Annotation:

Section 2 Hazards Identification

1. EYE CONTACT

Potassium Permanganate is damaging to eye tissue on contact. It may cause severe burns that result in damage to the eye.

2. SKIN CONTACT

Contact of solutions at room temperature may be irritating to the skin, leaving brown stains. Concentrated solutions at elevated temperature and crystals are damaging to the skin.

3. INHALATION

Acute inhalation toxicity data are not available. However, airborne concentrations of potassium permanganate in the form of dust or mist may cause damage to the respiratory tract.

4. INGESTION

Potassium permanganate, if swallowed, may cause severe burns to mucous membranes of the mouth, throat, esophagus, and stomach.

Section 3 Hazardous Ingredients

MATERIAL OR COMPONENT	CAS NO.	EINECS	%	HAZARD DATA
Potassium Permanganate	7722-64-7	231-760-3	>97.5%	PEL/C 5 mg Mn per cubic meter of air  TLV-TWA 0.2 mg Mn per cubic meter of air

RISK PHRASES:

- 8 Contact with combustibles may cause fire.
- 22 Harmful if swallowed.
- 50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.

SAFETY PHRASES:

- 60 This material and its container must be disposed of as hazardous waste.
- 61 Avoid releases to the environment. Refer to special instructions / Safety data sheet.

Section 4 First Aid Measures

1. EYES

Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Do not attempt to neutralize chemically. Seek medical attention immediately. Note to physician: Soluble decomposition products are alkaline. Insoluble decomposition product is brown manganese dioxide.

2. SKIN

Immediately wash contaminated areas with water. Remove contaminated clothing and footwear. Wash clothing and decontaminate footwear before reuse. Seek medical attention immediately if irritation is severe or persistent.

3. INHALATION

Remove person from contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

4. INGESTION

Never give anything by mouth to an unconscious or convulsing person. If person is conscious, give large quantities of water. Seek medical attention immediately.

Section 5 Fire Fighting Measures

NEPA\* HAZARD SIGNS

Health Hazard

1 = Materials which under fire conditions would give off irritating combustion products. (less than 1 hour exposure)  
Materials that on the skin could cause irritation.

Flammability Hazard

0 = Materials that will not burn.

Reactivity Hazard

0 = Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

Special Hazard

OX = Oxidizer

\*National Fire Protection Association 704 (USA)

FIRST RESPONDERS: Wear protective gloves, boots, goggles, and respirator. In case of fire, wear positive pressure breathing apparatus. Approach incident with caution.

FLASHPOINT

None

FLAMMABLE OR EXPLOSIVE LIMITS

Lower: Nonflammable Upper: Nonflammable

EXTINGUISHING MEDIA

Use large quantities of water. Water will turn pink to purple if in contact with potassium permanganate. Dike to contain. Do not use thy chemicals, CO2 Halon or foams.

**Annotation:**

SPECIAL FIREFIGHTING PROCEDURES

If material is involved in fire, flood with water. Cool all affected containers with large quantities of water. Apply water from as far a distance as possible. Wear self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION

Powerful oxidizing material. May decompose spontaneously if exposed to heat (150 deg C / 302 deg F). May be explosive in contact with certain other chemicals (Section 10). May react violently with finely divided and readily oxidizable substances. Increases burning rate of combustible material.

Section 6 Accidental Release Measures

PERSONAL PRECAUTIONS:

Ensure adequate ventilation. Avoid dust formation. Avoid inhalation and contact with eyes and skin. Personnel should wear protective clothing suitable for the task. Remove all ignition sources and incompatible materials before attempting clean up.

ENVIRONMENTAL PRECAUTIONS:

Do not flush into sanitary sewer system or surface water. If accidental release into the environment occurs, inform the responsible authorities. Keep the product away from drains, sewers, surface and ground water and soil.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

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 drum. To clean contaminated surfaces or floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations - if not, collect water and treat chemically (Section 13).

Section 7 Handling and Storage

WORK/HYGIENIC PRACTICES

Wash hands thoroughly with soap and water after handling potassium permanganate. Do not eat, drink or smoke when working with potassium permanganate. Wear proper protective equipment. Remove clothing, if it becomes contaminated.

VENTILATION REQUIREMENTS

Provide sufficient mechanical and/or local exhaust to maintain exposure below the TLV/TWA.

CONDITIONS FOR SAFE STORAGE

Store in accordance with NFPA 430 requirements for Class II oxidizers. Protect containers from physical damage. Store in a cool, dry area in closed containers. Segregate from acids, peroxides, formaldehyde, and all

Annotation:

combustible, organic, or easily oxidizable materials including antifreeze and hydraulic fluid.

Section 8 Exposure Controls and Personal Protection

RESPIRATORY PROTECTION

In cases where overexposure to dust may occur, the use of an approved NIOSH-MSHA dust respirator or an air supplied respirator is advised. Engineering or administrative controls should be implemented to control dust

EYE

Faceshield, goggles, or safety glasses with side shields should be worn. Provide eyewash in working area.

GLOVES

Rubber or plastic gloves should be worn.

OTHER PROTECTIVE EQUIPMENT

Normal work clothing covering arms and legs, and rubber, or plastic apron should be worn.

Section 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
SOLUBILITY IN WATER % BY SOLUTION	6% at 20 deg C (68 deg F) and 20% at 65 deg C (149 deg F)
PERCENT VOLATILE BY VOLUME	Not volatile
EVAPORATION RATE	Not applicable
MELTING POINT	Starts to decompose with evolution of oxygen (O <sub>2</sub> ) at temperatures above 150 deg C (302 deg F). Once initiated, the decomposition is exothermic and self sustaining.
SPECIFIC GRAVITY	2.7 at 20 deg C (68 deg F)
BULK DENSITY	Approximately 1.45 - 1.6 kg / l
VAPOR DENSITY (AIR=1)	Not applicable
OXIDIZING PROPERTIES	Strong oxidizer

Section 10 Stability and Reactivity

STABILITY

Under normal conditions, the material is stable.

CONDITIONS TO AVOID

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

INCOMPATIBLE MATERIALS

**Annotation:**

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.

**HAZARDOUS DECOMPOSITION PRODUCTS**

When involved in a fire, potassium permanganate may liberate corrosive fumes.

**CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION**

Material is not known to polymerize.

**Section 11 Toxicological Information**

**1. ACUTE TOXICITY**

**INGESTION:**

LD 50 oral rat: 780 mg/kg male (14 days); 525 mg/kg female (14 days).  
Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

**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 inhalation: No data available.  
The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

**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.

**3. CARCINOGENICITY**

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

**4. MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

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

**Section 12 Ecological Information**

**ENTRY TO THE ENVIRONMENT**

Permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble MnO<sub>2</sub>.

Annotation:  
BIOCONCENTRATION POTENTIAL

In non-reducing and non-acidic environments, MnO<sub>2</sub> is insoluble and has a very low bioaccumulative potential.

AQUATIC TOXICITY

The toxicity data for potassium permanganate is given below:

Rainbow trout, 96 hour LC50:	1.8 mg/L
Bluegill sunfish, 96 hour LC50:	2.3 mg/L
Milk fish (Chanos Chanos)/ 96 hour LC50:	>1.4mg/l

Offer surplus and non-recyclable product or solutions to a licensed disposal company.

Reduce potassium permanganate in aqueous solutions with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water. Contact Cams Chemical Company for additional recommendations.

Packaging materials must be triple rinsed to remove all potassium permanganate prior to re-cycling or disposal.

Section 14 Transport Information

USA (land, D.O.T.)

Proper Shipping Name:	49 CFR172.101	Potassium Permanganate
Hazard Class:	49 CFR172.101	Oxidizer
ID Number:	49 CFR172.101	UN 1490
Packing Group:	49 CFR172.101	II
Division:	49 CFR172.101	5.1

European Labeling in accordance Road/Rail Transport (ADR/RID)	ID Number:	UN 1490
	ADR/RID Class	5.1
	Description of Goods:	Potassium Permanganate
	Hazard Identification No.	50

European Labeling in accordance with EC directive (Water, I.M.O.)	Proper Shipping Name:	Potassium Permanganate
	Hazard Class:	Oxidizer
	ID Number:	UN 1490
	Packing Group:	II
	Division:	5.1
	Marine Pollutant:	No

European Labeling in accordance with EC directive (Air, I.C.A.O.)	Proper Shipping Name:	Potassium Permanganate
	Hazard Class:	Oxidizer
	ID Number:	UN 1490

Annotation:

Packing Group: II  
Division: 5.1

Section 15 Regulatory Information

EUROPEAN AND INTERNATIONAL REGULATIONS:

MARKINGS ACCORDING TO EU GUIDELINES:

The product has been classified and marked in accordance with EU directives/ordinances on hazardous materials.

CHEMICAL NAME	CAS NO.	EINECS	UN NUMBER
Potassium Permanganate	7722-64-7	231-760-3	UN 1490

RISK PHRASES:

8 Contact with combustibles may case fire.  
22 Harmful if swallowed.  
50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment. SAFETY PHRASES:  
60 This material and its container must be disposed of as hazardous waste.  
61 Avoid releases to the environment. Refer to special instructions / Safety data sheet.

US FEDERAL REGULATIONS:

CHEMICAL INVENTORY STATUS PART 1

Ingredient	CAS. NO.	TSCA	EC	Japan	Australia
Potassium Permanganate	7722-64-7	Yes	Yes		

CHEMICAL INVENTORY STATUS PART 2 -- CANADA---

Ingredient	CAS. NO.	Korea	DSL	NDSL	PHIL
Potassium Permanganate	7722-64-7	No	Yes		

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR, Canada) and the MSDS contains all of the information required by the CPR.

FEDERAL, STATE & INTERNATIONAL REGULATIONS PART 1

Ingredient	CAS. NO.	SARA 302		SARA 313	
		RQ	TPQ	List	Chemical Catg.
Potassium Permanganate	7722-64-7	N/A	N/A	Yes	Yes

(Manganese compounds)

FEDERAL, STATE & INTERNATIONAL REGULATIONS PART 2

Ingredient	CAS. NO.	CERCLA	RCRA	TSCA 8(d)
Potassium Permanganate	7722-64-7	Yes (RQ =100 lbs)	D001	No

Ingredient	CAS. NO.	CWC	TSCA 12(b)	CDTA	SARA
Potassium Permanganate	7722-64-7	No	No		311/312 4545 Kg

Ingredient	CAS. NO.	Acute	Chronic	Fire	Pressure
Potassium Permanganate	7722-64-7	Yes	Yes	Yes	No

Reactivity	Pure/Liquid
No	Pure

Ingredient	CAS. NO.	Australian Hazchem Code	Poison Schedule	WHMIS
Potassium	7722-64-7			C, D2B

Section 16 Other Information

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)

## Univar USA Inc Material Safety Data Sheet

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For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

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