

**PRODUCT NAME: ZIRCONIUM BASIC SULFATE**

Transportation Emergencies, Call (800) 424-9300 (CHEMTREC)  
Health Emergencies, contact Your Local Poison Center

**Caution:** Causes irritation. Avoid contact with skin, eyes or clothing.

**I. PRODUCT INFORMATION**

**Product Name:** Zirconium Basic Sulfate                      Formula:  $Zr_5O_7(SO_4)_3 \cdot xH_2O$   
**Chemical Name:** Zirconium Basic Sulfate  
**CA Listing Name:** Zirconium Oxide Sulfate  
**CAS Number:** 62010-10-0

**II. COMPONENT DATA**

<u>Typical Composition</u>	<u>CAS #'s</u>	<u>%</u>
Zirconium Basic Sulfate	62010-10-0	>99

NOTE: Hafnium is naturally occurring in zirconium ores. Commercial grade zirconium contains from 1 to 3% hafnium. Inventories of this product in excess of the Threshold Planning Quantity (TPQ) must be reported under SARA Title III, Section 311 & 312.

**Exposure Standard:** Zirconium compound (as Zr) – OSHA PEL 5 mg/m<sup>3</sup> \*TWA Adapted value. OSHA has established a STEL of 10mg/m<sup>3</sup>, as Zr. \*TLV of 5.0mg/m<sup>3</sup> as Zr. The ACGIH has established a TLV for hafnium of 0.5mg/m<sup>3</sup>. OSHA has established a PEL of 0.5 mg/m<sup>3</sup> for hafnium oxide.

Hazard Ratings: Health = 1 Flammability = 0 Reactivity = 0  
0 = Least; 1 = Slight; 2 = Moderate; 3 = High; 4 = Extreme;

\*TLV Threshold Limit Value – ACGIH

\*TWA – Time Weighted Average

**III. PHYSICAL DATA**

**Appearance and Odor:** Moist white crumbly solid or wet paste, slight acidic odor.

**Boiling Point:** N/A    **Melting Point:** N/A

**Vapor Density (air = 1):** N/A

**Vapor Pressure:** Similar to water.

**Solubility in water:** Insoluble

**Specific Gravity (H<sub>2</sub>O =1):** N/A

**pH:** Not Applicable

**% Volatile by Volume:** Approximately 50

**Other:** Bulk density 50-60 lbs/ft<sup>3</sup>

#### IV. FIRE AND EXPLOSION HAZARD INFORMATION

**Flash Point:** N/A

**Flammable Limits:** None

**Extinguishing Media:** Use extinguishing media suitable for surrounding fire.

**Special Firefighting  
Procedures:**

This material releases sulfuric acid when heated above 4100°C. Solutions are acidic and corrosive to skin, eyes, and mucous membranes. Fire fighters should wear self-contained breathing apparatus and full protective clothing when fighting fires in the area of this material.

This product is not flammable but when strongly heated it will emit corrosive and irritating fumes. Solutions of product are corrosive. Cool containers with water spray. Avoid contact with and avoid breathing fumes, mists, or solutions.

#### V. REACTIVITY INFORMATION

**Stability:** Stable; heating will liberate H<sub>2</sub>SO<sub>4</sub> mist and SO<sub>3</sub> gas.

**Conditions To Avoid:** Exposure to heat above 300°C.

**Incompatibility:** Avoid contact with combustible materials, carbides, chlorates, nitrates, fulminates, picrates, metallic powders, sulfides, strong reducing agents, or strong alkalies.

**Hazardous Decomposition**

**Products:** Temperatures in excess of 300°C will release sulfur oxide fumes.

**Hazardous  
Polymerization:** Will not occur.

#### VI. PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

**Ventilation:** Good general ventilation should be provided to keep dust concentrations below the exposure limit.

**Eye:** Workers should wear safety glasses and/or chemical goggles to prevent eye contact with this substance.

**Skin:** Workers should wear acid proof gloves to prevent skin contact. Workers should also wear protective clothing and equipment appropriate to the work situation to prevent repeated or prolonged skin contact.

**Respiratory:** Wear appropriate NIOSH-approved respirator for concentration at or above PEL and TLV.

**VII. HEALTH AND FIRST AID****PHYSIOLOGICAL & HEALTH EFFECTS****Routes of Entry:**

- Eyes:** Corrosive to eyes. Solutions are corrosive to eye tissue and cause severe pain.
- Skin:** Not irritating.
- Inhalation:** Dust may be irritating and harmful. Repeated and prolonged exposure may result in respiratory irritation, pulmonary injury or disease.
- Ingestion:** Corrosive to digestive tract. Causes severe irritation of the mouth and throat, abdominal pain, vomiting, and diarrhea.
- Toxicity:** Not known.

**EMERGENCY & FIRST AID PROCEDURES**

- Eyes:** Immediately flush eyes in clear running water for at least 15 minutes lifting upper and lower lids periodically. Get medical attention immediately.
- Skin:** Flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. If irritation results, seek medical attention. Wash clothing before reuse. Discard shoes.
- Inhalation:** Not applicable to wet cake. If fumes from heating the material are inhaled, remove victim to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, administer artificial respiration or cardio-pulmonary resuscitation. If breathing does not return to normal within a few minutes, get medical attention immediately!
- Ingestion:** Dilute by giving water to drink, induce vomiting. Severe exposure can result in acidosis. Get medical attention.

**VIII. SPILL AND LEAK PROCEDURES****Precaution if**

**Spilled or Released:** Stay upwind of large spills. Provide mechanical ventilation when possible. Keep dry if possible. Personnel cleaning up spills should wear self-contained breathing apparatus and full waterproof protective gear. Sweep or vacuum spill into closed container for disposal in an approved hazardous waste site according to federal, state, and local regulations. Area should be neutralized with soda ash or lime solutions. Neutralized solutions should be collected for disposal as above.

**Neutralizing  
Chemicals:**

Soda ash or lime solutions.

**Waste Disposal  
Methods:**

Dispose of material in compliance with all applicable federal, state, and local regulations.

**Reportable  
Quantities:**

Not Available

**IX. TRANSPORTATION REQUIREMENTS**

**DOT Proper Shipping Name:** Zirconium Basic Sulfate

**DOT Classification:** Non-Hazardous

**UN/NA Identification:  
Number:** Non-Hazardous

**Packing Group:** N/A

**Other Labels:** Not Required

**X. SPECIAL PRECAUTIONS****Handling and Storage  
Precautions:**

Store upright in a cool, dry, well ventilated area. Avoid contact with water. Keep containers closed at all times when not in use. Avoid contamination. See Section V for incompatibility data. Use normal precautions for lifting/transporting heavy loads.

**SALES OFFICE**

For Product Information:  
TEL: 662-494-3055  
FAX: 662-494-2828

Post Office Drawer 1217  
West Point, MS 39773

To Place An Order:  
TEL: 800-953-3585  
FAX: 800-953-3588

**IMPORTANT**

The information on this Material Safety Data Sheet is believed to be accurate but is not warranted to be so. Protective equipment, health effects, and other related safety measures are based on intended and anticipated product use. Recipients are advised to confirm in advance of need that the information is applicable and suitable to their circumstances.