



Material Safety Data Sheet

Creation Date 02-Feb-2010

Revision Date 02-Feb-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Zinc sulfate heptahydrate
Cat No.	Z68-3; Z68-500; Z76-3; Z76-12; Z76-500; Z76SAM-1; Z76SAM-2; Z76SAM-3
Synonyms	Zinc vitriol; Salt of vitriol; White vitriol (Crystalline/USP/FCC/Certified ACS)
Recommended Use	Laboratory chemicals
Company	Emergency Telephone Number
Fisher Scientific	CHEMTREC®, Inside the USA: 800-424-9300
One Reagent Lane	CHEMTREC®, Outside the USA: 703-527-3887
Fair Lawn, NJ 07410	
Tel: (201) 796-7100	

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Harmful if swallowed. Risk of serious damage to eyes. May cause skin and respiratory tract irritation. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance White

Physical State Solid

odor odorless

Target Organs Eyes, Heart, Blood

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

Skin

Inhalation

Ingestion

Risk of serious damage to eyes.

May cause irritation. May be harmful in contact with skin.

May cause irritation of respiratory tract. May be harmful if inhaled.

May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Tumorigenic effects have been reported in experimental animals.. Experiments have shown reproductive toxicity effects on laboratory animals.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Zinc sulfate heptahydrate	7446-20-0	100
Zinc sulfate	7733-02-0	-

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point Method	Not applicable No information available.
Autoignition Temperature	No information available.
Explosion Limits	
Upper	No data available
Lower	No data available
Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

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** 0 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. HANDLING AND STORAGE

Handling Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothing.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

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

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	White
odor	odorless
Odor Threshold	No information available.
pH	4.4-6 5% aq. solution
Vapor Pressure	No information available.
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	No information available.
Melting Point/Range	100°C / 212°F
Decomposition temperature °C	500°C
Flash Point	Not applicable
Evaporation Rate	No information available.
Specific Gravity	3.54 @ 25°C
Solubility	Soluble in water

9. PHYSICAL AND CHEMICAL PROPERTIES

log Pow	No data available
Molecular Weight	287.53
Molecular Formula	O4 S Zn . 7 H2 O

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Avoid dust formation. Incompatible products. Excess heat.
Incompatible Materials	Strong bases
Hazardous Decomposition Products	Sulfur oxides, Thermal decomposition can lead to release of irritating gases and vapors
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions .	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Zinc sulfate heptahydrate	1260 mg/kg (Rat)	Not listed	Not listed
Zinc sulfate	500 mg/kg (Rat)	Not listed	Not listed

Irritation	Severe eye irritant
Toxicologically Synergistic Products	No information available.
Chronic Toxicity	
Carcinogenicity	There are no known carcinogenic chemicals in this product
Sensitization	No information available.
Mutagenic Effects	No information available.
Reproductive Effects	Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects	No information available.
Teratogenicity	No information available.

Other Adverse Effects	Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.
Endocrine Disruptor Information	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Zinc sulfate	EC50 72 h 64.8 mg/L EC50 96 h 2.4 mg/L EC50 72 h 64.8 mg/L	Not listed	EC50 = 3.45 mg/L 15 min EC50 = 40.5 mg/L 30 min EC50 = 476 mg/L 5 min EC50 > 700 mg/L 16 h	EC50 48 h 0.75 mg/L

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility No information available

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 SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

TDG

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

IATA

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.*
Hazard Class	9

14. TRANSPORT INFORMATION

Packing Group III

IMDG/IMO

UN-No UN3077
 Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
 Hazard Class 9
 Packing Group III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Zinc sulfate heptahydrate	-	X	-	-	-		X	-	X	X	-
Zinc sulfate	X	X	-	231-793-3	-		X	X	X	X	KE-35582 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard No
 Chronic Health Hazard No
 Fire Hazard No
 Sudden Release of Pressure Hazard No
 Reactive Hazard No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants

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

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Zinc sulfate	1000 lb	-

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
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

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
Non-controlled

16. OTHER INFORMATION

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Prepared By Regulatory Affairs
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Tel: (412) 490-8929

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Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS