

GHS Safety Data Sheet

SDS No. : ZRI01PAEG

Date Issued : 2024/05/02

Section 1. Identification of the substance or mixture and of the supplier

Product Information

Product name: ZrSi₂ Zirconium silicide

| Product | Purity | Form | Size or Shape |
|---------|--------|---------------|-----------------------------|
| ZRI12PB | 98% | Powder | — |
| ZRI13GB | 98% | Grains | — |
| — | — | Tablet,target | Various size, Various shape |

Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.
1-28, 5-chome, Chiyoda, Sakado-shi, Saitama Japan 350-0284
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Recommended uses and restrictions on use: For research purposes

Section 2. Hazards identification

GHS Classification

| Health Hazards | Environmental Hazards | Physical Hazards |
|-------------------|-----------------------|---|
| No data available | No data available | Flammable solids : Not classified Pyrophoric solids : Not classified Self-heating substances and mixtures : Not classified Substances and mixtures which, in contact with water, emit flammable gases : Not classified |

GHS Label:

Pictograms or symbols: Not applicable

Warning word: Not applicable

| Hazard information | Description of precaution |
|--------------------|--|
| Not applicable | Wear protective gloves/protective clothing/eye protection/respiratory protection /face protection during handling. Avoid release to the environment and collect spillage. Protect from sunlight. Store in a cool, dry and well-ventilated place. Keep container tightly closed. Dispose of contents/ container in accordance with local/national regulations. |

Section 3. Composition / information on ingredients

Chemical or common name: Zirconium silicide
Chemical formula: ZrSi₂
Single Substance or Compound: Single substance
Composition: 100%
CAS #: 12039-90-6
RTECS#: Not listed
TSCA inventory : Listed
EINECS: 2349111



High Purity Materials

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Section 4. First aid measures

- Eye contact: Promptly wash eyes with plenty of water while lifting the eye lids.
Continue to rinse for at least 15 minutes and get medical attention.
- Skin contact: Promptly flush contaminated skin with soap or mild detergent and water.
Contact physician if irritation continues.
- Inhalation: Remove the exposed person immediately and provide fresh air.
Get medical attention.
- Ingestion: Rinse mouth and throat with water. Get medical attention immediately.

Section 5. Fire fighting measures

- Extinguishing media:
The product is not combustible.
Use media appropriate for surrounding fire.
- Fire fighting: Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire.

Section 6. Accidental release measures

- Personal Precautions:
Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts.
- Environmental hazard precautions:
Shut off leak if without risk.
Prevent flow out to river, etc. so as not to badly affect.
- Method for containment and cleaning up:
Indoor leakage: Ventilate as much as possible until the cleaning is completed.
Outdoor leakage: Work from the windward and evacuate the leeward crowd.
Gather up, pack in closed DOT-approved waste container as much as possible.
Carefully collect remnant and move to a safe place.

Section 7. Handling and storage

Precautions to be taken in handling:

- Safe handling: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen.
Avoid prolonged or repeated exposure.

Precautions to be taken in storage:

- General precautions: Store the material in a sealed container.
Store in a cool, dry, well ventilated and dark place away from incompatible materials.

Section 8. Exposure controls / personal protection

- Exposure guideline:
- | Chemical Name | ACGIH(2024) | | OSHA(2006) |
|----------------------------|------------------------------|-------------------------------|------------------------------|
| | TLV-TWA mg/m ³ | TLV-STEL mg/m ³ | PEL-TWA mg/m ³ |
| Zirconium compounds(as Zr) | 5 | 10 | 5 |
- Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.
- Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles, impervious gloves, protective wear, protective boots etc.



Section 9. Physical and chemical properties

| | |
|-------------------|---|
| Appearance: | Gray solid |
| Chemical formula: | ZrSi ₂ |
| Formula weight: | 147.4 |
| Melting point: | 1790 °C |
| Boiling point: | No data available |
| Density: | 4.88 g/cm ³ |
| Solubility: | In water; Insoluble Soluble in ; hydrofluoric acid |
| Flammability: | Flame retardance~Non-combustible substance |
| Oxidation: | No data available |

Section10. Stability and reactivity

| | |
|---------------------|--|
| Stability: | Stable in closed container under room temperature. |
| Reactivity: | |
| Incompatibility: | No data available |
| Condition to avoid: | No data available |

Section11. Toxicological information

| | |
|----------------------------------|-------------------------|
| Acute toxicity(Oral): | GHS : No data available |
| Acute toxicity(Inhalation): | GHS : No data available |
| Skin corrosive / irritation: | GHS : No data available |
| Serious eye damage / irritation: | GHS : No data available |
| Respiratory sensitization: | GHS : No data available |
| Skin sensitization: | GHS : No data available |
| Germ cell mutagenicity: | GHS : No data available |
| Carcinogenicity: | GHS : No data available |

Carcinogenicity:

| Chemical Name | ACGIH (2024) | IARC (2024) | NTP (2021) |
|---------------------|-----------------|----------------|---------------|
| Zirconium compounds | A4 | — | — |

ACGIH A4 Not classifiable as a Human Carcinogen

| | |
|--------------------------------|-------------------------|
| Reproductive toxicity: | GHS : No data available |
| Specific target organ toxicity | |
| —single exposure: | GHS : No data available |
| —repeated exposure: | GHS : No data available |
| Aspiration hazard: | GHS : No data available |

Section12. Ecological information

| | |
|--------------------------------------|-------------------------|
| Ecotoxicity: | |
| Hazardous to the aquatic environment | |
| short-term (acute) hazard: | GHS : No data available |
| long-term (chronic) hazard: | GHS : No data available |
| Hazardous to the ozone layer | GHS : No data available |
| | No Freon or Halon |
| Fish toxicity: | No data available |
| Degradability: | No data available |
| Bioaccumulative potential: | No data available |
| Mobility in soil: | No data available |



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Section13. Disposal considerations

Disposal method: User of the product should contract with the local government or licensed 'Industrial Waste Haulers' for disposal of waste.

Section 14. Transport information

UN classification: Non-hazards

UN number: None

HS code: 2850.00

Marine pollution: None

Precautions: Container should be transported in a secure position, in a well-ventilated vehicle.

Section 15. Regulatory information

TSCA inventory: listed.

Please refer to any other local / national measures that may be relevant.

Section 16. Other information

This SDS is for provision of information, and it does not represent a guarantee the properties or safeties of the product.

The information herein is based on the references we could obtained and the present state of our knowledge, however, this SDS does not always cover all information about the product. Some new information or amendments may be added afterwards.

Prior to use, please investigate the laws and regulations of the organization, area and country where the product is to be used. The information is intended to ordinary usage, in case of special handling, sufficient care should be taken.

