Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 27.02.2016
Version: 6.00
Print date: 27.02.2016

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

Product identifier

<table>
<thead>
<tr>
<th>Trade name/designation:</th>
<th>Potassium permanganate 0.1N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product No.:</td>
<td>74561</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>no data available</td>
</tr>
<tr>
<td>CAS No.:</td>
<td>7722-64-7</td>
</tr>
</tbody>
</table>

Other means of identification:

Relevant identified uses of the substance or mixture and uses advised against

<table>
<thead>
<tr>
<th>Recommended Use:</th>
<th>For Further Manufacturing Use Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses advised against:</td>
<td>Not for Human or Animal Drug Use</td>
</tr>
</tbody>
</table>

Details of the supplier of the safety data sheet

United States of America

Supplier

VWR International LLC

<table>
<thead>
<tr>
<th>Street</th>
<th>100 Matsonford Road Radnor Corporate Center, Building One, Suite 200 P. O. Box 6660</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postal code/city</td>
<td>Radnor, PA 19087</td>
</tr>
<tr>
<td>Telephone</td>
<td>+1-800-932-5000 toll-free within US/CA</td>
</tr>
<tr>
<td></td>
<td>+1-610-386-1700</td>
</tr>
<tr>
<td>Telefax</td>
<td>+1-610-728-2103</td>
</tr>
</tbody>
</table>
SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous to the aquatic environment, chronic, category 3</td>
<td>H412</td>
</tr>
</tbody>
</table>

2.2 Label elements
Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

Hazard pictograms
not applicable

Signal word: not applicable

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

Precautionary statements

<table>
<thead>
<tr>
<th>Precautionary statements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P273</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

Other hazards

Hazards not otherwise classified (HNOC)
no data available
SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Concentration</th>
<th>Product identifier</th>
<th>Hazard classes and hazard categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium permanganate</td>
<td>0,25 &lt; 2,5 %</td>
<td>CAS No.: 7722-64-7</td>
<td>Ox. Sol. 2 - H272</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 - H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1 - H410</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 General information

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

After inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of any immediate medical attention and special treatment needed

no data available

4.4 Self-protection of the first aider

First aider: Pay attention to self-protection!

4.5 Information to physician

no data available
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
The product itself does not burn.
Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons
no restriction

5.2 Specific hazards arising from the chemical
In case of fire may be liberated:
Pyrolysis products, toxic

5.3 Advice for firefighters
DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.

5.4 Additional information
Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray/stream to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
In case of major fire and large quantities: Remove persons to safety. Use personal protection equipment. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so.

6.2 Environmental precautions
Do not allow to enter into surface water or drains. Discharge into the environment must be avoided. Ensure waste is collected and contained.

6.3 Methods and material for containment and cleaning up
Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Collect in closed and suitable containers for disposal.

6.4 Additional information
Clear spills immediately.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid: Inhalation Avoid contact with skin and eyes. Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Protect from moisture.

7.2 Conditions for safe storage, including any incompatibilities
storage temperature: no data available
Storage class: no data available
Keep container tightly closed in a cool, well-ventilated place. Keep/Store away from combustible materials.
7.3 Specific end use(s)  
no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters  

Does not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Engineering controls

Appropriate engineering controls  

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)  

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection  

Eye glasses with side protection

Skin protection  

When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Recommended glove articles

By short-term hand contact  

Suitable material: NBR (Nitrile rubber)  
Thickness of the glove material: 0,12 mm  
Breakthrough time (maximum wearing time): > 480 min

By long-term hand contact  

Suitable material: NBR (Nitrile rubber)  
Thickness of the glove material: 0,38 mm  
Breakthrough time (maximum wearing time): > 480 min

Respiratory protection  

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information  

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls  

no data available
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Appearance
   Physical state: liquid
   Color: no data available
(b) Odour: no data available
(c) Odour threshold: no data available

Safety relevant basic data

(d) pH: no data available
(e) Melting point/freezing point: no data available
(f) Initial boiling point and boiling range: no data available
(g) Flash point: no data available
(h) Evaporation rate: no data available
(i) Flammability (solid, gas): not applicable
(j) Flammability or explosive limits
   Lower explosion limit: no data available
   Upper explosion limit: no data available
(k) Vapour pressure: no data available
(l) Vapour density: no data available
(m) Relative density: no data available
(n) Solubility(ies)
   Water solubility (g/L): no data available
   Soluble (g/L) in Ethanol: no data available
(o) Partition coefficient: n-octanol/water: no data available
(p) Auto-ignition temperature: no data available
(q) Decomposition temperature: no data available
(r) Viscosity
   Kinematic viscosity: no data available
   Dynamic viscosity: no data available
(s) Explosive properties: not applicable
(t) Oxidising properties: not applicable

9.2 Other information

Bulk density: not applicable
Refraction index: no data available
Dissociation constant: no data available
Surface tension: no data available
Henry constant: no data available

SECTION 10: Stability and reactivity

10.1 Reactivity
no data available
10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
The generally known reaction partners of water.

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
no data available

10.6 Hazardous decomposition products
no data available

10.7 Additional information
no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects
Acute oral toxicity:
Potassium permanganate - LD50: > 750 mg/kg - Rat - (RTECS)
Potassium permanganate - LDLo: > 100 mg/kg - Human - (IUCLID)

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
no data available

Irritant and corrosive effects
Primary irritation to the skin:
not applicable

Irritation to eyes:
not applicable

Irritation to respiratory tract:
not applicable
Respiratory or skin sensitization
In case of skin contact: not sensitising
After inhalation: not sensitising

STOT-single exposure
not applicable

STOT-repeated exposure
not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>no data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.

Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
not applicable

Other adverse effects
no data available

Additional information
no data available

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:

Daphnia toxicity:
Potassium permanganate - EC50: 0.08 mg/l (48 h) - Office of Pesticide Programs 2000. Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)). Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.

Algae toxicity:
Potassium permanganate - EC50: 0.45 mg/l (72 h) - Paixao, S.M., L. Silva, A. Fernandez, K. O'Rourke, E. Mendonca, and A. Picado 2008. Performance of a Miniaturized Algal Bioassay in Phytotoxicity Screening. Ecotoxicology 17(3):165-171
12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water: no data available

12.4 Mobility in soil:
no data available

12.5 Results of PBT/vPvB assessment
no data available

12.6 Other adverse effects
no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product
Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package
Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

Additional information
no data available

SECTION 14: Transport information

Land transport (DOT)

No dangerous good in sense of this transport regulation.

Sea transport (IMDG)

No dangerous good in sense of this transport regulation.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant
Air transport (ICAO-TI / IATA-DGR)

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

SARA 313 Components
no data available
no data available
no data available

Pennsylvania Right To Know Components
no data available

New Jersey Right To Know Components
no data available

California Prop. 65 Components
no data available

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail

Additional information
Indication of changes: general update

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and its Affiliates shall not be held liable for any damage resulting from handling.