

## SAFETY DATA SHEET

Creation Date 07-May-2010

Revision Date 22-May-2024

Revision Number 6

### 1. Identification

**Product Name** Zinc sulfate monohydrate

**Cat No. :** AC389800000; AC389800010; AC389800050; AC389802500

**CAS No** 7446-19-7  
**Synonyms** No information available

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

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

##### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **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

### 2. Hazard(s) identification

#### **Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                   |            |
|-----------------------------------|------------|
| Acute oral toxicity               | Category 4 |
| Serious Eye Damage/Eye Irritation | Category 1 |

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Harmful if swallowed  
Causes serious eye damage

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

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

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor/physician

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

| Component                 | CAS No    | Weight % |
|---------------------------|-----------|----------|
| Zinc sulfate, monohydrate | 7446-19-7 | 100      |
| Zinc sulfate              | 7733-02-0 | -        |

### 4. First-aid measures

|  |   |
|--|---|
| <b>General Advice</b>                      | If symptoms persist, call a physician.  |
| <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 plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| <b>Inhalation</b>                          | Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.      |
| <b>Ingestion</b>                           | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.             |
| <b>Most important symptoms and effects</b> | Causes severe eye damage.   |
| <b>Notes to Physician</b>                  | Treat symptomatically   |

### 5. Fire-fighting measures

|                                       |  |
|---------------------------------------|--|
| <b>Suitable Extinguishing Media</b>   | Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Chemical foam. |
| <b>Unsuitable Extinguishing Media</b> | No information available   |

|   |                          |
|---|--------------------------|
| <b>Flash Point</b>                      | No information available |
| <b>Method -</b>                         | No information available |
| <b>Autoignition Temperature</b>         | No information available |
| <b>Explosion Limits</b>                 |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**Specific Hazards Arising from the Chemical**

Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**

Sulfur oxides.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

**Health**  
2

**Flammability**  
0

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|   |   |
|---|---|
| <b>Personal Precautions</b>                 | Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.   |
| <b>Environmental Precautions</b>            | 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. |
| <b>Methods for Containment and Clean Up</b> | Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.  |

## 7. Handling and storage

|                 |  |
|-----------------|--|
| <b>Handling</b> | Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.  |
| <b>Storage.</b> | Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Store under an inert atmosphere. Keep container tightly closed in a dry and well-ventilated place. Protect from moisture. Incompatible Materials. Strong oxidizing agents. |

## 8. Exposure controls / personal protection

|                                      |   |
|--------------------------------------|---|
| <b>Exposure Guidelines</b>           | This product does not contain any hazardous materials with occupational exposure limit established by the region specific regulatory bodies.                                |
| <b>Engineering Measures</b>          | Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.                           |
| <b>Personal Protective Equipment</b> |   |
| <b>Eye/face Protection</b>           | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| <b>Skin and body protection</b>      | Wear appropriate protective gloves and clothing to prevent skin exposure.   |

|                                 |   |
|---------------------------------|---|
| <b>Respiratory Protection</b>   | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Recommended Filter type:</b> | Particulates filter conforming to EN 143.   |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.  |

## 9. Physical and chemical properties

|   |                          |
|---|--------------------------|
| <b>Physical State</b>                         | Solid                    |
| <b>Appearance</b>                             | White                    |
| <b>Odor</b>                                   | Odorless                 |
| <b>Odor Threshold</b>                         | No information available |
| <b>pH</b>                                     | 4.0-5.2 50 g/l aq.sol    |
| <b>Melting Point/Range</b>                    | No data available        |
| <b>Boiling Point/Range</b>                    | No information available |
| <b>Flash Point</b>                            | No information available |
| <b>Evaporation Rate</b>                       | Not applicable           |
| <b>Flammability (solid,gas)</b>               | No information available |
| <b>Flammability or explosive limits</b>       |                          |
| Upper   | No data available        |
| Lower   | No data available        |
| <b>Vapor Pressure</b>                         | No information available |
| <b>Vapor Density</b>                          | Not applicable           |
| <b>Specific Gravity</b>                       | No information available |
| <b>Solubility</b>                             | 350 g/L (20°C)           |
| <b>Partition coefficient; n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No information available |
| <b>Decomposition Temperature</b>              | 240 °C                   |
| <b>Viscosity</b>                              | Not applicable           |
| <b>Molecular Formula</b>                      | O4 S Zn . H2 O           |
| <b>Molecular Weight</b>                       | 179.47                   |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available             |
| <b>Stability</b>                        | Stable. Hygroscopic.                                   |
| <b>Conditions to Avoid</b>              | Incompatible products. Exposure to moist air or water. |
| <b>Incompatible Materials</b>           | Strong oxidizing agents                                |
| <b>Hazardous Decomposition Products</b> | Sulfur oxides  |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.               |
| <b>Hazardous Reactions</b>              | None under normal processing.                          |

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component    | LD50 Oral                 | LD50 Dermal               | LC50 Inhalation |
|--------------|---------------------------|---------------------------|-----------------|
| Zinc sulfate | LD50 = 1710 mg/kg ( Rat ) | LD50 > 2000 mg/kg ( Rat ) | Not listed      |

|   |                          |
|---|--------------------------|
| <b>Toxicologically Synergistic Products</b> | No information available |
|---|--------------------------|

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component                 | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|---------------------------|-----------|------------|------------|------------|------------|------------|
| Zinc sulfate, monohydrate | 7446-19-7 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Zinc sulfate              | 7733-02-0 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

