



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Silicon Products

**Other means of identification**  
**SDS number** WSI

**Manufacturer/Importer/Supplier/Distributor information**  
**Manufacturer**

**Company name** Materion Advanced Materials Technologies and Services Inc.  
**Address** 2978 Main Street  
 Buffalo, NY 14214  
 Buffalo, NY 14214  
 United States

**Telephone** 716-837-1000  
**Website** materion.com  
**E-mail** ehs1@materion.com

**Emergency phone number** (800) 424-9300 Chemtrec

## 2. Hazard(s) identification

**Physical hazards** Flammable solids Category 2

**Health hazards** Not classified.

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Warning

**Hazard statement** Flammable solid.

**Precautionary statement**

**Prevention** Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Wear protective gloves/eye protection/face protection.

**Response** In case of fire: Use appropriate media to extinguish.

**Storage** Store away from incompatible materials.

**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

## 3. Composition/information on ingredients

### Substances

| Chemical name | Common name and synonyms | CAS number | %         |
|---------------|--------------------------|------------|-----------|
| Silicon       |                          | 7440-21-3  | 99 - 99.9 |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | Rinse skin with water/shower. Get medical attention if irritation develops and persists.  |
| <b>Eye contact</b>  | Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.   |
| <b>Ingestion</b>  | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Coughing.   |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. |
| <b>General information</b>  | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.  |

## 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Dry sand. Carbon dioxide (CO <sub>2</sub> ).                                   |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.                        |
| <b>Fire fighting equipment/instructions</b>                          | In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.                           |
| <b>General fire hazards</b>  | Flammable solid.   |

## 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.  |
| <b>Methods and materials for containment and cleaning up</b>               | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk.<br><br>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.<br><br>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.<br><br>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).   |

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Material         | Type | Value                                       | Form                                |
|------------------|------|---|-------------------------------------|
| Silicon Products | PEL  | 5 mg/m <sup>3</sup><br>15 mg/m <sup>3</sup> | Respirable fraction.<br>Total dust. |

| Components              | Type | Value                                       | Form                                |
|-------------------------|------|---|-------------------------------------|
| Silicon (CAS 7440-21-3) | PEL  | 5 mg/m <sup>3</sup><br>15 mg/m <sup>3</sup> | Respirable fraction.<br>Total dust. |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Material         | Type | Value                                       | Form                 |
|------------------|------|---|----------------------|
| Silicon Products | TWA  | 5 mg/m <sup>3</sup><br>10 mg/m <sup>3</sup> | Respirable.<br>Total |

| Components              | Type | Value                                       | Form                 |
|-------------------------|------|---|----------------------|
| Silicon (CAS 7440-21-3) | TWA  | 5 mg/m <sup>3</sup><br>10 mg/m <sup>3</sup> | Respirable.<br>Total |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Control parameters** Follow standard monitoring procedures.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

#### Skin protection

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Other** Wear suitable protective clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

**Physical state** Solid.

**Form** Solid.

**Color** Not available.

**Odor** Not applicable.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 2570 °F (1410 °C)

**Initial boiling point and boiling range** 4271 °F (2355 °C)

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Flammable solid.

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

|   |   |
|---|---|
| Flammability limit - upper (%)          | Not available.                            |
| Explosive limit - lower (%)             | Not available.                            |
| Explosive limit - upper (%)             | Not available.                            |
| Vapor pressure                          | < 0.0000001 kPa at 25 °C                  |
| Vapor density                           | Not available.                            |
| Relative density                        | Not available.                            |
| Solubility(ies)                         |   |
| Solubility (water)                      | Insoluble                                 |
| Partition coefficient (n-octanol/water) | Not available.                            |
| Auto-ignition temperature               | Not applicable.                           |
| Decomposition temperature               | Not available.                            |
| Viscosity                               | Not available.                            |
| Other information                       |   |
| Density                                 | 2.33 g/cm <sup>3</sup> estimated at 25 °C |
| Explosive properties                    | Not explosive.                            |
| Molecular formula                       | Si  |
| Molecular weight                        | 28.09 g/mol                               |
| Oxidizing properties                    | Not oxidizing.                            |
| Specific gravity                        | 2.33 at 25 °C                             |

## 10. Stability and reactivity

|                                    |   |
|------------------------------------|---|
| Reactivity                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability                 | Material is stable under normal conditions.   |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use.                                   |
| Conditions to avoid                | Heat, flames and sparks. Contact with incompatible materials.                                 |
| Incompatible materials             | Strong oxidizing agents. Fluorine. Chlorine.  |
| Hazardous decomposition products   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

|              |  |
|--------------|--|
| Inhalation   | Prolonged inhalation may be harmful.                     |
| Skin contact | No adverse effects due to skin contact are expected.     |
| Eye contact  | Direct contact with eyes may cause temporary irritation. |
| Ingestion    | Expected to be a low ingestion hazard.                   |

Symptoms related to the physical, chemical and toxicological characteristics  
Coughing.

