

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

Creation Date 26-Jan-2010 Revision Date 22-Sep-2023 Revision Number 8

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

1.1. Product identifier

Product Description: Potassium persulfate

Cat No.: 202010000; 202010010; 202010250; 202012500; 202015000

Synonyms Potassium peroxydisulfate

 Index No
 016-061-00-1

 CAS No
 7727-21-1

 EC No
 231-781-8

 Molecular Formula
 K2 O8 S2

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 persulfate

Revision Date 22-Sep-2023

Page 2/12

| Oxidizing solids | Category 3 (H272) |
|--|-------------------|
| Health hazards | |
| Acute oral toxicity | Category 4 (H302) |
| Skin Corrosion/Irritation | Category 2 (H315) |
| Serious Eye Damage/Eye Irritation | Category 2 (H319) |
| Respiratory Sensitization | Category 1 (H334) |
| Skin Sensitization | Category 1 (H317) |
| Specific target organ toxicity - (single exposure) | Category 3 (H335) |
| Environmental hazards | |
| Based on available data, the classification criteria are not met | |

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

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

Precautionary Statements

P220 - Keep away from clothing and other combustible materials

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and 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

P342 + P311 - If experiencing respiratory symptoms: 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

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Potassium persulfate

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 persulfate | 7727-21-1 | EEC No. 231-781-8 | <=100 | Ox. Sol. 3 (H272) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) STOT SE 3 (H335) |

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

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

medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. 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. Get

medical attention.

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

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain,

muscle pain or flushing

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

Notes to Physician Treat symptomatically.

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.

ACR20201

Revision Date 22-Sep-2023

Revision Date 22-Sep-2023

5.2. Special hazards arising from the substance or mixture

Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

Hazardous Combustion Products

Sulfur 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

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep away from clothing and other combustible materials. Avoid dust formation.

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

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Keep away from clothing and other combustible materials. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation. Wash hands before breaks and immediately after handling the product.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

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

Technical Rules for Hazardous Substances (TRGS) 510 Class 5.1B Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Use in laboratories

Revision Date 22-Sep-2023

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): IRE - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

| Component | The United Kingdom | European Union | Ireland |
|----------------------|--------------------|----------------|------------------------------------|
| Potassium persulfate | | | TWA: 0.1 mg/m ³ 8 hr. |
| · · | | | STEL: 0.3 mg/m ³ 15 min |

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 (Dermal) | Acute effects systemic (Dermal) | Chronic effects local (Dermal) | Chronic effects systemic (Dermal) |
|----------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Potassium persulfate | DNEL = 2.248mg/cm2 | DNEL = 400mg/kg | DNEL = 0.102mg/cm2 | DNEL = 18.2mg/kg |
| 7727-21-1 (<=100) | | bw/day | | bw/day |

| Component | mponent Acute effects local (Inhalation) | | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) | |
|--|--|-----------------------------|------------------------------------|---------------------------------------|--|
| Potassium persulfate 7727-21-1 (<=100) | | DNEL = 590mg/m ³ | DNEL = 2.06mg/m ³ | $DNEL = 2.06 mg/m^3$ | |

Predicted No Effect Concentration (PNEC)

See values below.

| Component | Fresh water | Fresh water | Water Intermittent | Microorganisms in | Soil (Agriculture) |
|----------------------|-------------|-------------|--------------------|-------------------|--------------------|
| | | sediment | | sewage treatment | |
| Potassium persulfate | PNEC = | PNEC = | PNEC = 0.763mg/L | PNEC = 3.6mg/L | PNEC = |
| 7727-21-1 (<=100) | 0.0763mg/L | 0.275mg/kg | | | 0.015mg/kg soil dw |
| · | _ | sediment dw | | | |

| Component | Marine water | Marine water sediment | Marine water intermittent | Food chain | Air |
|---|------------------|--------------------------------------|---------------------------|------------|-----|
| Potassium persulfate 7727-21-1 (<=100) | PNEC = 0.011mg/L | PNEC = 0.0396mg/kg sediment dw | | | |

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

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)

Potassium persulfate Revision Date 22-Sep-2023

Hand Protection Protective gloves

Glove material Breakthrough time Glove thickness EU standard Glove comments

Natural rubber See manufacturers - EN 374 (minimum requirement)

Nitrile rubber recommendations

Neoprene
PVC

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

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 No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Solid

Appearance White Odor Odorless

Odor ThresholdNo data availableMelting Point/Range100 °C / 212 °FSoftening PointNo data availableBoiling Point/RangeNo information available

Flammability (liquid) Not applicable Solid

Flammability (solid,gas) No information available

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition Temperature No data available

