

## Safety Data Sheet

### 1. IDENTIFICATION

<b>Product Identifier:</b>	<b>Potassium Permanganate Solution, 0.1-1% w/w (0.042-0.2N)</b>
<b>Product Code(s):</b>	P1010, P1056, P1071, P1072, P1075, CF1200, CF1207
<b>Synonyms:</b>	Permanganate of Potash Solution.
<b>Recommended Use:</b>	For manufacturing, industrial, and laboratory use only. For use as a catalyst, laboratory reagent, or oxidizing agent.
<b>Uses Advised Against:</b>	Not for food, drug, or household use.
<b>Supplier:</b>	Rocky Mountain Reagents, Inc. 4621 Technology Drive, Golden, CO 80403 Phone: (303) 762-0800 Fax: (303) 762-1240
<b>Emergency Phone Number:</b>	For health emergency call poison control: (800) 222-1222.

### 2. HAZARDS IDENTIFICATION

<b>Hazard Classifications:</b>	This product is classified as not hazardous under OSHA's Hazard Communication Standard, 29 CFR 1910.1200 (HCS) and the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). However, all chemicals handled and used in the workplace should be treated with caution.
<b>Signal Word:</b>	Not applicable.
<b>Hazard Statements:</b>	Not applicable.
<b>Pictograms:</b>	Not applicable.
<b>Precautionary Statements:</b>	
<b>Prevention:</b>	Not applicable.
<b>Response:</b>	Not applicable.
<b>Storage:</b>	Not applicable.
<b>Disposal:</b>	Not applicable.
<b>Hazards Not Otherwise Classified:</b>	May be toxic to aquatic life with long lasting effects. Contains ingredients regulated as marine pollutants. Avoid release to the environment. Prolonged or repeated exposure may cause mutagenic effects and reproductive effects.

Contains oxidizing ingredients and may cause or accelerate fire hazards.

**Toxicity Statement:** Not applicable.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Water	Water	7732-18-5	H <sub>2</sub> O	99.0 – 99.9
Potassium Permanganate	Permanganate of Potash	7722-64-7	KMnO <sub>4</sub>	0.100 – 1.00

**Trade Secret Statement:** Not applicable.

### 4. FIRST AID MEASURES

#### First Aid Procedures:

- Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
- Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
- Skin Contact:** Wash skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur.
- Eye Contact:** Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if symptoms occur.
- General Advice:** Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that medical personnel and those providing first aid are aware of the material(s) involved and take precautions to protect themselves.
- Symptoms and Effects:** Irritation, nausea, vomiting, diarrhea, discoloration, coughing, wheezing, difficulty breathing, headache, fatigue. May be harmful if swallowed, inhaled, absorbed through the skin, or exposed to the eyes. May cause respiratory effects. Prolonged or repeated exposure may cause skin and tissue discoloration.
- Immediate Medical Care/  
Special Treatment:** Treat symptomatically. Symptoms may be delayed.

### 5. FIREFIGHTING MEASURES

- Suitable Extinguishing Media:** Water spray, dry powder, alcohol resistant foam, carbon dioxide.
- Unsuitable Extinguishing Media:** Do not use a solid (straight) water stream, as it may scatter and spread fire.
- Hazardous Combustion Products:** Potassium oxides, manganese oxides.
- Specific Hazards:** May accelerate burning when involved in a fire. May decompose upon heating to produce corrosive and/or toxic fumes.

**Special Protective Equipment/ Precautions for Firefighters:** As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear. Use water spray to cool unopened containers. Move containers from fire area, if you can do so without risk. In the event of fire and/or explosion, do not breathe fumes.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions and Protective Equipment:** Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, clothing, and combustible materials.

**Emergency Procedures:** In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).

**Methods for Containment:** Stop the flow of material, if this is without risk. Keep combustibles away from spilled material. Prevent entry into waterways, sewer, basements, or confined areas. Product should not be released to the environment.

**Methods for Cleanup:** Keep combustibles away from spilled material. Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surfaces thoroughly. Never return spilled material to original container for reuse. Clean up in accordance with all applicable regulations.

## 7. HANDLING AND STORAGE

**Handling:** Wear personal protective equipment (see Section 8). Limit exposure to light. Avoid contact with skin, eyes, clothing, and combustible materials. Do not breathe vapors or spray mist. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

**Storage:** Store in a cool, dry, ventilated area. Keep out of light. Keep away from heat and sources of ignition. Do not store near combustible materials. Store away from incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal feed. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Exposure Limits:** Water: No information found.

Potassium Permanganate: ACGIH (TLV): 0.2 mg/m<sup>3</sup>  
OSHA (PEL): 5 mg/m<sup>3</sup>  
NIOSH (STEL): 3 mg/m<sup>3</sup>

**Engineering Controls:** Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## Personal Protective Measures:

**Eye/Face Protection:** Wear safety glasses with side shields or goggles and a face shield. Maintain approved eye wash station and accessible rinse facilities in work area.

