



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

Name of the substance	Silicon Carbide (SiC)
Identification number	206-991-8 (EC number)
Registration number	-
Document number	2AC
Synonyms	None.
Materion Code	2AC
Issue date	25-November-2015
Revision date	28-May-2019

1.3. Details of the supplier of the safety data sheet

Supplier

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

1.4. Emergency telephone number

Supersedes date	15-January-2018
Version number	05

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

Identified uses	Not available.
Uses advised against	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.

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

Physical hazards

Substances and mixtures which, in contact with water, emit flammable gases	Category 3	H261 - In contact with water releases flammable gases.
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Hazard summary

Reacts violently with water. In contact with water releases flammable gases. 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: Silicon Carbide (SiC)

Hazard pictograms



Signal word Warning

Hazard statements

H261	In contact with water releases flammable gases.
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Precautionary statements

Prevention

P231 + P232 Handle and store contents under inert gas. Protect from moisture.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P370 + P378 In case of fire: Use appropriate media to extinguish.

Storage

P402 + P404 Store in a dry place. Store in a closed container.

Disposal

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

Supplemental label information

EUH014 - Reacts violently with water.

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

Not a PBT or vPvB substance or mixture.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Silicon Carbide (SiC)	100	409-21-2 206-991-8	-	-	
Classification:	Water-React. 3;H261				

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.

Composition comments

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation

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

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

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

Coughing.

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

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

In contact with water releases flammable gases.

5.1. Extinguishing media

Suitable extinguishing media

Not available.

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Water reactive material.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special firefighting procedures Do not get water inside container.

Specific methods 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

For non-emergency personnel 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.

For emergency responders 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 Do not get water on spilled substance or inside containers. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimise spreading or contact with rain.

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling Do not allow water to get into container because of violent reaction and possible flash fire. Handle under inert gas. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Never allow product to get in contact with water during storage. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a dry place. Store in a building without sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s) 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
Silicon Carbide (SiC) (CAS 409-21-2)	MAK	5 mg/m ³	Respirable fraction.
	STEL	10 mg/m ³	Respirable fraction.

Belgium. Exposure Limit Values.

Material	Type	Value
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	10 mg/m ³

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

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	5 mg/m ³	Inhalable fraction.

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	STEL	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Czech Republic. OELs. Government Decree 361

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	5 mg/m ³	Dust.

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

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	5 mg/m ³	Respirable dust.
		10 mg/m ³	

Finland. Workplace Exposure Limits

Material	Type	Value
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	0,1 fibers/cm ³

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value
Silicon Carbide (SiC) (CAS 409-21-2)	VME	10 mg/m ³

Regulatory status: Indicative limit (VL)

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
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	4 mg/m ³	Inhalable dust.
		0,3 mg/m ³	Respirable dust.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	AGW	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	6 mg/m ³	Respirable dust.
		10 mg/m ³	Total inhalable dust.

Ireland. Occupational Exposure Limits

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total inhalable dust.

Italy. Occupational Exposure Limits

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	0,1 fibers/cm ³	Fiber.
		3 mg/m ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Material	Type	Value
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	6 mg/m ³

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

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	5 mg/m ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.
		1 mg/m ³	Dust.

Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TLV	0,1 fibers/cm ³	Fiber.
		0,5 mg/m ³	Respirable dust.

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	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	10 mg/m ³	Inhalable fraction.

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	0,1 fibers/cm ³	Respirable fibers.
		3 mg/m ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	10 mg/m ³	Inhalable fraction.

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

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	4 mg/m ³	Inhalable fraction.
		1,5 mg/m ³	Respirable fraction.

Spain. Occupational Exposure Limits

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	3 mg/m ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.

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

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	0,2 fibers/ml	

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	3 mg/m ³	Respirable dust.
		10 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value	Form
Silicon Carbide (SiC) (CAS 409-21-2)	TWA	4 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Biological limit values

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

Recommended monitoring procedures

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.
Individual protection measures, such as personal protective equipment	
General information	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	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.

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	2600 °C (4712 °F)
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	1323,89 kPa (25 °C (77 °F))
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
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

Density 3,23 g/cm³ estimated
Molecular formula C-Si
Molecular weight 40,07 g/mol
Specific gravity 3,23

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 reacts with water.
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. Exposure to moisture. Exposure to water vapour. Contact with incompatible materials.
10.5. Incompatible materials Water. Water, moisture.
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 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 May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms

11.1. Information on toxicological effects

Acute toxicity No data available.
Skin corrosion/irritation Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation Due to partial or complete lack of data the classification is not possible.
Respiratory sensitisation Due to partial or complete lack of data the classification is not possible.
Skin sensitisation Due to partial or complete lack of data the classification is not possible.
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.

IARC Monographs. Overall Evaluation of Carcinogenicity

Silicon Carbide (SiC) (CAS 409-21-2) 2A Probably carcinogenic to humans.

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 product.
12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log Kow)	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.

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	Consult authorities before disposal. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN2813
14.2. UN proper shipping name	Water-reactive solid, n.o.s. (Silicon Carbide (SiC))
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
Hazard No. (ADR)	423
Tunnel restriction code	E
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN2813
14.2. UN proper shipping name	Water-reactive solid, n.o.s. (Silicon Carbide (SiC))
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN2813
14.2. UN proper shipping name	Water-reactive solid, n.o.s. (Silicon Carbide (SiC))
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
14.4. Packing group	III
14.5. Environmental hazards	No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

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

IMDG

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

ADN; ADR; RID



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

Silicon Carbide (SiC) (CAS 409-21-2)

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.