

**MATERION****1. Chemical and company identification**

**Name of chemical (Product name)** Silicon Targets

**Supplier's company name, address and phone number**

**Company name** Materion Advanced Materials

**Address** 6070 Parkland Boulevard  
Mayfield Heights, OH 44124 United States

**Contact person** Theodore Knudson

**Telephone** EH&S 1.216.383.4019

**e-mail address** ehs@materion.com

**Emergency telephone number** See Section 16.

**Reference number** G21

**2. Hazards identification****GHS classification**

The product is not classified according to GHS.

**GHS label elements**

**Pictograms** None.

**Signal words** None.

**Hazard statement** The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

**Precautionary statement**

**Prevention** Observe good industrial hygiene practices.

**Response** None.

**Storage** Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards which do not result in classification** None known.

**Supplemental information** For further information, please contact the Product Stewardship Department at +1.800.862.4118.

**Main symptoms and emergency overview**

**Main symptoms** Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Coughing. Discomfort in the chest. Shortness of breath. Prolonged exposure may cause chronic effects.

**Emergency overview** No special precautionary health measures should be needed under anticipated conditions of use.

**3. Composition/information on ingredients**

**Substance or mixture** Substance

**Gazette notification**

Chemical name or generic name	CAS Number	ENCS no.	ISHL no.	Concentration (%)
Silicon	7440-21-3			200

**Chemical formula** Si (7440-21-3)

**4. First aid measures**

**If inhaled** Move to fresh air. Call a physician if symptoms develop or persist.

**If on skin** Wash off with soap and water. Get medical attention if irritation develops and persists.

**If in eyes** Get medical attention if irritation develops and persists.

**If swallowed** Rinse mouth. Get medical attention if symptoms occur.

<b>Most important symptoms/effects, acute and delayed</b>	Under normal conditions of intended use, this material does not pose a risk to health.
<b>Protection of first-aid responders</b>	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>5. Fire-fighting measures</b>	
<b>Extinguishing media</b>	Powder. Dry sand.
<b>Extinguishing media to avoid</b>	Carbon dioxide (CO <sub>2</sub> ).
<b>Specific hazards</b>	Non-combustible, substance itself does not burn.
<b>Special fire fighting procedures</b>	Move containers from fire area if you can do so without risk.
<b>Protection of fire-fighters</b>	Wear suitable protective equipment.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>6. Accidental release measures</b>	
<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
<b>Environmental precautions</b>	No special environmental precautions required.
<b>Methods and materials for containment and cleaning up</b>	Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS.
<b>7. Handling and storage</b>	
<b>Handling</b>	
<b>Technical measures (e.g. Local and general ventilation)</b>	Provide adequate ventilation.
<b>Safe handling advice</b>	Avoid contact with eyes. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.
<b>Contact avoidance measures</b>	Chlorine. Fluorine. For further information, please refer to section 10 of the SDS.
<b>Hygiene measures</b>	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.
<b>Storage</b>	
<b>Safe storage conditions</b>	Store locked up. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS).
<b>Safe packaging materials</b>	Store in original tightly closed container.
<b>8. Exposure controls/personal protection</b>	
<b>Control parameters</b>	Follow standard monitoring procedures.
<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Engineering measures</b>	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.
<b>Personal protective equipment</b>	
<b>Respiratory protection</b>	Not available.
<b>Hand protection</b>	Wear gloves to prevent metal cuts and skin abrasions during handling.
<b>Eye protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>9. Physical and chemical properties</b>	
<b>Physical state</b>	Solid.
<b>Form</b>	Particulate.

<b>Color</b>	Grey.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.
<b>Melting point/freezing point</b>	1076 - 2480 °F (580 - 1360 °C) estimated / Not applicable. 2570 °F (1410 °C)
<b>Boiling point, initial boiling point, and boiling range</b>	Not applicable  4271 °F (2355 °C)
<b>Combustibility</b>	None known.
<b>Lower and upper explosion limit / flammability limit</b>	
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Kinematic viscosity</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble Insoluble.
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Density and/or relative density</b>	
<b>Density</b>	2.31 - 2.36 g/cm <sup>3</sup> 2.33 g/cm <sup>3</sup> estimated at 25 °C 2.41 g/cm <sup>3</sup> estimated
<b>Relative density</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Particle characteristics</b>	Not applicable.
<b>Other information</b>	
<b>Evaporation rate</b>	Not applicable.
<b>Explosive properties</b>	Not explosive.
<b>Molecular formula</b>	Si
<b>Molecular weight</b>	28.09 g/mol
<b>Oxidizing properties</b>	Not oxidizing.
<b>Specific gravity</b>	2.33 at 25 °C
<b>Surface tension</b>	720 mN/m (2732 °F (1500 °C))
<b>Viscosity (Coefficient of viscosity)</b>	Not applicable.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Acids. Alkalies.

**Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

**Acute toxicity** None known.

**Skin corrosion/irritation** Not likely, due to the form of the product.

**Serious eye damage/eye irritation** None known.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not a respiratory sensitizer.

**Skin sensitization** Not a skin sensitizer.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity** Not classified.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not an aspiration hazard.

## 12. Ecological information

**Ecotoxicity** 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.

**Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

**Bioaccumulation** No data available.

**Mobility in soil** No data available for this product.

**Hazardous to the ozone layer** No data available.

**Other hazardous effects** 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

**Residual waste** 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).

**Contaminated packaging** 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.

**Local disposal regulations** Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

## 14. Transport information

**IATA**  
Not regulated as dangerous goods.

**IMDG**  
Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**National regulations** Follow regulation in section 15 for domestic transportation.

**Emergency Response Guide Number** 170

## 15. Regulatory information

### Industrial Safety and Health Act

#### Notifiable substances

Not regulated.

#### Labeling substances

Not regulated.

### Poisonous and Deleterious Substances Control Act

#### Specified poisonous substances

Not regulated.

#### Poisonous substances

Not regulated.

#### Deleterious substances

Not regulated.

### Act on the Regulation of Manufacture and Evaluation of Chemical Substances

#### Class I specified chemical substances

Not regulated.

#### Class II specified chemical substances

Not regulated.

#### Monitoring chemical substances

Not regulated.

#### Priority Assessment Chemical Substances (PACs)

Not regulated.

#### Reporting Exempted Substances

Not regulated.

### Law concerning Pollutant Release and Transfer Register

#### Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

#### Class 1 substances (substance name, ordinance number and content)

Not regulated.

#### Class 2 substances (substance name, ordinance number and content)

Not regulated.

### Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule

Not regulated.

### Air Law, Enforcement Rule

Not regulated.

### Explosives Control Act

Not regulated.

## 16. Other information

### Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012  
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"  
JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)

### Further information

Transportation Emergency  
Call Chemtrec at:  
US: 800.424.9300  
International: 703.741.5970  
Spain: 900.868.538  
Switzerland: 0800.564.402  
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059  
South Korea Toll-free Number – 080-880-0468

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