



# SAFETY DATA SHEET

**MATERION**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

<b>Name of the substance</b>	Copper Silicide (Cu <sub>5</sub> Si)
<b>Identification number</b>	235-286-8 (EC number)
<b>Registration number</b>	-
<b>Document number</b>	2IB
<b>Synonyms</b>	None.
<b>Materion Code</b>	2IB
<b>Issue date</b>	06-April-2018
<b>Revision date</b>	20-March-2020

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

<b>Company name</b>	Materion Advanced Chemicals Inc.
<b>Address</b>	407 N. 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States
<b>Division</b>	Milwaukee
<b>Telephone</b>	414.212.0257
<b>e-mail</b>	advancedmaterials@materion.com
<b>Contact person</b>	Laura Hamilton

### 1.4. Emergency telephone number

<b>Supersedes date</b>	11-April-2018
<b>Version number</b>	03

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

<b>Identified uses</b>	Not available.
<b>Uses advised against</b>	None known.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies. Class 4 (low-hazard substance)

#### Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

#### Hazard summary

Causes eye irritation. Causes skin irritation. May cause irritation to the respiratory system. Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects. 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.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Copper silicide (Cu<sub>5</sub>Si)

#### Hazard pictograms



**Signal word** Warning

#### Hazard statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

## Precautionary statements

### Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

### Response

P304 + P340 If skin irritation occurs, seek medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P362 + P364 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
Take off contaminated clothing and wash it before reuse.

### Storage

P405 Store locked up.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

### Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## Supplemental label information

100% of the substance consists of component(s) of unknown acute oral toxicity. 100% of the substance consists of component(s) of unknown acute dermal toxicity. 100% of the substance consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the substance consists of component(s) of unknown long-term hazards to the aquatic environment. For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 2.3. Other hazards

Not a PBT or vPvB substance or mixture. Avoid eye contact or breathing dust, powder, mist or vapour from this product as irritation of the eyes or respiratory tract may result.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Copper silicide (Cu <sub>5</sub> Si)	100	12159-07-8 235-286-8	-	-	
<b>Classification:</b>	Skin Irrit. 2;H315, STOT SE 3;H335				

#### List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).  
M: M-factor  
PBT: persistent, bioaccumulative and toxic substance.  
vPvB: very persistent and very bioaccumulative substance.  
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## SECTION 4: First aid measures

#### General information

If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

#### 4.1. Description of first aid measures

##### Inhalation

Move to fresh air. If not breathing, give artificial respiration. Call a physician or poison control centre immediately. Keep victim warm.

##### Skin contact

Wash the skin immediately with soap and water. Get medical attention.

##### Eye contact

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

##### Ingestion

Seek medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

Dusts may irritate the respiratory tract, skin and eyes.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

#### General fire hazards

No unusual fire or explosion hazards noted.

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

##### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

<b>5.2. Special hazards arising from the substance or mixture</b>	During fire, gases hazardous to health may be formed.
<b>5.3. Advice for firefighters</b>	
<b>Special protective equipment for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Special firefighting procedures</b>	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.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
<b>For emergency responders</b>	Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

**6.4. Reference to other sections** For personal protection, see section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

<b>7.1. Precautions for safe handling</b>	Avoid prolonged exposure. Observe good industrial hygiene practices.
<b>7.2. Conditions for safe storage, including any incompatibilities</b>	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
<b>7.3. Specific end use(s)</b>	Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	MAK	1 mg/m <sup>3</sup>	Inhalable fraction.
	STEL	0,1 mg/m <sup>3</sup>	Fume and respirable dust.
		4 mg/m <sup>3</sup>	Inhalable fraction.
		0,4 mg/m <sup>3</sup>	Fume and respirable dust.

##### Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Material	Type	Value
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>

##### Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>	Total dust.
		0,2 mg/m <sup>3</sup>	Respirable dust.

##### Finland. Workplace Exposure Limits

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	0,02 mg/m <sup>3</sup>	Respirable.

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	0,01 mg/m <sup>3</sup>	Respirable fraction.

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Material	Type	Value	
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	STEL	4 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	

**Italy. Occupational Exposure Limits**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.
		0,2 mg/m <sup>3</sup>	Respirable fraction.

**Netherlands. OELs (binding)**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.

**Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817**

Material	Type	Value	
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	0,2 mg/m <sup>3</sup>	

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.
		0,2 mg/m <sup>3</sup>	Respirable fume.

**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	TWA	1 mg/m <sup>3</sup>	Total dust.
		0,2 mg/m <sup>3</sup>	Respirable dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

Material	Type	Value	Form
Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	STEL	0,2 mg/m <sup>3</sup>	Inhalable dust.
	TWA	0,1 mg/m <sup>3</sup>	Inhalable dust.

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures**

Ensure adequate ventilation, especially in confined areas. Follow standard monitoring procedures.

**Derived no effect levels (DNELs)**

Not available.

**Predicted no effect concentrations (PNECs)** Not available.

## 8.2. Exposure controls

### Appropriate engineering controls

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 adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust.

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

**General information** Wear suitable protective equipment. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

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

**Skin protection**

- **Hand protection** Wear appropriate chemical resistant gloves.
- **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.

### Hygiene measures

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.

### Environmental exposure controls

Environmental manager must be informed of all major releases.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

**Physical state** Solid.

**Form** Solid.

**Colour** Not available.

**Odour** Not available.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

#### Upper/lower flammability or explosive limits

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

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

**Vapour pressure** Not available.

**Vapour density** Not available.

**Relative density** Not available.

#### Solubility(ies)

**Solubility (water)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Explosive properties** Not explosive.

**Oxidising properties** Not oxidising.

## 9.2. Other information

Molecular formula Cu<sub>5</sub>Si

## SECTION 10: Stability and reactivity

- 10.1. Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.
- 10.2. Chemical stability** Material is stable under normal conditions.
- 10.3. Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.
- 10.4. Conditions to avoid** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
- 10.5. Incompatible materials** Strong oxidising agents.
- 10.6. Hazardous decomposition products** No hazardous decomposition products are known.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

- Inhalation** Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful.
- Skin contact** May be irritating to the skin.
- Eye contact** Causes serious eye irritation.
- Ingestion** May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** Irritating to eyes, respiratory system and skin.

### 11.1. Information on toxicological effects

- Acute toxicity** Not known. Causes skin irritation. Causes eye irritation. Dust may irritate respiratory system.
- Skin corrosion/irritation** Due to partial or complete lack of data the classification is not possible. May cause skin irritation.
- Serious eye damage/eye irritation** Causes serious eye irritation.
- Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.
- Skin sensitisation** Irritating to skin.
- Germ cell mutagenicity** Due to partial or complete lack of data the classification is not possible.
- Carcinogenicity** Due to partial or complete lack of data the classification is not possible.

### Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

- Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.
- Specific target organ toxicity - single exposure** Due to partial or complete lack of data the classification is not possible.
- Specific target organ toxicity - repeated exposure** Due to partial or complete lack of data the classification is not possible.
- Aspiration hazard** Due to partial or complete lack of data the classification is not possible.
- Mixture versus substance information** No information available.
- Other information** Not available.

## SECTION 12: Ecological information

- 12.1. Toxicity** Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.
- 12.2. Persistence and degradability** No data is available on the degradability of this substance.
- 12.3. Bioaccumulative potential** No data available.
- Partition coefficient n-octanol/water (log K<sub>ow</sub>)** Not available.
- Bioconcentration factor (BCF)** Not available.
- 12.4. Mobility in soil** No data available.
- 12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 12.7. Additional information

#### Estonia Dangerous substances in groundwater Data

Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	Copper (Cu) 1000 ug/l
	Copper (Cu) 15 ug/l

#### Estonia Dangerous substances in soil Data

Copper silicide (Cu <sub>5</sub> Si) (CAS 12159-07-8)	Copper (Cu) 100 mg/kg
	Copper (Cu) 150 mg/kg
	Copper (Cu) 500 mg/kg

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**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.

**EU waste code** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Special precautions** Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Copper silicide (Cu<sub>5</sub>Si) (CAS 12159-07-8)

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

**Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

**Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

**Other regulations**

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**National regulations**

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

**SECTION 16: Other information**

**List of abbreviations**

Not available.

**References**

Not available.

**Training information**

Follow training instructions when handling this material.

**Disclaimer**

Materion Advanced Chemicals Inc. 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. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.