**Skin Protection:** Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

**Respiratory Protection:** An air-purifying, NIOSH-approved respirator with appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

**Specific Requirements for Personal Protective Equipment:** Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

*Unless otherwise indicated, all properties are given at 25 °C and standard pressure.*

**Appearance:** Transparent, violet liquid.

**Odor:** Odorless.

**Odor Threshold:** No information found.

**Formula Weight:** 158.03 as Potassium Permanganate

**pH:** 7.0 – 8.5 (0.01 M solution at 25 °C)

**Melting/Freezing Point:** No information found.

**Boiling Point/Range:** No information found.

**Decomposition Temperature:** 240 °C

**Flash Point:** Not applicable.

**Auto-ignition Temperature:** Not applicable.

**Flammability:** Not applicable.

**Flammability/Explosive Limits:** Not applicable.

**Solubility:** Miscible with water.

**Vapor Pressure:** No information found.

**Vapor Density:** No information found.

**Specific Gravity:** 1.001 – 1.005 (Water = 1)

**Evaporation Rate:** No information found.

**Viscosity:** No information found.

**Partition Coefficient (n-octanol/water):** No information found.

## 10. STABILITY AND REACTIVITY

**Reactivity Data:** No information found.

**Chemical Stability:** Stable under normal conditions. Sensitive to light.

<b>Conditions to Avoid:</b>	Heat, light, incompatible materials.
<b>Incompatible Materials:</b>	Reducing agents, combustible materials, organic materials, metals, acids.
<b>Hazardous Decomposition Products:</b>	Potassium oxides, manganese oxides.
<b>Possibility of Hazardous Reactions:</b>	May react vigorously, violently, or explosively if exposed to extreme thermal conditions or to the incompatible materials listed above. May decompose upon heating to produce corrosive and/or toxic fumes.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Routes of Exposure:</b>	Inhalation, ingestion, skin contact, eye contact.
<b>Acute Effects:</b>	May be harmful if swallowed, inhaled, absorbed through the skin, or exposed to the eyes. May cause irritation to the skin, eyes, respiratory tract, and gastrointestinal tract.
<b>Chronic Effects:</b>	Prolonged or repeated exposure may cause skin and tissue discoloration, liver effects, kidney effects, mutagenic effects, and reproductive effects.
<b>Toxicological Data:</b>	Water: Not applicable.  Potassium Permanganate: LD <sub>50</sub> Oral, Rat: 1090 mg/kg Corrosive to skin based on animal data. May cause mutagenic and reproductive effects based on microorganism data.
<b>Symptoms of Exposure:</b>	Irritation, nausea, vomiting, diarrhea, necrosis, discoloration, edema, coughing, wheezing, difficulty breathing, headache, fatigue.
<b>Carcinogenic Effects:</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicological Data:</b>	Water: Not applicable.  Potassium Permanganate: LC <sub>50</sub> , Rainbow Trout ( <i>Oncorhynchus mykiss</i> ): 0.3 mg/L 96 h EC <sub>50</sub> , Water Flea ( <i>Daphnia magna</i> ): 0.084 mg/L 48 h
<b>Persistence and Degradability:</b>	May bioaccumulate in aquatic organisms.
<b>Environmental Effects:</b>	May be toxic to aquatic life. Avoid exposure to the environment.

## 13. DISPOSAL INFORMATION

<b>Disposal Instructions:</b>	All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers.
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**Contaminated Packaging:** Because emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

**Waste Codes:** No information found.

## 14. TRANSPORT INFORMATION

**DOT:** Not regulated.

**Environmental Hazard Regulations:** Potassium Permanganate: IMDG: Marine Pollutant

**Other Transport Precautions:** Potassium Permanganate: DOT Reportable Quantity: 100 lb

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations:

**OSHA:** This product is not considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Inventory:** All components of this product are on the U.S. TSCA Inventory.

### U.S. EPCRA (SARA Title III):

**Section 302:** No information found.

**Sections 311/312:**

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	No
Immediate Hazard	No
Delayed Hazard	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

**Section 313:** No information found.

**CERCLA Reportable Quantities:** No information found.

### International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	N/A
Canada	Domestic Substances List (DSL)	N/A
Canada	Non-Domestic Substances List (NDSL)	N/A
China	Inventory of Existing Chemical Substances in China (IECSC)	N/A
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	N/A
Europe	European List of Notified Chemical Substances (ELINCS)	N/A
Japan	Inventory of Existing and New Chemical Substances (ENCS)	N/A
Korea	Existing Chemicals List (ECL)	N/A
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	N/A

\*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s).

## 16. OTHER INFORMATION

**Disclaimer:**

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**Reason for Revision:**

Update of Section 9 over 08/06/2015 version.