# Safety Data Sheet

*according to Regulation (EC) No. 1907/2006 (REACH)*

| *Revision date: 11.07.2022* | *Version: 7.2* | *Print date: 11.07.2022* |
|---|---|---|

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

### 1.1 Product identifier

| | |
|---|---|
| Trade name/designation: | Potassium permanganate |
| Product No.: | 0277 |
| CAS No.: | 7722-64-7 |
| Index No.: | 025-002-00-9 |
| EU REACH No.: | A registration number is not available for this substance as the substance or its use is exempted from registration according to REACH Article 2 or the annual tonnage does not require a registration. |
| Other means of identification: | none |

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

| | |
|---|---|
| Relevant identified uses: | General chemical reagent |

### 1.3 Details of the supplier of the safety data sheet

*United Kingdom*

***VWR International Ltd.***

| | |
|---|---|
| Street | Hunter Boulevard, Magna Park |
| Postal code/City | Lutterworth, LE17 4XN |
| Telephone | 0800 22 33 44 |
| Telefax | 01455 55 85 86 |
| E-mail (competent person) | SDS@avantorsciences.com |

### 1.4 Emergency phone number

| | |
|---|---|
| Telephone | +44 (0) 1270 502894 (CareChem24) |

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

### 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

| Hazard classes and hazard categories | Hazard statements |
|---|---|
| Oxidising solid, category 2 | H272 |
| Acute toxicity, category 4, oral | H302 |
| Skin corrosion, category 1C | H314 |
| Serious eye damage, category 1 | H318 |
| Specific target organ toxicity (repeated exposure), category 2 | H373 |
| Hazardous to the aquatic environment, acute, category 1 | H400 |
| Hazardous to the aquatic environment, chronic, category 1 | H410 |
| Reproductive toxicity, category 2 | H361d |

### 2.2 Label elements

### 2.2.1 Labelling according to Regulation (EC) No. 1272/2008 [CLP]

**Hazard pictograms**

**Signal word:** Danger

| Hazard statements | |
|---|---|
| H272 | May intensify fire; oxidiser. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H361d | Suspected of damaging the unborn child. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H410 | Very toxic to aquatic life with long lasting effects. |

| Precautionary statements | |
|---|---|
| P201 | Obtain special instructions before use. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P220 | Keep/Store away from clothing/combustible materials. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P273 | Avoid release to the environment. |
| P301+P330+P331 | IF SWALLOWED: rinse mouth. Do NOT induce vomiting. |
| P302+P352 | IF ON SKIN: Wash with plenty of water/… |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P310 | IF exposed or concerned: Immediately call a POISON CENTER/doctor. |

### 2.3 Other hazards

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

## SECTION 3: Composition / information on ingredients

### 3.1 Substances

| | |
|---|---|
| Substance name: | Potassium permanganate |
| Molecular formula: | KMnO4 |
| Molecular weight: | 158.03 g/mol |
| CAS No.: | 7722-64-7 |
| EU REACH registration No.: | A registration number is not available for this substance as the substance or its use is exempted from registration according to REACH Article 2 or the annual tonnage does not require a registration. |
| EC No.: | 231-760-3 |
| ATE, SCL and/or M-factor: | none |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

IF exposed: Immediately call a POISON CENTRE/doctor. If unconscious but breathing normally, 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

Immediately call a POISON CENTRE/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

### 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

Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

### Self-protection of the first aider

First aider: Pay attention to self-protection!

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

no data available

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

no data available

# SECTION 5: Firefighting measures

## 5.1 Extinguishing media

**Suitable extinguishing media**

The product itself does not burn.
May intensify fire; oxidiser.
Co-ordinate fire-fighting measures to the fire surroundings.

**Extinguishing media which must not be used for safety reasons**

no restriction

## 5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated:
Pyrolysis products, toxic

## 5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.
Special protective equipment for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

### Additional information

Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use water spray jet to protect personnel and to cool endangered containers.
In case of fire: Evacuate area.

