



## ELECTRONIC SPACE PRODUCTS INTERNATIONAL

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## MATERIAL SAFETY DATA SHEET

### I PRODUCT IDENTIFICATION

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**Trade Name:** Tungsten Silicide  
**Formula:** WSi<sub>2</sub>

**Chemical Nature:** Metal Silicide  
**CAS #:** 12039-88-2

### II HAZARDOUS INGREDIENTS

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<u>Hazardous Component</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH/TLV</u>
Tungsten Silicide	0-100	No data	5 mg (W)/m <sup>3</sup>

**HMIS Hazard Rating: Health: 1      Flammability: 0      Reactivity: 0      Personal Protection: B**

### III PHYSICAL DATA

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<b>Boiling Point (°C):</b> No Data	<b>Melting Point:</b> 900 °C
<b>Specific Gravity:</b> 9.4 g/cc	<b>% Volatile:</b> N/E or N/A
<b>Appearance and Odor:</b> Blue-gray powder or pieces, no odor.	<b>Solubility in H<sub>2</sub>O:</b> Insoluble

### IV FIRE AND EXPLOSION HAZARDS DATA

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**Flash Point (Method Used):** N/A  
**Explosive Limits: Lower:** N/A **Upper:** N/A

**Autoignition Temperature:** No data

**Extinguishing Media:** Use suitable extinguishing agent for surrounding material and type of fire.

**Special Fire Fighting Procedures:** Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Fire and Explosion Hazards:** When heated to decomposition, tungsten silicide may emit toxic fumes.

## V HEALTH HAZARD INFORMATION

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### Effects of Exposure:

**Inhalation:** Mild respiratory irritation. May be a nuisance dust.

**Skin:** Mildly irritating to wet skin. Also a mechanical irritant.

**Eye:** Mildly irritating. Also a mechanical irritant.

**Other:** Insoluble Tungsten compounds are considered of low toxicity. Tungsten metal is not considered toxic. Chronic exposure may produce dermatitis. As a silicide  $WSi_2$  may cause modular fibrosis due to repeat exposure, and is evidenced by shortness of breath.

**Medical Conditions Generally Aggravated by Exposure:** Respiratory disorders.

**Carcinogenicity:** None NTP? No IARC Monographs? No

### EMERGENCY AND FIRST AID PROCEDURES:

**INHALATION:** Remove victim to fresh air. Seek medical attention.

**INGESTION:** Give 2 glasses of water and induce vomiting. Seek medical attention.

**SKIN:** Wash affected area with soap and water. Seek medical attention if symptoms persist.

**EYES:** Flush affected eyes with lukewarm water for at least 15 minutes and seek medical attention.

## VI REACTIVITY DATA

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**Stability:** Stable

**Conditions to Avoid:** None

**Incompatibility (Material to Avoid):** Strong acids, fluorine, oxidizers, interhalogens.

**Hazardous Decomposition Products:**  $SiO_2$  (crystalline);  $H_2$  from contact with strong acids possible.

**Hazardous Polymerization:** Will not occur

## VII SPILL OR LEAK PROCEDURES

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**Steps to Be Taken in Case Material Is Released or Spilled:** Wear a self-contained breathing apparatus and full protective clothing. Vacuum up the spill 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

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**Respiratory Protection (Specify Type):** Wear a NIOSH-approved dust-mist cartridge respirator.

**Ventilation:** Use local exhaust to maintain concentrations below TLV. General exhaust is recommended.

**Protective Gloves:** Neoprene

**Eye Protection:** Safety Glasses

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

## IX SPECIAL PRECAUTIONS

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

**Work Practices:** Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. 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. Maintain safety drench shower, eyewash capable of sustained flushing and facilities for washing.

**DOT Class:** Not classified

**UN Number:** N/C

**IMCO Class:** N/C

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

Prepared by: S. Dierks

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