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

**Endocrine Disruptor Information** No information available

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

## 12. Ecological information

### Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

| Component                 | Freshwater Algae   | Freshwater Fish  | Microtox  | Water Flea   |
|---------------------------|--|--|---|--|
| Zinc sulfate, monohydrate | Not listed   | Not listed   | EC50 = 3.45 mg/L 15 min<br>EC50 = 40.5 mg/L 30 min<br>EC50 = 476 mg/L 5 min<br>EC50 > 700 mg/L 16 h | Not listed   |
| Zinc sulfate              | EC50: = 0.056 mg/L, 72h static (Pseudokirchneriella subcapitata) | LC50: 0.48 - 1.72 mg/L, 96h static (Poecilia reticulata)<br>LC50: 49.23 - 64.16 mg/L, 96h semi-static (Poecilia reticulata)<br>LC50: = 0.63 mg/L, 96h (Poecilia reticulata)<br>LC50: 3.55 - 6.32 mg/L, 96h static (Lepomis macrochirus)<br>LC50: 3 - 4.6 mg/L, 96h flow-through (Lepomis macrochirus)<br>LC50: 16.85 - 27.18 mg/L, 96h static (Cyprinus carpio)<br>LC50: = 0.162 mg/L, 96h flow-through (Oncorhynchus mykiss)<br>LC50: 0.168 - 0.25 mg/L, 96h semi-static (Pimephales promelas)<br>LC50: 0.23 - 0.48 mg/L, 96h | EC50 = 3.45 mg/L 15 min<br>EC50 = 40.5 mg/L 30 min<br>EC50 = 476 mg/L 5 min<br>EC50 > 700 mg/L 16 h | EC50: 0.538 - 0.908 mg/L, 48h Static (Daphnia magna)<br>EC50: = 0.75 mg/L, 48h (Daphnia magna) |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  | (Pimephales promelas)<br>LC50: = 0.06 mg/L, 96h static (Pimephales promelas)<br>LC50: 0.218 - 0.42 mg/L, 96h flow-through (Pimephales promelas)<br>LC50: 0.34 - 0.93 mg/L, 96h static (Oncorhynchus mykiss)<br>LC50: 0.03 - 0.05 mg/L, 96h semi-static (Oncorhynchus mykiss)<br>LC50: = 0.15 mg/L, 96h semi-static (Cyprinus carpio) |  |  |
|--|--|--|--|--|

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Technical Name** Zinc sulfate, monohydrate  
**Hazard Class** 9  
**Packing Group** III

#### TDG

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Hazard Class** 9  
**Packing Group** III

#### IATA

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Hazard Class** 9  
**Packing Group** III

#### IMDG/IMO

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Hazard Class** 9  
**Packing Group** III

### 15. Regulatory information

#### United States of America Inventory

| Component                 | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|---------------------------|-----------|------|---|-----------------------------|
| Zinc sulfate, monohydrate | 7446-19-7 | -    | -   | -                           |
| Zinc sulfate              | 7733-02-0 | X    | ACTIVE  | -                           |

#### **Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b) - Notices of Export**

Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component                 | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|---------------------------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Zinc sulfate, monohydrate | 7446-19-7 | X   | -    | -         | X     | X    |      | X    | X     | -        |
| Zinc sulfate              | 7733-02-0 | X   | -    | 231-793-3 | X     | X    | X    | X    | X     | KE-35582 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations****SARA 313**

| Component                 | CAS No    | Weight % | SARA 313 - Threshold Values % | SARA 313 - Reporting thresholds |
|---------------------------|-----------|----------|-------------------------------|---------------------------------|
| Zinc sulfate, monohydrate | 7446-19-7 | 100      | 1.0 %                         | -                               |
| Zinc sulfate              | 7733-02-0 | -        | 1.0 %                         | -                               |

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

| Component                 | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|---------------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Zinc sulfate, monohydrate | -                          | -                           | X                      | -                         |
| Zinc sulfate              | X                          | 1000 lb                     | X                      | -                         |

**Clean Air Act**

Not applicable

**OSHA - Occupational Safety and Health Administration**

Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

| Component    | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|--------------|--------------------------|---|-------------------------------|
| Zinc sulfate | 1000 lb                  | -   | 1000 lb<br>454 kg             |

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component                 | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------------------|---------------|------------|--------------|----------|--------------|
| Zinc sulfate, monohydrate | -             | X          | X            | -        | -            |
| Zinc sulfate              | X             | X          | X            | -        | -            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations****Mexico - Grade**

No information available

**Authorisation/Restrictions according to EU REACH**

| 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) |
|---------------------------|-----------|---|---|---|
| Zinc sulfate, monohydrate | 7446-19-7 | -   | Use restricted. See item 75. (see link for restriction details)               | -   |
| Zinc sulfate              | 7733-02-0 | -   | Use restricted. See item 75. (see link for restriction details)               | -   |

**REACH links**

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

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

| Component                 | CAS No    | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---------------------------|-----------|----------------|------------------------------|---------------------------|--|
| Zinc sulfate, monohydrate | 7446-19-7 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |
| Zinc sulfate              | 7733-02-0 | Listed         | Not applicable               | Not applicable            | Not applicable                             |

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

Not applicable

**Other International Regulations**

| Component                 | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---------------------------|-----------|---|--|----------------------------|------------------------------------|
| Zinc sulfate, monohydrate | 7446-19-7 | Not applicable  | Not applicable   | Not applicable             | Annex I - Y23                      |
| Zinc sulfate              | 7733-02-0 | Not applicable  | Not applicable   | Not applicable             | Annex I - Y23                      |



## 16. Other information

|                  |   |
|------------------|---|
| Prepared By      | Regulatory Affairs<br>Thermo Fisher Scientific<br>Email: EMSDS.RA@thermofisher.com  |
| Creation Date    | 07-May-2010   |
| Revision Date    | 22-May-2024   |
| Print Date       | 22-May-2024   |
| Revision Summary | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). |

### 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 SDS**