1. IDENTIFICATION

Product Identifier
Product Name
POTASSIUM PERMANGANATE SOLUTION

Recommended use of the chemical and restrictions on use
Recommended use
Iron sulfide remediation
Restrictions on use
For industrial use only

Supplier details
West Penetone Inc.
11411-160 Street
Edmonton, AB,
T5M3T7
Tel: 780-454-3919

Emergency Telephone Number
Canutec (613)-996-6666

2. HAZARDS IDENTIFICATION

Classification

<table>
<thead>
<tr>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment, acute hazard Category 2</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment, long-term hazard Category 2</td>
</tr>
</tbody>
</table>

Label Elements

DANGER

Hazard Statements
Causes skin irritation
Causes serious eye damage
Toxic to aquatic life
Toxic to aquatic life with long lasting effects

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN: Wash with plenty of water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and
wash it before re-use.
Collect spillage.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant according to local, provincial/federal regulations.
3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium permanganate</td>
<td>7722-64-7</td>
<td>4</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**Eye contact**
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

**Skin contact**
Wash with plenty of water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash it before re-use.

**Inhalation**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if symptoms develop or persist.

**Ingestion**
Rinse mouth. Remove person to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed by medical personnel. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed
Contact with eyes may cause serious eye damage leading to irritation, discomfort or pain, excess blinking and tear production with marked redness and swelling of the conjunctiva, blurred vision and possible corneal injury. Contact with skin may cause irritation with local redness. Material is destructive to the tissue of the mucous membranes and upper respiratory tract and may be harmful if inhaled. Material may be harmful if swallowed.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**
None.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed including oxides of potassium and manganese.

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
Avoid contact with skin, eyes and clothing. Use personal protective equipment. Use appropriate containment to avoid environmental contamination.

**Environmental Precautions**
Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up**
Contain and solidify with inert absorbent material. Keep in suitable, closed containers for disposal. Following product recovery, flush area with water. For large spills, stop flow of material, prevent product from entering drains, and pump off product where this is without risk and possible. Proceed as above.
7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling
Avoid contact with skin, eyes and clothing. Avoid inhalation of vapor or mist.

Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed away from direct sunlight in a dry, cool and well-ventilated place, away from incompatible materials.

Incompatible Materials
Organic and combustible materials, strong reducing agents and acids, peroxides, alcohols, nitrates, perchlorates, hypophosphites, hyposulfites, sulphones, oxalates, halides, and hydrides.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium permanganate</td>
<td>TWA: 0.2 mg/m³</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Controls
Eye wash facilities must be made available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face Protection
Safety glasses with side shields or goggles.

Skin and body protection
Wear protective gloves and protective clothing.

Respiratory Protection
Wear respiratory protection in case of vapor/aerosol release.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :
Violet liquid

ODOR
Odorless

ODOR THRESHOLD :
Not applicable

pH :
Neutral

MELTING POINT / FREEZING POINT :
0°C

BOILING POINT/BOILING RANGE :
100°C

FLASH POINT :
None

EVAPORATION RATE, water = 1 :
1

FLAMMABILITY (SOLID, GAS):
Not applicable

VAPOR PRESSURE, mm Hg AT 20°C :
Not applicable

VAPOR DENSITY (Air = 1) :
Not applicable

RELATIVE DENSITY AT 20°C:
1.010-1.020

SOLUBILITY IN WATER :
Complete

PARTITION COEFFICIENT, N-OCTANOL/WATER :
Not available

AUTO-IGNITION TEMPERATURE :
None

DECOMPOSITION TEMPERATURE:
Not available

VISCOSITY:
Not available

FLAMMABLE LIMITS :
UPPER: Not applicable  LOWER: Not applicable
10. STABILITY AND REACTIVITY

Reactivity
Not reactive.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to Avoid
Extreme temperatures. Store away from incompatible materials.

Incompatible Materials
Organic and combustible materials, strong reducing agents and acids, peroxides, alcohols, nitrates, perchlorates, hypophosphites, hyposulfites, sulphites, oxalates, halides, and hydrides.

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced. Material liberates chlorine in contact with hydrochloric acid. Explosion hazards may occur when in contact with sulphuric acid, peroxides, nitric acid, alcohols, arsenic, phosphorous, sulphur, titanium and aldehydes. Thermal decompositions can lead to release of toxic metal fumes such as oxides of potassium and manganese.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium permanganate 7722-64-7</td>
<td>525 mg/kg (rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Information on likely sources of exposure

- Serious eye damage/irritation: Causes serious eye damage.
- Skin corrosion/irritation: Causes skin irritation.
- Ingestion: Expected to be a low ingestion hazard.
- Inhalation: Expected to be a low inhalation hazard.

Delayed and immediate effects and also chronic effects from short and long-term exposure

- Respiratory or skin sensitization: Not a sensitizer.
- Germ cell mutagenicity: None known.
- Carcinogenicity: No listed carcinogens.
- Reproductive toxicity: No information available.
- STOT - single exposure: No information available.
- STOT-repeated exposure: No information available.
- Aspiration Hazard: None.

Symptoms related to the physical, chemical and toxicological characteristics
May cause serious eye damage. Skin irritation.

12. ECOLOGICAL INFORMATION

Ecotoxicity
If available, ecotoxicity values of individual components are shown below.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Fish</th>
<th>Waterflea</th>
<th>Algae</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium permanganate 7722-64-7</td>
<td>0.1 mg/L: 96 h ictalurus punctatus LC50</td>
<td>0.06 mg/L: 48 h daphnia magna EC50</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Persistence and degradability
Not applicable to inorganic substances.

Bioaccumulative potential
Does not significantly accumulate in organisms.

Mobility in soil
No information available

Other adverse effects
Do not release untreated into natural waters. No other adverse environmental effects are expected.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method
Dispose of in accordance with local regulations.

Contaminated Packaging
Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

TDG classification
UN 3082, Environmentally Hazardous Substance, Liquid, N.O.S. (potassium permanganate solution), Class 9, PG III

15. REGULATORY INFORMATION

All ingredients are listed on the DSL

16. OTHER INFORMATION

Preparation Date
22 April, 2016

Revision Date
not applicable

Revision Note
not applicable

Disclaimer
The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS