SAFETY DATA SHEET
Potassium Permanganate Concentrate

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name: Potassium Permanganate Concentrate
Product number: PL.8013, PL.8013/4, PL.8013/5

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory reagent.
Uses advised against: No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet
Supplier: Pro-Lab Diagnostics
3 Bassendale Road
Wirral
Merseyside
CH62 3QL
Tel: 0151 353 1613
Fax: 0151 353 1614
mowen@pro-lab.com

1.4. Emergency telephone number
Emergency telephone: +44 (0)151 353 1613 Monday to Friday 9.00 to 17.00
+44 (0)7714 429 646 outside the above hours

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification
Physical hazards: Not Classified
Health hazards: Not Classified
Environmental hazards: Aquatic Chronic 2 - H411

Classification (67/548/EEC or 1999/45/EC) N; R51/53

2.2. Label elements
Pictogram

Hazard statements: H411 Toxic to aquatic life with long lasting effects.
Precautionary statements: P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/container in accordance with national regulations.

2.3. Other hazards
This product does not contain any substances classified as PBT or vPvB.
Potassium Permanganate Concentrate

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Potassium permanganate</th>
<th>1 - &lt;2.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 7722-64-7</td>
<td>EC number: 231-760-3</td>
</tr>
<tr>
<td>M factor (Acute) = 10</td>
<td>M factor (Chronic) = 10</td>
</tr>
</tbody>
</table>

Classification:
- Ox. Sol. 2 - H272
- Acute Tox. 4 - H302
- Aquatic Acute 1 - H400
- Aquatic Chronic 1 - H410

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

**Inhalation**
Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

**Ingestion**
Rinse mouth thoroughly with water. Give plenty of water to drink. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

**Skin contact**
Wash skin thoroughly with soap and water.

**Eye contact**
Remove any contact lenses and open eyelids wide apart. Continue to rinse.

4.2. Most important symptoms and effects, both acute and delayed

**Inhalation**
Irritation of nose, throat and airway.

**Ingestion**
May cause discomfort if swallowed.

**Skin contact**
Prolonged skin contact may cause redness and irritation.

**Eye contact**
May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

**Suitable extinguishing media**
Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

**Hazardous combustion products**
Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Toxic gases or vapours.

5.3. Advice for firefighters

**Protective actions during firefighting**
Control run-off water by containing and keeping it out of sewers and watercourses.
Potassium Permanganate Concentrate

Special protective equipment for firefighters

Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. Keep unnecessary and unprotected personnel away from the spillage. Treat the spilled material according to the instructions in the clean-up section.

6.2. Environmental precautions

Environmental precautions

Avoid discharge into drains or watercourses or onto the ground. Contain spillage with sand, earth or other suitable non-combustible material. The product contains substances which are water-soluble and may spread in water systems. The product contains volatile substances which may spread in the atmosphere.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Absorb in vermiculite, dry sand or earth and place into containers. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

6.4. Reference to other sections

Reference to other sections

See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Read and follow manufacturer’s recommendations.

Advice on general occupational hygiene

Avoid contact with eyes and prolonged skin contact.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store in a cool and well-ventilated place.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Ingredient comments

No exposure limits known for ingredient(s).

8.2. Exposure controls

Eye/face protection

No specific eye protection required during normal use.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Hygiene measures

No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance

Liquid.
Potassium Permanganate Concentrate

Colour
Violet.

Odour
Almost odourless.

Odour threshold
Not determined.

pH
Not determined.

Melting point
Not relevant.

Initial boiling point and range
Not determined.

Flash point
Not determined.

Evaporation rate
Not determined.

Evaporation factor
Not determined.

Flammability (solid, gas)
Not relevant.

Upper/lower flammability or explosive limits
Not relevant.

Vapour pressure
Not determined.

Vapour density
Not determined.

Relative density
Not determined.

Bulk density
Not determined.

Solubility(ies)
Soluble in water.

Partition coefficient
Not determined.

Auto-ignition temperature
Not relevant.

Decomposition Temperature
Not relevant.

Viscosity
Not determined.

Explosive properties
Not considered to be explosive.

Oxidising properties
The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

9.2. Other information
No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stability
Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
Will not polymerise.

10.4. Conditions to avoid
Conditions to avoid
Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials
Potassium Permanganate Concentrate

Materials to avoid
No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products
Hazardous decomposition products
None at ambient temperatures. Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral
Notes (oral LD₅₀)
Based on available data the classification criteria are not met.
ATE oral (mg/kg)
50,000.0

Acute toxicity - dermal
Notes (dermal LD₅₀)
Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀)
Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data
Based on available data the classification criteria are not met.

Serious eye damage/irritation
Serious eye damage/irritation
Based on available data the classification criteria are not met.

Respiratory sensitisation
Respiratory sensitisation
Based on available data the classification criteria are not met.

Skin sensitisation
Skin sensitisation
Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Genotoxicity - in vivo
Based on available data the classification criteria are not met.

Carcinogenicity
Carcinogenicity
Based on available data the classification criteria are not met.

Reproductive toxicity
Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure
Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Based on available data the classification criteria are not met.

Aspiration hazard
Aspiration hazard
Not anticipated to present an aspiration hazard, based on chemical structure.

Toxicological information on ingredients.

Potassium permanganate

Acute toxicity - oral
Notes (oral LD₅₀) Converted acute toxicity point estimate (cATpE) Harmful if swallowed.
Potassium Permanganate Concentrate

ATE oral (mg/kg) 500

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility One-generation study - NOAEL ~ 20 mg/kg/day, Oral, Rat F1 REACH dossier information.

Reproductive toxicity - development Developmental toxicity: - LOAEC: 20 mg/kg/day, Oral, Rat REACH dossier information.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

Potassium permanganate

Toxicity Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

Acute aquatic toxicity

LE(C)₅₀ 0.01 < L(E)C50 ≤ 0.1

M factor (Acute) 10

Acute toxicity - fish LC₅₀, 24 hours: 1.51 mg/l, Poecilia reticulata (Guppy)

LC₅₀, 48 hours: 0.7 mg/l, Poecilia reticulata (Guppy)

LC₅₀, 72 hours: 0.56 mg/l, Poecilia reticulata (Guppy)

LC₅₀, 96 hours: 0.47 mg/l, Poecilia reticulata (Guppy)

NOEC, 24 hours: 0.35 mg/l, Poecilia reticulata (Guppy)

NOEC, 48 hours: 0.35 mg/l, Poecilia reticulata (Guppy)

NOEC, 72 hours: 0.35 mg/l, Poecilia reticulata (Guppy)

NOEC, 96 hours: 0.35 mg/l, Poecilia reticulata (Guppy)

REACH dossier information.

Acute toxicity - aquatic invertebrates EC₅₀, 24 hours: 0.15 mg/l, Daphnia magna

EC₅₀, 48 hours: 0.06 mg/l, Daphnia magna

NOEC, 24 hours: 0.02 mg/l, Daphnia magna

NOEC, 48 hours: 0.01 mg/l, Daphnia magna

EC₁₀₀, 24 hours: 0.64 mg/l, Daphnia magna

EC₁₀₀, 48 hours: 0.32 mg/l, Daphnia magna

REACH dossier information.
Potassium Permanganate Concentrate

Acute toxicity - aquatic plants
EC₅₀, 72 hours: 0.43 - 0.8 mg/l, Desmodesmus subspicatus
REACH dossier information.

Acute toxicity - microorganisms
EC₅₀, 3 hours: 86.4 mg/l, Activated sludge
EC₅₀, 3 hours: 164 mg/l, Activated sludge
EC₈₀, 3 hours: 311 mg/l, Activated sludge
REACH dossier information.

Chronic aquatic toxicity
M factor (Chronic) 10

12.2. Persistence and degradability
Persistence and degradability No data available.

Ecological information on ingredients.

Potassium permanganate

Stability (hydrolysis) pH4, pH7, pH9 - Half-life : > 1 year @ 25°C
REACH dossier information.

12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.
Partition coefficient Not determined.

12.4. Mobility in soil
Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment
Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects
Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
General information Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Confirm disposal procedures with environmental engineer and local regulations. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out.
Disposal methods Do not empty into drains. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Collect and place in suitable waste disposal containers and seal securely. Dispose of contents/container in accordance with national regulations.

SECTION 14: Transport information

14.1. UN number
UN No. (ADR/RID) 3082
UN No. (IMDG) 3082
UN No. (ICAO) 3082
Potassium Permanganate Concentrate

UN No. (ADN) 3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (potassium permanganate)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (potassium permanganate)

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (potassium permanganate)

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (potassium permanganate)

14.3. Transport hazard class(es)

ADR/RID class 9

ADR/RID classification code M6

ADR/RID label 9

IMDG class 9

ICAO class/division 9

ADN class 9

Transport labels

14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ADN packing group III

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS F-A, S-F

ADR transport category 3

Emergency Action Code •3Z

Hazard Identification Number (ADR/RID) 90

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Potassium Permanganate Concentrate

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations
EH40/2005 Workplace exposure limits.

EU legislation

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures according to Regulation (EC) 1272/2008

Revision comments
Classification according to EC 1272/2008 (CLP).

Revision date
09/04/2015

Revision
4

Supersedes date
01/11/2012

SDS number
821

Risk phrases in full
R8 Contact with combustible material may cause fire.
R22 Harmful if swallowed.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard statements in full
H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

The information in this safety data sheet was obtained from current and reliable sources. However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond Pro-Lab Diagnostics control, it is the users responsibility to perform thorough testing of this product when used in combination with any other product. It is suggested that users familiarise themselves with this safety data sheet before handling the product.