# SECTION 6: Accidental release measures

## 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation.

## 6.2 Environmental precautions

Do not allow to enter into surface water or drains.

### 6.3 Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. 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 eyes and skin.
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.

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

### 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15-25°C
Storage class: 5.1B
Keep container tightly closed and in a well-ventilated place. Keep/Store away from combustible materials.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

| Ingredient (Designation) | Regulatory information | Country | Limit value type (country of origin) | Limit value | Remark |
|---|---|---|---|---|---|
| Potassium permanganate | DNEL | EU | Worker, Inhalation, long-term, systemic | 0.2 mg/m³ | |
| Potassium permanganate | PNEC | EU | aquatic, freshwater | 0.06 µg/l | |
| Potassium permanganate | PNEC | EU | Sewage treatment plant | 1.64 mg/l | |

### 8.2 Exposure controls

#### 8.2.1 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.

**8.2.2 Personal protection equipment**

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

*Eye/face protection*

Eye glasses with side protection DIN-/EN-Norms DIN EN 166
Recommendation: VWR 111-0432

*Skin protection*

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Recommended glove articles DIN-/EN-Norms EN ISO 374 In the case of wanting to use the gloves again, clean them before taking off and air them well.

By short-term hand contact

| | |
|---|---|
| Suitable material: | NBR (Nitrile rubber) |
| Thickness of the glove material: | 0,12 mm |
| Breakthrough time:: | > 480 min |
| Recommended glove articles: | VWR 112-0998 |

By long-term hand contact

| | |
|---|---|
| Suitable material: | NBR (Nitrile rubber) |
| Thickness of the glove material: | 0,38 mm |
| Breakthrough time:: | > 480 min |
| Recommended glove articles: | VWR 112-3717 / 112-1381 |

*Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation

| | |
|---|---|
| Suitable respiratory protection apparatus: | Filtering Half-face mask (DIN EN 149) |
| Recommendation: | VWR 111-0451 |
| Suitable material: | P3 |
| Recommendation: | VWR 111-0244 |

*Additional information*

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

**8.2.3** *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: | solid |
| Colour: | dark violet |
| (b) Odour: | odourless |
| (c) Odour threshold: | no data available |

### Safety relevant basic data

| | |
|---|---|
| (d) pH: | 7-9 (20 g/l; H2O; 20 °C) |
| (e) Melting point/freezing point: | > 240 °C |
| (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: | < 0.01 hPa (20 °C) |
| (l) Vapour density: | no data available |
| (m) Density: | 2.7 g/cm³ (20 °C) |
| (n) Solubility(ies) | |
| Water solubility: | 64 g/l (20 °C) |
| (o) Partition coefficient: n-octanol/water: | no data available |
| (p) Auto-ignition temperature: | no data available |
| (q) Decomposition temperature: | 240 °C (1013 hPa) |
| (r) Viscosity | |
| Kinematic viscosity: | no data available |
| Dynamic viscosity: | no data available |
| (s) Explosive properties: | not applicable |
| (t) Oxidising properties: | May intensify fire; oxidiser. |
| (u) Particle characteristics: | not applicable - no nanoform/not combustible |

### 9.2 Other information

| | |
|---|---|
| Bulk density: | no data available |
| Refraction index: | no data available |
| Dissociation constant: | no data available |
| Surface tension: | no data available |
| Henry's Law Constant: | no data available |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No hazardous reaction when handled and stored according to provisions.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

### 10.3 Possibility of hazardous reactions

Contact with combustible material may cause fire.
Explosion hazard with:
sulphuric acid
Peroxides
Powdered metals

### 10.4 Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

### 10.5 Incompatible materials

Strong acid
Peroxides
Reducing agent
Powdered metals
Keep away from combustible material.
Contact with
hydrochloric acid liberates chlorine gas.

