



## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

Product Name Zinc Oxysulfate

### Other means of identification

Synonyms None

UN-No. UN3077

### Recommended use of the chemical and restrictions on use

Recommended Use Fertilizer

Uses advised against No information available

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

Supplier Name QC, LLC  
Supplier Address 5566 Nash Road  
Cape Girardeau, MO 63701  
Supplier Phone Number 800-666-4766 Fax: 573-335-2308  
Contact Phone 573-335-6700  
Supplier Email [info@qccorporation.com](mailto:info@qccorporation.com)

Emergency telephone number CHEMTREC 800-424-9300

## 2. HAZARDS IDENTIFICATION

### Classification

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

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 1

### GHS Label elements, including precautionary statements

#### Emergency Overview



Signal word  
Hazard statement(s)

Danger

Harmful if swallowed  
Causes serious eye irritation

Appearance: Brown

Physical state: Granular Solid

Odor: Very faint

**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.

**Precautionary Statements - Response**

Specific treatment (see supplemental first aid instructions on this label).

**In case of eye contact:** 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.

**If swallowed:** Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

**Precautionary Statements – Storage:** None

**Precautionary Statements – Disposal:** Dispose of contents/container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC):** Not applicable.

**Unknown Toxicity:** 0% of the mixture consists of ingredient(s) of unknown toxicity.

**Other information:** Cause mild skin irritation.  
Very toxic to aquatic life with long lasting effects.  
Toxic to aquatic life.

**Interactions with Other Chemicals:** No information available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight - %	Trade Secret
Zinc oxide	1314-13-2	60 – 100	*
Zinc sulfate	7733-02-0	7 - 13	*
Ferrous sulfate	7720-78-7	3 – 7	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

**4. FIRST AID MEASURES**

**Description of first aid measures**

**General Advice:** Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**If inhaled:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

**In case of skin contact:** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

**In case of eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Seek immediate medical attention/advice.

**If swallowed:** Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. DO NOT induce vomiting. Call a physician.

**Self-protection of the first aider:** Ensure that medical personal are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Most important symptoms and effects, both acute and delayed**

**Most important known symptoms and effects:** Burning sensation.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

## 5. FIREFIGHTING MEASURES

**Extinguishing media**

**Suitable extinguishing media:** Dry chemical, CO<sub>2</sub>, water spray or regular foam. Dike fire-control water for later disposal.

**Unsuitable extinguishing media:** Do not use halogenated extinguishing agents or foam.

**Specific hazards arising from the chemical:** Some may burn but none ignites readily. Some may be transported hot.

**Hazardous Combustion Products:** Carbon oxides

**Explosion Data:** Sensitivity to Mechanical Impact: No  
Sensitivity to Static Discharge: No

**Protective equipment and precautions for firefighters:** Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions:** Do not touch or walk through spilled material. Stop leak if you can do so without risk.

**Other information:** Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions:** Prevent entry into waterways, sewers, basements, or confined areas.

**Methods and materials for containment and cleaning up:**

**Methods for containment:** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up:** Clean up area with sand, earth, or other non-combustible absorbent material. With clean shovel place material into clean, dry container and loosely. Move containers from spill area.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes. Do not ingest. If swallowed, then seek immediate medical assistance.

**Conditions for safe storage, including any incompatibilities**

**Storage:** Keep away from heat, sparks, flame, and other sources of ignition (i.e. pilot lights, electric motors, and static electricity). Keep container tightly closed in a cool and well-ventilated place. Keep in properly labeled containers.

**Incompatible Products:** Strong acids. Strong oxidizing agents. Strong bases.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Zinc oxide 1314-13-2	STEL: 10 mg/m <sup>3</sup> respirable fraction TWA: 2 mg/m <sup>3</sup> respirable fraction	TWA: 5 mg/m <sup>3</sup> fume TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 5 mg/m <sup>3</sup> fume (vacated) TWA: 10 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) STEL: 10 mg/m <sup>3</sup> fume	IDLH: 500 mg/m <sup>3</sup> Ceiling: 15 mg/m <sup>3</sup> dust TWA: 5 mg/m <sup>3</sup> dust and fume STEL: 10 mg/m <sup>3</sup> fume
Ferrous sulfate 7720-78-7	TWA: 1mg/m <sup>3</sup> Fe	(vacated) TWA:1 mg/m <sup>3</sup> Fe	TWA: 1mg/m <sup>3</sup> Fe

*ACGIH TLV: American Conference of Governmental Industrial Hygienists – Threshold Limit Value*  
*OSHA PEL: Occupational Safety and Health Administration – Permissible Exposure Limits Immediately Dangerous to Life or Health*

**Other exposure guidelines:** Vacated limits revoked by the Court of Appeals decision in AFL-CIO versus OSHA, 965F.2d 962 (11<sup>th</sup> Cir., 1992). See Section 15 for national exposure control parameters.

**Appropriate engineering controls:**

Engineering Measures: Showers, Eyewash Stations, Ventilation Systems

**Individual protection measures, such as personal protective equipment:**

**Eye/face protection:** Tight sealing safety goggles.

**Skin and body protection:** Wear protective gloves and protective clothing.

**Respiratory protection:** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, or smoke when using this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

Physical State	Solid	
Appearance	Granular	Odor Very faint
Color	Brown	Odor Threshold No data available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
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pH	No data available	None known
Melting/freezing point	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water solubility	Slightly soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Auto-ignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

### Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

## 10. STABILITY AND REACTIVITY

**Reactivity:** No data available

**Chemical stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** None under normal processing.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Conditions to avoid:** None known based on information supplied.

**Incompatible materials:** Strong oxidizing agents. Strong acids. Strong bases.

**Hazardous decomposition products:** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product information

**Inhalation:** Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

**Eye contact:** Specific test data for the substance or mixture is not available. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.

**Skin contact:** Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.

**Ingestion:** Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Harmful if swallowed (based on components).

#### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Zinc oxide 1314-13-2	>5000 mg/kg (Rat)	--	--
Zinc sulfate 7733-02-0	=500 mg/kg (Rat)	--	--
Ferrous sulfate 7720-78-7	=237 mg/kg (Rat)	-	-

### Information on toxicological effects

**Symptoms** Erythema (skin redness). May cause blindness. Burning.

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

Sensitization	No information available
Mutagenic effects	No information available
Carcinogenicity	Contains no ingredient listed as carcinogen
Reproductive toxicity	No information available
STOT-single exposure	No information available
STOT-repeated exposure	No information available
Chronic toxicity	No known effect based on information supplied. May cause adverse liver effects
Target organ affects	Respiratory system, Eyes, Skin, Gastrointestinal tract (GI), Liver. Cardiovascular system. Endocrine system. Kidney. Lungs. Pancreas. Systemic Toxicity.
Aspiration hazard	No information available

### Numerical measure of toxicity product information

The following values are calculated based on Chapter 3.1 of the GHS document.

## 12. ECOLOGICAL INFORMATION

**ECOTOXICITY:** Toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Zinc sulfate 7733-02-0	72h EC50: = 0.056 mg/L (Pseudokirchneriella subcapitata) 72h EC50: = 64.8 mg/L (Chlorella vulgaris) 96h EC50: = 2.4 mg/L (Chlorella vulgaris)	96h LC50: = 0.162 mg/L (Oncorhynchus mykiss) 96h LC50: 0.03 - 0.05 mg/L (Oncorhynchus mykiss) 96h LC50: 0.34 - 0.93 mg/L (Oncorhynchus mykiss) 96h LC50: 0.218 - 0.42 mg/L (Pimephales promelas) 96h LC50: = 0.06 mg/L (Pimephales promelas) 96h LC50: 0.168 - 0.25 mg/L (Pimephales promelas) 96h LC50: 0.23 - 0.48 mg/L (Pimephales promelas) 96h LC50: = 0.15 mg/L (Cyprinus carpio) 96h LC50: 16.85 - 27.18 mg/L (Cyprinus carpio) 96h LC50: 49.23 - 64.16 mg/L (Poecilia reticulata) 96h LC50: 0.48 - 1.72 mg/L (Poecilia reticulata) 96h LC50: 3.55 - 6.32 mg/L (Lepomis macrochirus) 96h LC50: = 0.63 mg/L (Poecilia reticulata) 96h LC50: 3 - 4.6 mg/L (Lepomis macrochirus)	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	48h EC50: = 0.75 mg/L 48h EC50: 0.538 - 0.908 mg/L
Ferrous sulfate 7720-78-7		96h LC50: = 0.56 mg/L (Cyprinus carpio) 96h LC50: = 925 mg/L (Poecilia reticulata)		48h EC50: 6.15 - 9.26 mg/L 48h EC50: = 152 mg/L