Decomposition Temperature 100 °C pH 4-5

 pH
 4-5
 50 g/l aq.sol

 Viscosity
 Not applicable
 Solid

 Water Solubility
 5g/100ml (20°C)

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor PressureNo information availableDensity / Specific GravityNo data available

Potassium persulfate Revision Date 22-Sep-2023

Bulk Density No data available

Vapor Density Not applicable Solid

Particle characteristics No data available

9.2. Other information

Molecular FormulaK2 O8 S2Molecular Weight270.3Oxidizing PropertiesOxidizer

Evaporation Rate Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Oxidizer: Contact with combustible/organic material may cause fire. Hygroscopic.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat. Combustible material. Avoid dust formation. Exposure

to moist air or water.

10.5. Incompatible materials

Strong oxidizing agents. Strong reducing agents. Strong bases. Alcohols. Organic

materials. Finely powdered metals. Combustible material.

10.6. Hazardous decomposition products

Sulfur 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

DermalBased 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 persulfate | 802 mg/kg (Rat) | > 10000 mg/kg (Rabbit) | LC50 > 42.9 mg/L (Rat) 1 h | | |

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

Potassium persulfate Revision Date 22-Sep-2023

(d) respiratory or skin sensitization;

Respiratory Category 1 Skin Category 1

May cause sensitization by skin contact

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

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

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Category 3

Results / Target organs Respiratory system.

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

None known. **Target Organs**

Not applicable (j) aspiration hazard;

Solid

Other Adverse Effects The toxicological properties have not been fully investigated.

delayed

Symptoms / effects, both acute and Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

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

Do not empty into drains. **Ecotoxicity effects**

| Component | Freshwater Fish | Water Flea | Freshwater Algae |
|----------------------|---|------------|------------------|
| Potassium persulfate | Potassium persulfate LC50: 100 mg/L/96h | | |
| | (P.reticulata) | magna) | |

12.2. Persistence and degradability

Persistence Soluble in water, Persistence is unlikely, based on information available.

Not relevant for inorganic substances. Degradability

12.3. Bioaccumulative potential Bioaccumulation is unlikely

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

Potassium persulfate

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

Revision Date 22-Sep-2023

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

Waste is classified as hazardous. Dispose of in accordance with federal, state and local regulations. Dispose of in accordance with the European Directives on waste and

hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Do not reuse empty containers. Dispose of in accordance with local regulations. Dispose of

this container to hazardous or special waste collection point.

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

application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product

was used. Do not empty into drains.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1492

14.2. UN proper shipping name POTASSIUM PERSULFATE

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

<u>ADR</u>

14.1. UN number UN1492

14.2. UN proper shipping name POTASSIUM PERSULPHATE

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

<u>IATA</u>

14.1. UN number UN1492

14.2. UN proper shipping name POTASSIUM PERSULFATE

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

Potassium persulfate Revision Date 22-Sep-2023

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

CAS No

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

Component

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

EINECS ELINCS

| | Potassium persulfate | 7727-21-1 | 231-781-8 | - | - | X | X | KE-12177 | Х | X |
|-----|----------------------|-----------|-----------|---------|--------------------|-----|------|----------|-------|-------|
| | | | | | | | | | | |
| | Component | CAS No | TSCA | | ventory ation - | DSL | NDSL | AICS | NZIoC | PICCS |
| - 1 | | I | | Active- | Inactive | 1 | | | | |

NLP

IECSC

TCSI

KECL

ENCS

ISHL

7727-21-1 Potassium persulfate Х **ACTIVE**

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 | | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|----------------------|-----------|---|--|---|
| Potassium persulfate | 7727-21-1 | - | Use restricted. See item 75. (see link for restriction details) | • |

REACH links

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

Seveso III Directive (2012/18/EC)

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report | | |
|----------------------|-----------|--|----------------|--|
| | | Notification | Requirements | |
| Potassium persulfate | 7727-21-1 | 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 .

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 persulfate | WGK1 | |

| Component | France - INRS (Tables of occupational diseases) | |
|----------------------|--|--|
| Potassium persulfate | Tableaux des maladies professionnelles (TMP) - RG 65,RG 66 | |

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

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

H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

Legend

CAS - Chemical Abstracts Service

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

Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances **IECSC** - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

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

ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ACR20201

Key literature references and sources for data https://echa.europa.eu/information-on-chemicals

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Potassium persulfate Revision Date 22-Sep-2023

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.

Creation Date26-Jan-2010Revision Date22-Sep-2023Revision SummaryNot applicable.

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

Disclaimer

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