### 10.6 Hazardous decomposition products

Gases/vapours, corrosive

### 10.7 Additional information

no data available

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute effects**
*Acute oral toxicity*:
LD50: 2000 mg/kg - Rat - (IUCLID)

LDLo: > 100 mg/kg - Human - (IUCLID)

*Acute dermal toxicity*:
LD50: 2000 mg/kg - Rat - (IUCLID)

*Acute inhalation toxicity*:
no data available

**Irritant and corrosive effects**
*Primary irritation to the skin:*
Causes severe skin burns and eye damage.

*Irritation to eyes:*
Causes serious eye damage.

*Irritation to respiratory tract:*
not applicable

**Respiratory or skin sensitisation**
In case of skin contact: not sensitising
After inhalation: not sensitising

**STOT-single exposure**
not applicable

**STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
**Carcinogenicity**
No indication of human carcinogenicity.

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

**Reproductive toxicity**
Suspected of damaging the unborn child.

**Aspiration hazard**
not applicable

**Other adverse effects**
no data available

**Additional information**
no data available

## SECTION 12: Ecological information

### 12.1 Ecotoxicity

**Fish toxicity:**
LC50: 0,47 mg/l (96 h) Poecilia reticulata - IUCLID

**Daphnia toxicity**:
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:**
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

**Bacteria toxicity:**
no data available

### 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
This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

### 12.6 Other adverse effects
no data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

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

Waste code product: 160904

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

**Additional information**
no data available

## SECTION 14: Transport information

### Land transport (ADR/RID)

| | | |
|---|---|---|
| 14.1 | UN-No.: | 1490 |
| 14.2 | Proper Shipping Name: | POTASSIUM PERMANGANATE |
| 14.3 | Class(es): | 5.1 |
| | Classification code: | O2 |
| | Hazard label(s): | 5.1 |
| 14.4 | Packing group: | II |
| 14.5 | Environmental hazards: | Dangerous for the environment |
| 14.6 | Special precautions for user: | |
| | Hazard identification number (Kemler No.): | 50 |
| | tunnel restriction code: | E |
| | | (Passage forbidden through tunnels of category E.) |

### Sea transport (IMDG)

| | | |
|---|---|---|
| 14.1 | UN-No.: | 1490 |
| 14.2 | Proper Shipping Name: | POTASSIUM PERMANGANATE |
| 14.3 | Class(es): | 5.1 |
| | Classification code: | |
| | Hazard label(s): | 5.1 |
| 14.4 | Packing group: | II |
| 14.5 | Environmental hazards: | Dangerous for the environment |
| | Marine pollutant: | Yes (P) |
| 14.6 | Special precautions for user: | |
| | Segregation group: | 14 |
| | EmS-No. | F-H S-Q |
| 14.7 | Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | |
| | not relevant | |

### Air transport (ICAO-TI / IATA-DGR)

| | | |
|---|---|---|
| 14.1 | UN-No.: | 1490 |
| 14.2 | Proper Shipping Name: | POTASSIUM PERMANGANATE |
| 14.3 | Class(es): | 5.1 |
| | Classification code: | |
| | Hazard label(s): | 5.1 |
| 14.4 | Packing group: | II |
| 14.5 | Special precautions for user: | |

## SECTION 15: Regulatory information

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

**EU legislation**

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)
- Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)
- Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

**National regulations**

-

Water hazard class: strongly hazardous to water

## 15.2 Chemical Safety Assessment

For this substance a chemical safety assessment has not been carried out.

## SECTION 16: Other information

**Abbreviations and acronyms**

ACGIH - American Conference of Governmental Industrial Hygiensts
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)
DNEL - Derived No Effect Level
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
KOSHA - Korea Occupational Safety and Health Agency
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PNEC - Predicted No Effect Concentration
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail
STV - Short Term Value
SVHC - Substances of Very High Concern
vPvB - very Persistent, very Bioaccumulative

Training advice: Provide adequate information, instruction and training for operators.

**Key literature references and sources for data**
This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

**Additional information**

| | |
|---|---|
| Indication of changes | Section 2<br><br>If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com). |

*The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.*