



SIGMA-ALDRICH

rev: 3/7/2004
11749

Material Safety Data Sheet

Date Printed: 04/30/2004
Date Updated: 03/07/2004
Version 1.100

Section 1 - Product and Company Information

Product Name	ZINC SULFATE-7-HYDRATE R. G., REAG. ACS, REAG. ISO, REAG. PH. EUR.		
Product Number	31665		
Brand	Riedel-de-Haen Chem.		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	314 771 5765	Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052		

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
ZINC SULFATE HEPTAHYDRATE	7446-20-0	Yes	231-793-3	030-006-00-9

Formula ZnSO₄·7H₂O
Synonyms Sulfuric acid, zinc salt (1:1), heptahydrate, White vitriol (heptahydrate), Zinc sulfate (1:1) heptahydrate, Zinc vitriol (heptahydrate)

Section 3 - Hazards Identification

Emergency Overview
 Harmful. Dangerous for the environment.
 Harmful if swallowed. Irritating to eyes and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 Target organ(s): Kidneys. Pancreas.

HMS Rating
 Health: 2* Flammability: 0 Reactivity: 1

NFPA Rating
 Health: 2 Flammability: 0 Reactivity: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
 If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
 If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media Suitable

Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed.

Special Requirements

Hygroscopic.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

Government approved respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance Physical State	Color	Form
Solid	Colorless	Crystals

Molecular Weight: 287.54 AMU

pH	4 - 6	20 °C	Concentration: 50 g/l
BP/BP Range			
MP/MP Range			
Freezing Point	N/A		
Vapor Pressure	N/A		
Vapor Density	N/A		
Saturated Vapor Conc.	N/A		
SG/Density	1.96 g/cm ³		
Bulk Density	800 - 1,000 kg/l		
Odor Threshold	N/A		
Volatile%	N/A		
VOC Content	N/A		
Water Content	N/A		
Solvent Content	N/A		
Evaporation Rate	N/A		
Viscosity	N/A		
Partition Coefficient	N/A		
Decomposition Temp.	N/A		
Flash Point °F	N/A		
Flash Point °C	N/A		
Explosion Limits	N/A		

Flammability N/A
Autoignition Temp N/A
N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Conditions to Avoid

Protect from moisture.

Materials to Avoid

Strong oxidizing agents.

Hazardous Decomposition Products

Hazardous Decomposition Products

Zinc/zinc oxides, Sulfur oxides.

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Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion

Harmful if swallowed.

Target Organ(s) or System(s)

Kidneys. Pancreas. Liver. Lungs.

RTECS Number: ZH5300000

Toxicity Data

Oral - Rat: 1,260 mg/kg(LD50)

Oral - Rat: 2150 mg/kg (LD50)

Intraperitoneal - Rat: 200 MG/KG (LD50)

Oral - Mouse: 2200 mg/kg (LD50)

Intraperitoneal - Mouse: 75 MG/KG (LD50)

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Route</u>	<u>Mutation test</u>
Mouse	20 GM/KG	Intraperitoneal	DNA inhibition

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s.

UN#: 3077

Class: 9

Packing Group: Packing Group III

Hazard Label: Class 9

PIH: Not PIH

IATA

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

IATA UN Number: 3077

Hazard Class: 9

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Packing Group: III

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: Xi N

Indication of Danger

Irritant. Dangerous for the environment.

Risk Statements R: 36/38 50/53

Irritating to eyes and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements S: 22 25 60 61

Do not breathe dust. Avoid contact with eyes. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text

Indication of Danger

Harmful. Dangerous for the environment.

Risk Statements

Harmful if swallowed. Irritating to eyes and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements

Do not breathe dust. Avoid contact with eyes. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements

Target organ(s): Kidneys. Pancreas.

United States Regulatory Information

SARA Listed: Yes

Demimimis: 1.0 %

Notes: This product is subject to SARA section 313 reporting requirements - zinc compounds.

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.