### Information on toxicological effects

|                                   |   |
|-----------------------------------|---|
| Acute toxicity                    | Not available.  |
| Skin corrosion/irritation         | Prolonged skin contact may cause temporary irritation.    |
| Serious eye damage/eye irritation | Direct contact with eyes may cause temporary irritation.  |
| Respiratory or skin sensitization |   |
| Respiratory sensitization         | Not a respiratory sensitizer.                             |
| Skin sensitization                | This product is not expected to cause skin sensitization. |

|   |  |
|---|--|
| <b>Germ cell mutagenicity</b>   | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>  | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.                                  |
| <b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b> |  |
|   | Not listed.  |
| <b>Reproductive toxicity</b>  | This product is not expected to cause reproductive or developmental effects.                                     |
| <b>Specific target organ toxicity - single exposure</b>                   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b>                 | Not classified.  |
| <b>Aspiration hazard</b>  | Not an aspiration hazard.  |
| <b>Chronic effects</b>  | Prolonged inhalation may be harmful.   |

## 12. Ecological information

|                                      |  |
|--------------------------------------|--|
| <b>Ecotoxicity</b>                   | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.   |
| <b>Bioaccumulative potential</b>     | No data available.   |
| <b>Mobility in soil</b>              | No data available.   |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.            |

## 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.                         |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| <b>Contaminated packaging</b>                | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.       |

## 14. Transport information

### DOT

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN1346  |
| <b>UN proper shipping name</b>      | Silicon powder, amorphous   |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 4.1   |
| <b>Subsidiary risk</b>              | -   |
| <b>Label(s)</b>                     | 4.1   |
| <b>Packing group</b>                | III   |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |
| <b>Special provisions</b>           | A1, IB8, IP3, T1, TP33  |
| <b>Packaging exceptions</b>         | None  |
| <b>Packaging non bulk</b>           | 213   |
| <b>Packaging bulk</b>               | 240   |

### IATA

|                                |                           |
|--------------------------------|---------------------------|
| <b>UN number</b>               | UN1346                    |
| <b>UN proper shipping name</b> | Silicon powder, amorphous |

**Transport hazard class(es)**

|                                     |   |
|-------------------------------------|---|
| <b>Class</b>                        | 4.1   |
| <b>Subsidiary risk</b>              | -   |
| <b>Packing group</b>                | III   |
| <b>Environmental hazards</b>        | No.   |
| <b>ERG Code</b>                     | 3L  |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |
| <b>Other information</b>            |   |
| <b>Passenger and cargo aircraft</b> | Allowed.  |
| <b>Cargo aircraft only</b>          | Allowed.  |

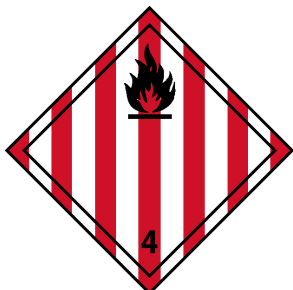
**IMDG**

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN1346  |
| <b>UN proper shipping name</b>      | SILICON POWDER, AMORPHOUS   |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 4.1   |
| <b>Subsidiary risk</b>              | -   |
| <b>Packing group</b>                | III   |
| <b>Environmental hazards</b>        |   |
| <b>Marine pollutant</b>             | No.   |
| <b>EmS</b>                          | F-A, S-G  |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |

**DOT**



**IATA; IMDG**



**15. Regulatory information**

|   |  |
|---|--|
| <b>US federal regulations</b>   | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| <b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>      | Not regulated.   |
| <b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>                     | Not listed.  |
| <b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b> | Not listed.  |

## Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

### SARA 313 (TRI reporting)

Not regulated.

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

## US state regulations

### US - New Jersey RTK - Substances: Listed substance

Silicon (CAS 7440-21-3)

### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

### US. Massachusetts RTK - Substance List

Silicon (CAS 7440-21-3)

### US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

### US. Pennsylvania RTK - Hazardous Substances

Silicon (CAS 7440-21-3)

### US. Pennsylvania Worker and Community Right-to-Know Law

Silicon (CAS 7440-21-3)

### US. Rhode Island RTK

Not regulated.

### US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## 16. Other information, including date of preparation or last revision

**Issue date** 08-20-2015

**Version #** 01

### Disclaimer

Materion - Buffalo cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

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