

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Zinc Sulfate Monohydrate, Enriched Zinc Sulfate Monohydrate
Chemical Formula	ZnSO ₄
Molecular Weight:	179.47 g/mol
CAS No.	7446-19-7
EC No.	231-793-3
Supplier Address*	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (supplier and manufacturer)	Infotrac / +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), **H302**
 Serious eye damage (Category 1), **H318**
 Acute aquatic toxicity (Category 1), **H400**
 Chronic aquatic toxicity (Category 1), **H410**

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements



Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
P301/312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P305/351/338 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.
P330 Rinse mouth.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.
Hazards not otherwise classified (HNOC) or not covered by GHS - None

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Zinc Sulfate Monohydrate, Enriched Zinc Sulfate Monohydrate
Chemical Formula: $ZnSO_4$
CAS No.: 7446-19-7
EC No.: 231-793-3
Molecular Weight: 179.47 g/mol

Hazardous Components

Component	Classification	Concentration
Zinc Sulfate Monohydrate	Acute Toxicity 4; Eye Damage 1; Aquatic Acute 1; Aquatic Chronic 1; H302, H318, H410	≤ 100%

For the full text of the H Statements mentioned in this section, see section 16.

4. FIRST AID MEASURES

General Advice Consult a physician. Show this SDS to the doctor in attendance.
Inhalation Exposure If inhaled, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
Dermal Exposure Wash off with soap and plenty of water. Consult a physician.

<i>Eye Exposure</i>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
<i>Oral Exposure</i>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<i>Most important symptoms and effects, both acute and delayed:</i> The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11	
<i>Indication of any immediate medical attention and special treatment needed:</i> No data available	

5. FIREFIGHTING MEASURES

<i>Suitable Extinguishing Media</i>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<i>Protective Equipment</i>	Wear self-contained breathing apparatus for firefighting if necessary.
<i>Specific Hazard(s)</i>	Sulfur oxides, zinc/zinc oxides

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
<i>Environmental Precautions</i>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Avoid discharge into the environment.
<i>Methods for Cleaning Up</i>	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
<i>Reference to Other Sections</i>	For disposal see section 13.

7. HANDLING AND STORAGE

<i>Handling</i>	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.
<i>Storage</i>	Keep container tightly closed in a dry and well-ventilated place. Hygroscopic - Keep in a dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<i>Control Parameters</i>	Components with workplace control parameters Contains no substances with occupational exposure limit values.
<i>Engineering Controls</i>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal Protective Equipment	
<i>Eye/Face</i>	Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
<i>Skin</i>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

<i>Body</i>	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<i>Respiratory</i>	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<i>Control Environmental Exposure</i>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Powder
Color	Beige
Odor	No data available

Safety Data

Molecular Weight:	179.47 g/mol	pH:	N/A
Boiling Point/Range:	N/A	Melting Point/Range:	N/A
Freezing Point:	N/A	Vapor Pressure:	N/A
Vapor Density:	N/A	Bulk Density:	N/A
Relative Density:	N/A	Decomposition Temperature:	N/A
Odor Threshold:	N/A	Explosion Limits:	N/A
Viscosity:	N/A	Autoignition Temperature:	N/A
Partition Coefficient:	N/A	Oxidizing Properties	N/A
Flash Point:	N/A	Evaporation Rate:	N/A
Flammability Limits:	N/A	Water Solubility:	N/A

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable under recommended storage conditions
<i>Reactivity</i>	No data available
<i>Hazardous Decomposition Products</i>	Other decomposition products – no data available
<i>Incompatible Materials</i>	Strong oxidizing agents
<i>Conditions to Avoid</i>	Moisture
<i>Possibility of Hazardous Reaction</i>	No data available
<i>In the Event of Fire</i>	See section 5

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

<i>Inhalation:</i>	No data available
<i>Dermal:</i>	No data available
<i>Skin corrosion/irritation:</i>	No data available
<i>Serious eye damage/eye irritation:</i>	No data available
<i>Respiratory or skin sensitization:</i>	No data available
<i>Germ cell mutagenicity:</i>	No data available

Carcinogenicity

<i>IARC</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.
<i>ACGIH</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
<i>NTP</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<i>OSHA</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<i>Reproductive Toxicity</i>	No data available
<i>Specific Target Organ Toxicity / Single Exposure</i>	No data available
<i>Specific Target Organ Toxicity / Repeated Exposure</i>	No data available

Reproductive Toxicity

No data available

Specific Target Organ Toxicity

Single exposure – no data available

Specific Target Organ Toxicity

Repeated exposure – no data available

Aspiration Hazard

No data available

Stomach

Irregularities - based on human evidence

Additional Information

RTECS: Not available

Zinc oxide dust or fume can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called "oxide pox." Exposure to high levels of dust or fume can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Toxicity	No data available
Persistence and Degradability	No data available
Bioaccumulative Potential	No data available
Mobility in Soil	No data available
Results of PBT and vPvB Assessment	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
Other Adverse Effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)***Non-Hazardous for Transport*

Not dangerous goods

Non-hazardous for transport

IMDG

Proper Shipping Name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate)

UN No.:

3077

Class:

9

Packing Group:

III

EMS No.:

F-A, S-F

Marine Pollutant:

Yes

IATA

Proper Shipping Name:

Environmentally hazardous substance, solid, n.o.s. (Zinc sulfate monohydrate)

UN No.:

3077

Class:

9

Packing Group:

III

*Non-Hazardous for
Air Transport*

Non-hazardous for air transport

Further Information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packages and combination packages containing inner packing with Dangerous Goods > 5L for liquids or > 5 kg for solids. Contact ISOFLEX for other transportation information.

15. REGULATORY INFORMATION**SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following component is subject to reporting levels established by SARA Title III, Section 313: Zinc sulfate monohydrate / CAS No. 7446-19-7 / Revision Date 1993-04-24.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right to Know
Components**

Zinc sulfate monohydrate / CAS No. 7446-19-7 / Revision Date 1993-04-24

**Pennsylvania Right to Know
Components**

Zinc sulfate monohydrate / CAS No. 7446-19-7 / Revision Date 1993-04-24

**New Jersey Right to Know
Components**

Zinc sulfate monohydrate / CAS No. 7446-19-7 / Revision Date 1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

16. OTHER INFORMATION

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

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H302	Harmful if swallowed
H318	Causes serious eye damage
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life, with long-lasting effects

HMIS Rating

Health Hazard:	2
Chronic Health Hazard:	*
Flammability Hazard:	0
Physical Hazard:	0

NFPA Rating

Health Hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Prepared By

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Issuing Date

November 18, 2015

Revision Date

July 29, 2021

Revision Number

2

Revision Note

Required review and update

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
BOD5	Biochemical Oxygen Demand
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
COD	Chemical Oxygen Demand
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)

EC50	Half Maximal Effective Concentration
ECL	Korean Existing Chemicals List
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
SNUR	Significant New Use Rule (TSCA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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