**Persistence and Degradability:** No data available

**Bioaccumulation:** No data available

**Other adverse effects:** No data available

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

**Disposal methods:** This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

**Contaminated packaging** Dispose of contents/containers in accordance with local regulations.

Chemical Name	California Hazardous Waste
Zinc oxide 1314-13-2	Toxic
Zinc sulfate 7733-02-0	Toxic

#### 14. TRANSPORT INFORMATION

**DOT**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 Description US3077, Environmentally Hazardous Substance, Solid, N.O.S.  
 (Zinc Oxide, Zinc sulfate), 9, III  
 Emergency Response Guide 171

**TDG**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 Description US3077, Environmentally Hazardous Substance, Solid, N.O.S.  
 (Zinc oxide, Zinc sulfate), 9, III

**MEX**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S.  
 (Zinc oxide, Zinc sulfate), 9, III

**ICAO**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S.  
 (Zinc oxide, Zinc sulfate), 9, III

**IATA**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S.  
 (Zinc oxide, Zinc sulfate), 9, III

**IMDG/IMO**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 EmS-No. F-A, S-F  
 Marine Pollutant Product is a marine pollutant according to the criteria set by  
 IMDG/IMO  
 Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S.  
 (Zinc oxide, Zinc sulfate), 9, III, Marine pollutant

**RID**

UN-No. UN3077  
 Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.



	Hazard Class	9
	Packing Group	III
	Classification Code	M7
	Description	UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Zinc oxide, Zinc sulfate), 9, III
<b><u>ADR</u></b>	UN-No.	UN3077
	Proper Shipping Name	Environmentally Hazardous Substance, Solid, N.O.S.
	Hazard Class	9
	Packing Group	III
	Classification Code	M7
	Tunnel Restriction Code(E)	
	Description	UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Zinc oxide, Zinc sulfate), 9, III
<b><u>ADN</u></b>	UN-No.	UN3077
	Proper Shipping Name	Environmentally Hazardous Substance, Solid, N.O.S.
	Hazard Class	9
	Packing Group	III
	Classification Code	M7
	Special Provisions	274, 335, 601
	Description	UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Zinc oxide, Zinc sulfate), 9, III
	Hazard Labels	9
	Limited Quantity	5 KG

## 15. REGULATORY INFORMATION

### **International Inventories**

TSCA Complies  
 DSL All components are listed either on the DSL or NDSL

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

**DSL/NDSL** – Canadian Domestic Substances List/Non-Domestic Substances List

### **US Federal Regulations**

**SARA 313** - Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals that are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS No.	Weight - %	SARA 313-Threshold Values %
Zinc oxide	1314-13-2	60 – 100	1.0
Zinc sulfate	7733-02-0	7 - 13	1.0

### **SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

**CWA (Clean Water Act)** - This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA-Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants	CSA – Hazardous Substances
Zinc oxide 1314-13-2		X		
Zinc sulfate 7733-02-0	1000 lb.	X		X
Ferrous sulfate	1000 lb.			X

**CERCLA** – This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Zinc sulfate 7733-02-0	1000 lb.		RQ 1000 lb. final RQ RQ 454 kg final RQ
Ferrous sulfate	1000 lb.		RQ 1000 lb. final RQ RQ 454 kg final RQ

### **US State Regulations**

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

#### **US State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Zinc oxide 1314-13-2	X	X	X	X	
Zinc sulfate 7733-02-0	X	X	X	X	
Ferrous sulfate 7720-78-7	X	X	X	X	

### **International Regulations**

#### **Mexico**

National occupation exposure limits

Component	Carcinogen Status	Exposure Limits
Zinc oxide 1314-13-2 (60 – 100)		Mexico: TWA 5 mg/m <sup>3</sup> Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 10 mg/m <sup>3</sup>
Ferrous sulfate 7720-78-7 (3 – 7)		Mexico: TWA 1 mg/m <sup>3</sup> Mexico: STEL 2 mg/m <sup>3</sup>

*Mexico – Occupational Exposure Limits - Carcinogens*

## 16. OTHER INFORMATION

**NFPA Rating** Health Hazards: 2 Flammability: 0 Instability: 0 Physical & Chemical Hazards

**HMIS Rating** Health Hazards: 2 Flammability: 0 Physical Hazard 0 Personal Protection: X

### Further information

This SDS summarizes to the best of our knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since QC, LLC cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material. 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 these documents 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. QC LLC and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.qccorporation.com](http://www.qccorporation.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.