

# Material Safety Data Sheet

## Potassium Permanganate, P.A.

ACC# 01314

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Potassium Permanganate, P.A.

**Catalog Numbers:** AC207740000, AC207740010, AC207740025, AC207745000

**Synonyms:** Permanganic acid, potassium salt; Permanganate of potash

**Company Identification:**

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7722-64-7	Permanganic Acid (HMnO <sub>4</sub> ), Potassium Salt	ca.100	231-760-3

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: dark purple crystals.

**Danger!** Strong oxidizer. Contact with other material may cause a fire. Causes severe eye and skin irritation with possible burns. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause kidney damage. Reproductively active.

**Target Organs:** Blood, kidneys, central nervous system, liver, lungs, eyes, skin.

#### Potential Health Effects

**Eye:** Causes severe eye irritation and possible burns. May cause chemical conjunctivitis and corneal damage.

**Skin:** May be harmful if absorbed through the skin. Causes skin irritation and possible burns. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color. Skin contact can cause brown stains in the area, and possible hardening of the outer skin layer.

**Ingestion:** Harmful if swallowed. May cause severe and permanent damage to the digestive tract. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause liver and kidney damage. May cause perforation of the digestive tract. May cause central nervous system effects. May be harmful if swallowed. May form methemoglobin which in sufficient concentration causes cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). In high doses, manganese may increase anemia by interfering with iron absorption. Manganese in general is a central nervous system poison, and potassium permanganate has also been shown to have this property.

**Inhalation:** Aspiration may lead to pulmonary edema. Causes respiratory tract irritation with possible burns. May cause central nervous system effects such as nausea and headache.

**Chronic:** Prolonged or repeated skin contact may cause defatting and dermatitis. Effects may be delayed. Laboratory experiments have resulted in mutagenic effects. Chronic manganese toxicity through inhalation may result in "manganism", which is a disease of the central nervous system involving psychic and neurological disorders. May cause kidney damage. May cause adverse reproductive effects.

### Section 4 - First Aid Measures

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. If cyanosis is severe, intravenous injection of Methylene Blue, 1mg/kg of body weight may be of value.

### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Some oxidizers may react explosively with hydrocarbons(fuel). May accelerate burning if involved in a fire. Containers may explode when heated.

**Extinguishing Media:** Cool containers with flooding quantities of water until well after fire is out. For small fires, do NOT use dry chemicals, carbon dioxide, halon or foams. USE WATER ONLY. For large fires, flood fire area with water from a distance.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:**Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 1; Special Hazard: OX

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers. Do not use combustible materials such as paper towels to clean up spill.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Do not ingest or inhale. Do not store near combustible materials. Discard contaminated shoes.

**Storage:** Keep away from sources of ignition. Do not store near combustible materials. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Permanganic Acid (HMnO <sub>4</sub> ), Potassium Salt	0.2 mg/m <sup>3</sup> TWA (as Mn) (listed under Manganese, inorganic compounds).	1 mg/m <sup>3</sup> TWA (as Mn) (listed under Manganese compounds, n.o.s.).500 mg/m <sup>3</sup> IDLH (as Mn) (listed under Manganese compounds, n.o.s.).	5 mg/m <sup>3</sup> Ceiling (as Mn) (listed under Manganese compounds, n.o.s.).

**OSHA Vacated PELs:** Permanganic Acid (HMnO<sub>4</sub>), Potassium Salt: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystals

**Appearance:** dark purple

**Odor:** odorless

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:**Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:**240 deg C

**Decomposition Temperature:**240 deg C

**Solubility:** Soluble.

**Specific Gravity/Density:**2.703

**Molecular Formula:**KMnO<sub>4</sub>

**Molecular Weight:**158.0339

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** High temperatures, incompatible materials, dust generation, combustible materials, reducing agents.

**Incompatibilities with Other Materials:** Strong reducing agents, peroxides, aluminum, zinc, lead, copper, copper alloys, organic materials, sulfuric acid, glycerol, phosphorus, combustible organics, ammonium nitrate, dimethyl formamide, ethylene glycol, hydroxylamine, hydrogen trisulfide, antimony, ammonium salts, acids, sulfur, acetic acid, acetic anhydride, arsenites, bromides, iodides, hydrochloric acid, charcoal, ferric salts, mercurous salts, hypophosphites, sulfites, alcohols, rubber.

**Hazardous Decomposition Products:** Irritating and toxic fumes and gases, oxygen, oxides of potassium, oxides of manganese.

**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:****CAS#** 7722-64-7: SD6475000**LD50/LC50:****CAS#** 7722-64-7:

Oral, mouse: LD50 = 2157 mg/kg;

Oral, mouse: LD50 = 750 mg/kg;

Oral, rat: LD50 = 750 mg/kg;

The estimated lethal human dose by ingestion is 10 grams, with death being delayed by up to one month. rat: LD50 = 1090 mg/kg  
mouse: LD50 = 2157 mg/kg.

**Carcinogenicity:****CAS#** 7722-64-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.**Epidemiology:** No information found.**Teratogenicity:** No information found.

**Reproductive Effects:** Intratesticular, rat: TDLo = 400 mg/kg (male 1 day(s) pre-mating) Fertility - male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females).; Oral, mouse: TDLo = 513 mg/kg (male 5 day(s) pre-mating) Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count).; Intratesticular, gerbil: TDLo = 25 mg/kg (male 1 day(s) pre-mating) Fertility - male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females).

**Mutagenicity:** Micronucleus Test: Oral, mouse = 205 mg/kg/24H (Continuous).; Cytogenetic Analysis: Oral, mouse = 718 mg/kg/7D (Continuous).; Cytogenetic Analysis: Mouse, Mammary gland = 1 mmol/L/48H.; Sperm Morphology: Oral, mouse = 513 mg/kg/5D (Continuous).

**Neurotoxicity:** No information found.**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** Fish: Channel catfish: LC50 = 0.75 mg/L; 96 Hr; UnspecifiedFish: Goldfish: LC50 = 3.6 mg/L; 24 Hr; UnspecifiedFish: Striped bass: LC50 = 1.5-5.0 mg/L; 24 Hr; Static bioassay No data available.

**Environmental:** No information available.**Physical:** No information available.**Other:** Harmful to aquatic life in very low concentrations.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	POTASSIUM PERMANGANATE	POTASSIUM PERMANGANATE
<b>Hazard Class:</b>	5.1	5.1
<b>UN Number:</b>	UN1490	UN1490
<b>Packing Group:</b>	II	II

## Section 15 - Regulatory Information

### US FEDERAL

**TSCA**

CAS# 7722-64-7 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health &amp; Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

CAS# 7722-64-7: 100 lb final RQ; 45.4 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**SARA Codes**

CAS # 7722-64-7: acute, flammable.

**Section 313**

This material contains Permanganic Acid (HMnO<sub>4</sub>), Potassium Salt (listed as Manganese compounds, n.o.s.), ca.100%, (CAS# 7722-64-7) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

CAS# 7722-64-7 (listed as Manganese compounds, n.o.s.) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**

CAS# 7722-64-7 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 7722-64-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Manganese compounds, n.o.s.), Massachusetts.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN O N

**Risk Phrases:**

R 22 Harmful if swallowed.

R 8 Contact with combustible material may cause fire.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety Phrases:**

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

**WGK (Water Danger/Protection)**

CAS# 7722-64-7: 2

**Canada - DSL/NDSL**

CAS# 7722-64-7 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of C, E.

**Canadian Ingredient Disclosure List**

CAS# 7722-64-7 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** 7/08/1999

**Revision #2 Date:** 3/13/2003

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