1. Identification of the substance/preparation and of the company/undertaking

Identification of the product:
Product code: P5227
Name of material: Potassium permanganate, solution 0.02 mol/l (0.1 N)
Synonyms: None

2. Hazards identification

EMERGENCY OVERVIEW

Appearance: purple liquid.
Caution! May cause eye, skin, and respiratory tract irritation. May cause kidney damage.
Target Organs: Kidneys.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation. May cause skin discoloration.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage.
Inhalation: May cause respiratory tract irritation.
Chronic: May cause kidney damage.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7722-64-7</td>
<td>Potassium permanganate</td>
<td>.316-1.5</td>
<td>231-760-3</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>Balance</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

4. First aid measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.
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.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

5. Fire-fighting measures

General Information: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 0

6. Accidental release measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Provide ventilation. Clean up residual material by washing area with a 2-5% solution of soda ash.
7. Handling and storage

Handling: Use with adequate ventilation. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation. Wash clothing before reuse.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium permanganate</td>
<td>0.2 mg/m3 TWA (as Mn) (listed under Manganese, inorganic compounds).</td>
<td>1 mg/m3 TWA (as Mn) (listed under Manganese compounds, n.o.s.).500 mg/m3 IDLH (as Mn) (listed under Manganese compounds, n.o.s.).</td>
<td>5 mg/m3 Ceiling (as Mn) (listed under Manganese compounds, n.o.s.).</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Potassium permanganate: No OSHA Vacated PELs are listed for this chemical. Water: 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 gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. Physical and chemical properties

Physical State: Liquid

Appearance: purple

Odor: none reported

pH: Not available.

Vapor Pressure: 14 mm Hg

Vapor Density: 0.7

Evaporation Rate: >1 (ether=1)

Viscosity: Not available.

Boiling Point: 100 deg C

Freezing/Melting Point: 0 deg C

Decomposition Temperature: Not available.

Solubility: Not available.

Specific Gravity/Density: 1.0

Molecular Formula: Mixture

Molecular Weight: Not available.

10. Stability and reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: High temperatures, incompatible materials.

Incompatibilities with Other Materials: Potassium permanganate explodes on contact with some acids such as acetic acid, concentrated hydrochloric acid, and formaldehyde, ammonium nitrate, dimethylformamide. Forms sensitive explosive mixtures with ammonium perchlorate, titanium, arsenic, phosphorus, slag wool, and sulfur. React with reducing agents.
11. Toxicological information

**RTECS#:**
CAS# 7722-64-7: SD6475000
CAS# 7732-18-5: ZC0110000

**LD50/LC50:**
CAS# 7722-64-7: 
  Oral, mouse: LD50 = 2157 mg/kg;
  Oral, mouse: LD50 = 750 mg/kg;
  Oral, rat: LD50 = 750 mg/kg;
CAS# 7732-18-5: 
  Oral, rat: LD50 = >90 mL/kg;

**Carcinogenicity:**
CAS# 7722-64-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:**

12. Ecological information

No information available.

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.

14. Transport information

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<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazard Class:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN Number:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

15. Regulatory information

**US FEDERAL**

**TSCA**
CAS# 7722-64-7 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

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

CERCLLA 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: immediate, delayed, fire.

Section 313
This material contains Potassium permanganate (listed as Manganese compounds, n.o.s.), .316-1.5%, (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 depletors.
This material does not contain any Class 2 Ozone depletors.

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.

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. CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

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:
Not available.

Risk Phrases:
Safety Phrases: S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)
CAS# 7722-64-7: 2
CAS# 7732-18-5: No information available.

Canada - DSL/NDSL
CAS# 7722-64-7 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.

Canada - WHMIS
not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

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

16. Other information

Reason for the revision: General update.

Date: 11/06/2007

No warranty, expressed or implied for a particular purpose or otherwise is made, except the products herein discussed comply to the chemical description on the labels. Buyer assumes risks of the use, storage and handling. Producer or distributors shall not be liable for any incidental or consequential damages arising directly or indirectly in connection with the purchase, use, storage or handling of this product. The information contained herein is, to the best of our knowledge, true and accurate. However, all recommendations or suggestions are made without guarantee, since the conditions of use are beyond our control. We disclaim any liability incurred in connection with the use of these data or suggestions.