

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 23-Oct-2009 Revision Date 11-Oct-2023 Revision Number 13

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Potassium permanganate

Cat No.: 424170000; 424170025; 424170250; 424175000

 Index No
 025-002-00-9

 CAS No
 7722-64-7

 EC No
 231-760-3

 Molecular Formula
 K Mn O4

REACH registration number -

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

Recommended Use Laboratory chemicals.

Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Product category PC21 - Laboratory chemicals

Process categories PROC15 - Use as a laboratory reagent

Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

UK entity/business name

Fisher Scientific UK Bishop Meadow Road,

Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Potassium permanganate

Revision Date 11-Oct-2023

Oxidizing solids Category 2 (H272)

Health hazards

Acute oral toxicityCategory 4 (H302)Skin Corrosion/IrritationCategory 1 C (H314)Serious Eye Damage/Eye IrritationCategory 1 (H318)Reproductive ToxicityCategory 2 (H361d)Specific target organ toxicity - (repeated exposure)Category 2 (H373)

Environmental hazards

Acute aquatic toxicity
Chronic aquatic toxicity
Category 1 (H400)
Category 1 (H410)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H272 May intensify fire; oxidizer
- 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

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P220 Keep away from clothing and other combustible materials
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment

Toxicity to Soil Dwelling Organisms

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

Revision Date 11-Oct-2023

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Potassium permanganate	7722-64-7	EEC No. 231-760-3	>95	Ox. Sol. 2 (H272) Skin Corr. 1C (H314) Eye Dam. 1 (H318) Acute Tox. 4 (H302) STOT RE2 (H373) Repr. 2 (H361d) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Potassium permanganate	-	10	-

REACH registration number	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Immediate medical attention is required. Keep eye wide open while rinsing.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes. Call a physician immediately.

Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water.

Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison

control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a

one-way valve or other proper respiratory medical device.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

Notes to Physician Treat symptomatically.

Revision Date 11-Oct-2023

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Heavy metal oxides, Potassium oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Potassium permanganate

Revision Date 11-Oct-2023

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store near combustible materials.

Class 5.1B

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC

Component	The United Kingdom	European Union	Ireland
Potassium permanganate	STEL: 0.6 mg/m ³ 15 min	TWA: 0.05 mg/m ³ (15min)	
	STEL: 0.15 mg/m ³ 15 min		
	TWA: 0.2 mg/m ³ 8 hr		
	TWA: 0.05 mg/m ³ 8 hr		

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Potassium permanganate 7722-64-7 (>95)				DNEL = 0.2mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment		Microorganisms in sewage treatment	` ' '
Potassium permanganate 7722-64-7 (>95)	PNEC = 0.06μg/L		PNEC = 0.6µg/L	PNEC = 1.64mg/L	

8.2. Exposure controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Potassium permanganate Revision Date 11-Oct-2023

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Long sleeved clothing.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced **Recommended Filter type:** Particulates filter conforming to EN 143

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water

system. Local authorities should be advised if significant spillages cannot be contained.

Solid

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Solid Powder

Appearance Dark brown Odor Odorless

Odor Threshold
Melting Point/Range
Softening Point
Boiling Point/Range
No data available
No information available

Flammability (liquid) Not applicable

Flammability (solid,gas)

No information available

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition Temperature Not applicable

Decomposition Temperature 240 °C

Revision Date 11-Oct-2023 Potassium permanganate

(16 a/l @ 20°C) рH

Viscosity Not applicable

Water Solubility 64 g/L (20°C)

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component log Pow Potassium permanganate -1.73

Vapor Pressure No data available **Density / Specific Gravity** No data available **Bulk Density** No data available **Vapor Density** Not applicable

No data available **Particle characteristics**

9.2. Other information

K Mn O4 **Molecular Formula Molecular Weight** 158.04 **Oxidizing Properties** Oxidizer

Not applicable - Solid **Evaporation Rate**

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity Yes

10.2. Chemical stability

Stable under normal conditions. Oxidizer: Contact with combustible/organic material may

Solid

Solid

cause fire.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

None under normal processing. **Hazardous Reactions**

10.4. Conditions to avoid

Incompatible products. Excess heat. Combustible material.

10.5. Incompatible materials

Reducing Agent. Strong acids. Strong reducing agents. Combustible material.

