

Creation Date 03-Oct-2011

Revision Date 20-Oct-2023

Revision Number 7

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

### 1.1. Product identifier

|                      |                                    |
|----------------------|------------------------------------|
| Product Description: | <u>Lithium sulfate monohydrate</u> |
| Cat No. :            | L/2400/53                          |
| Synonyms             | Sulfuric acid, dilithium salt      |
| CAS No               | 10102-25-7                         |
| Molecular Formula    | Li2 O4 S . H2 O                    |

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

|                      |                          |
|----------------------|--------------------------|
| Recommended Use      | Laboratory chemicals.    |
| 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 Pharmaceuticaaan 3a  
2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

Tel: 01509 231166  
Chemtrec US: (800) 424-9300  
Chemtrec EU: 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

Based on available data, the classification criteria are not met

#### Health hazards

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

Acute oral toxicity  
Serious Eye Damage/Eye Irritation

Category 4 (H302)  
Category 2 (H319)

## 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

Warning

## Hazard Statements

H302 - Harmful if swallowed  
H319 - Causes serious eye irritation

## Precautionary Statements

P280 - Wear protective gloves and eye/face protection  
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

## 2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

## 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 |
|-----------------------------|------------|-------------------|----------|-----------------------------------------------------------------------------------------|
| Lithium sulfate monohydrate | 10102-25-7 |                   | <=100    | Acute Tox. 4 (H302)<br>Eye Irrit. 2 (H319)                                              |
| Lithium sulfate             | 10377-48-7 | EEC No. 233-820-4 | 0        | Acute Tox. 4 (H302)<br>Eye Irrit. 2 (H319)                                              |

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

FSUL2400

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

|                                           |                                                                                                                                                                    |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.                                                    |
| <b>Skin Contact</b>                       | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.                                       |
| <b>Ingestion</b>                          | Clean mouth with water. Get medical attention.                                                                                                                     |
| <b>Inhalation</b>                         | Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention. |
| <b>Self-Protection of the First Aider</b> | 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**

No information available.

## **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**

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

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

No information available.

### **5.2. Special hazards arising from the substance or mixture**

Thermal decomposition can lead to release of irritating gases and vapors.

#### **Hazardous Combustion Products**

Sulfur 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.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

### **6.2. Environmental precautions**

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. Do not let this chemical enter the environment.

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

## 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

Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

#### 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 in a dry, cool and well-ventilated place. Keep container tightly closed.

Technical Rules for Hazardous Substances (TRGS) 510 Class 13  
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

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

#### 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) |
|-------------------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Lithium sulfate<br>10377-48-7 ( 0 ) |                              |                                 |                                | DNEL = 95mg/kg<br>bw/day          |

| Component                           | Acute effects local (Inhalation) | Acute effects systemic (Inhalation) | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) |
|-------------------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------------------------|
| Lithium sulfate<br>10377-48-7 ( 0 ) |                                  |                                     |                                    | DNEL = 10mg/m <sup>3</sup>            |

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

## Predicted No Effect Concentration (PNEC)

See values below.

| Component                           | Fresh water     | Fresh water sediment                | Water Intermittent | Microorganisms in sewage treatment | Soil (Agriculture)           |
|-------------------------------------|-----------------|-------------------------------------|--------------------|------------------------------------|------------------------------|
| Lithium sulfate<br>10377-48-7 ( 0 ) | PNEC = 13.5mg/L | PNEC =<br>350.1mg/kg<br>sediment dw | PNEC = 13.5mg/L    | PNEC = 182mg/L                     | PNEC =<br>64.77mg/kg soil dw |

| Component                           | Marine water    | Marine water sediment               | Marine water intermittent | Food chain | Air |
|-------------------------------------|-----------------|-------------------------------------|---------------------------|------------|-----|
| Lithium sulfate<br>10377-48-7 ( 0 ) | PNEC = 1.35mg/L | PNEC =<br>35.01mg/kg<br>sediment dw |                           |            |     |

## 8.2. Exposure controls

### Engineering Measures

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

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 | 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 compatibility, 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

No protective equipment is needed under normal use conditions.

#### 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

Maintain adequate ventilation 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

#### Environmental exposure controls

No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

## 9.1. Information on basic physical and chemical properties

|                                         |                          |                                   |
|-----------------------------------------|--------------------------|-----------------------------------|
| Physical State                          | Powder Solid             |                                   |
| Appearance                              | White                    |                                   |
| Odor                                    | Odorless                 |                                   |
| Odor Threshold                          | No data available        |                                   |
| Melting Point/Range                     | 860 °C / 1580 °F         |                                   |
| Softening Point                         | No data available        |                                   |
| Boiling Point/Range                     | No 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               | No data available        |                                   |
| pH                                      | No information available |                                   |
| Viscosity                               | Not applicable           | Solid                             |
| Water Solubility                        | 295.5 g/L (20°C)         |                                   |
| Solubility in other solvents            | No information available |                                   |
| Partition Coefficient (n-octanol/water) |                          |                                   |
| Vapor Pressure                          | No data available        |                                   |
| Density / Specific Gravity              | No data available        |                                   |
| Bulk Density                            | No data available        |                                   |
| Vapor Density                           | Not applicable           | Solid                             |
| Particle characteristics                | No data available        |                                   |

## 9.2. Other information

|                   |                        |
|-------------------|------------------------|
| Molecular Formula | Li2 O4 S . H2 O        |
| Molecular Weight  | 127.96                 |
| Evaporation Rate  | Not applicable - Solid |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available

### 10.2. Chemical stability

Hygroscopic.

### 10.3. Possibility of hazardous reactions

|                          |                                          |
|--------------------------|------------------------------------------|
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions      | No information available.                |

### 10.4. Conditions to avoid

Incompatible products. Exposure to moist air or water.

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Sulfur oxides.

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

## 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     | No data available |
| Inhalation | No data available |

| Component       | LD50 Oral                | LD50 Dermal | LC50 Inhalation |
|-----------------|--------------------------|-------------|-----------------|
| Lithium sulfate | LD50 = 613 mg/kg ( Rat ) | -           | -               |

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

|             |                   |
|-------------|-------------------|
| Respiratory | No data available |
| Skin        | No data available |

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; Not applicable  
Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

**Symptoms / effects, both acute and delayed** No information available.

### 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

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

## 12.1. Toxicity

### Ecotoxicity effects

Do not empty into drains.

| Component       | Freshwater Fish | Water Flea            | Freshwater Algae |
|-----------------|-----------------|-----------------------|------------------|
| Lithium sulfate |                 | EC50: 196.79 mg/L/24h |                  |

## 12.2. Persistence and degradability

### Persistence Degradability

Soluble in water, Persistence is unlikely, based on information available.  
Not relevant for inorganic substances.

## 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 environment due to its water solubility. Highly mobile in soils

## 12.5. Results of PBT and vPvB assessment

No data available for 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 the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

#### Contaminated Packaging

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

Not regulated

### 14.1. UN number

### 14.2. UN proper shipping name

FSUL2400



# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

## 14.3. Transport hazard class(es)

## 14.4. Packing group

ADR Not regulated

## 14.1. UN number

## 14.2. UN proper shipping name

## 14.3. Transport hazard class(es)

## 14.4. Packing group

IATA Not regulated

## 14.1. UN number

## 14.2. UN proper shipping name

## 14.3. Transport hazard class(es)

## 14.4. Packing group

14.5. Environmental hazards No hazards identified

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

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)

| Component                   | CAS No     | EINECS    | ELINCS | NLP | IECSC | TCSI | KECL     | ENCS | ISHL |
|-----------------------------|------------|-----------|--------|-----|-------|------|----------|------|------|
| Lithium sulfate monohydrate | 10102-25-7 | -         | -      | -   | X     | X    | -        | -    | -    |
| Lithium sulfate             | 10377-48-7 | 233-820-4 | -      | -   | X     | X    | KE-22591 | X    | X    |

| Component                   | CAS No     | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|-----------------------------|------------|------|-----------------------------------------------|-----|------|------|-------|-------|
| Lithium sulfate monohydrate | 10102-25-7 | -    | -                                             | -   | -    | X    | X     | X     |
| Lithium sulfate             | 10377-48-7 | X    | ACTIVE                                        | X   | -    | X    | 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 Not applicable

| Component                   | CAS No     | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-----------------------------|------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Lithium sulfate monohydrate | 10102-25-7 | -                                                                   | -                                                                             | -                                                                                                     |
| Lithium sulfate             | 10377-48-7 | -                                                                   | -                                                                             | -                                                                                                     |

#### Seveso III Directive (2012/18/EC)

| Component | CAS No | Seveso III Directive (2012/18/EC) - | Seveso III Directive (2012/18/EC) - |
|-----------|--------|-------------------------------------|-------------------------------------|
|-----------|--------|-------------------------------------|-------------------------------------|

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

|                             |            | Qualifying Quantities for Major Accident Notification | Qualifying Quantities for Safety Report Requirements |
|-----------------------------|------------|-------------------------------------------------------|------------------------------------------------------|
| Lithium sulfate monohydrate | 10102-25-7 | Not applicable                                        | Not applicable                                       |
| Lithium sulfate             | 10377-48-7 | 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 .

## 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 |
|-----------------------------|---------------------------------------|-------------------------|
| Lithium sulfate monohydrate | WGK1                                  |                         |
| Lithium sulfate             | WGK1                                  |                         |

## 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

H302 - Harmful if swallowed

H319 - Causes serious eye irritation

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical 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

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

**DSL/NDL** - 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

**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

# SAFETY DATA SHEET

Lithium sulfate monohydrate

Revision Date 20-Oct-2023

**PBT** - Persistent, Bioaccumulative, Toxic

**vPvB** - very Persistent, very Bioaccumulative

**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

## Key literature references and sources for data

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

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

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

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

## 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 Date** 03-Oct-2011

**Revision Date** 20-Oct-2023

**Revision Summary** Not 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**