


ELECTRONIC SPACE PRODUCTS INTERNATIONAL

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MATERIAL SAFETY DATA SHEET
I PRODUCT IDENTIFICATION

Trade Name:	Zirconium Silicate	Chemical Nature:	Metal Silicate
Formula:	ZrSiO ₄	CAS #:	10101-52-7
Synonyms:	Hyacinth, (silicic acid, zirconium (4+) salt), Zircon, Zirconium Silicon Oxide		

II HAZARDOUS INGREDIENTS

<u>Hazardous Components</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
Zirconium Silicate*	0-100	5 mg/m ³ (as Zr)	5 mg/m ³ (as Zr)

*All zirconium materials contain 2-4% hafnium unless otherwise specified.

HMIS Hazard Rating: Health: 3 Flammability: 0 Reactivity: 1 Personal Protection: F

III PHYSICAL DATA

Boiling Point (°C):	No Data	Melting Point:	Dissociates above 1540 °C
Specific Gravity:	1.92-2.02 gm/cc	Reaction with Water:	May form silane
Solubility in H₂O:	Insoluble	% Volatile:	N/A
Appearance and Odor:	White to yellow powder, no odor.		

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A
Explosive Limits: Lower: N/A Upper: N/A

Flammability: Non-flammable
Autoignition Temperature: N/A

Extinguishing Media: Use dry chemical, CO₂.

Special Fire Fighting Procedures: Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards: Material may emit toxic fumes if involved in a fire.

V HEALTH HAZARD INFORMATION

Effects of Exposure:

Due to the chemical inertness of zirconium it is considered to be of low toxicity. Soluble alkaline silicates act locally like mild alkalis. The dust of certain silicates, such as asbestos (hydrated magnesium silicate) and talc, can produce fibrotic changes in the lungs and are implicated as experimental carcinogens.

Zirconium is not an important industrial poison. Most zirconium compounds in common use are insoluble and considered inert. Pulmonary granuloma in zirconium workers has been reported and sodium zirconium lactate has been held responsible for skin granulomas. Avoid inhalation of Zr- containing aerosols, which can cause lung granulomas.

Acute Effects:

Inhalation: May be a nuisance dust. Cough, sneezing may result.

Skin: Abrasive irritant.

Eye: Abrasive irritant.

Chronic Effects:

Inhalation: Chronic exposure may cause pulmonary granulomas. May cause irritation of the mucous membranes of the nose and throat.

Skin: Chronic exposure may cause dermatitis and skin granulomas.

Eye: Inflammation and redness possible.

Routes of Entry: Inhalation.

Medical Conditions Generally Aggravated by Exposure: Respiratory disorders.

Carcinogenicity: Suspect **NTP:** No **IARC Monographs:** No **OSHA regulated:** No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air; give oxygen if breathing is difficult. Seek medical attention.

INGESTION: Give 2 cups of water. Induce vomiting if large amounts were ingested. Seek medical attention.

SKIN: Brush off skin, wash area with soap and water. Seek medical attention.

EYE: Flush eyes with lukewarm water for 15 minutes and seek medical attention.

VI REACTIVITY DATA

Stability: Unstable

Conditions to Avoid: High heat

Incompatibility (Material to Avoid): Lithium
Hazardous Decomposition Products: SixOy, ZrxOy, Zr-, Si-
Hazardous Polymerization: Will not occur

VII SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled: Wear a self-contained breathing apparatus and full protective clothing. Isolate the area where the spill occurred, insure proper ventilation is available and that water/moisture are kept out of the area. Vacuum up the spill using a high efficiency unit and place in a container for proper disposal. Take care not to raise dust.

Waste Disposal Method: Dispose of in accordance with Local, State and Federal Waste Disposal Regulations.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): Wear a NIOSH-approved dust-mist-fume cartridge respirator.
Ventilation: Handle in a dry, controlled atmosphere. Use local exhaust to maintain exposure below TLV. General exhaust recommended

Protective Gloves: Neoprene

Eye Protection: Safety Glasses

Other Protective Equipment: Wear protective apparel to prevent contamination of skin and clothing.

IX SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before meals.

Work Practices: Implement engineering and work practice controls to reduce and maintain concentration of exposure. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued by: S. Dierks
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