10.6. Hazardous decomposition products

Heavy metal oxides. Potassium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral Category 4

Dermal Based on available data, the classification criteria are not met Inhalation Based on available data, the classification criteria are not met

Component	Component LD50 Oral		LC50 Inhalation	
Potassium permanganate	LD50 = 750 mg/kg (Rat)	LD50 > 2000 mg/kg (Rat)	-	

Revision Date 11-Oct-2023 Potassium permanganate

(b) skin corrosion/irritation; Category 1 C

Category 1 (c) serious eye damage/irritation;

(d) respiratory or skin sensitization;

Respiratory Skin

Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Category 2

Possible risk of harm to the unborn child. **Reproductive Effects**

(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Category 2

Target Organs Brain.

(j) aspiration hazard; Not applicable

Solid

delayed

Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes

severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any

known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment. Do not allow material to contaminate ground water system. The product

contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Potassium permanganate	2.97-3.11 mg/L LC50 96 h		0.41 mg/l/72h EC50
	3.16-3.77 mg/L LC50 96 h		
	3.3-3.93 mg/L LC50 96 h		
	2.3 mg/L LC50 96 h		
	0.769-1.27 mg/L LC50 96 h		
	1.08-1.38 mg/L LC50 96 h		
	1.8-5.6 mg/L LC50 96 h		
	2.7 mg/L LC50 96 h		

Potassium permanganate

Component	Microtox	M-Factor
Potassium permanganate		10

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special

Revision Date 11-Oct-2023

pre-treatment is necessary

Persistence Degradability May persist, based on information available. Not relevant for inorganic substances.

Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste

water treatment plants.

12.3. Bioaccumulative potential

May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Potassium permanganate	-1.73	No data available

12.4. Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not

require assessment.

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused

Products

Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in

accordance with local regulations.

Dispose of this container to hazardous or special waste collection point. **Contaminated Packaging**

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the

> application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

Potassium permanganate Revision Date 11-Oct-2023

14.1. UN number UN1490

14.2. UN proper shipping name POTASSIUM PERMANGANATE

14.3. Transport hazard class(es) 5.1 14.4. Packing group II

ADR

14.1. UN number UN1490

14.2. UN proper shipping name POTASSIUM PERMANGANATE

14.3. Transport hazard class(es) 5.1 **14.4. Packing group** II

IATA

14.1. UN number UN1490

14.2. UN proper shipping name POTASSIUM PERMANGANATE

14.3. Transport hazard class(es) 5.1 14.4. Packing group II

14.5. Environmental hazards Dangerous for the environment

Product is a marine pollutant according to the criteria set by IMDG/IMO

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

X = listed. US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Potassium permanganate	7722-64-7	231-760-3	ı	1	X	Χ	KE-29180	Χ	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Potassium permanganate	7722-64-7	Х	ACTIVE	X	-	Х	X	X

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		Candidate List of Substances of Very High
				Concern (SVHC)
Potassium permanganate	7722-64-7	-	Use restricted. See item	-
			75.	
			(see link for restriction	
			details)	

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Potassium permanganate

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) -	Seveso III Directive (2012/18/EC) -		
		Qualifying Quantities for Major Accident	Qualifying Quantities for Safety Report		
		Notification	Requirements		
Potassium permanganate	7722-64-7	Not applicable	Not applicable		

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class		
Potassium permanganate	WGK3			

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H361d - Suspected of damaging the unborn child

H373 - May cause damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H272 - May intensify fire; oxidizer

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

Substances List

Revision Date 11-Oct-2023

Potassium permanganate Revision Date 11-Oct-2023

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ACGIH - American Conference of Governmental Industrial Hygienists

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

ENCS - Japanese Existing and New Chemical Substances

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of ICAO/IATA - International Civil Aviation Organization/International Air

Dangerous Goods by Road

WEL - Workplace Exposure Limit

DNEL - Derived No Effect Level

LC50 - Lethal Concentration 50%

RPE - Respiratory Protective Equipment

NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

Transport Association

MARPOL - International Convention for the Prevention of Pollution from

BCF - Bioconcentration factor

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Creation Date 23-Oct-2009 **Revision Date** 11-Oct-2023 Not applicable. **Revision Summary**

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of Safety Data Sheet