

## SAFETY DATA SHEET (SDS) High Purity/Pure Silicon Carbide (SiC)

According to Regulation EC 1907/2006 (REACH)

Version 9

Revision Date: 2023-05-02

Supersede version: 2018-12-14

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

#### 1.1. Product identifier

This product is considered as a substance

Name:	High Purity/Pure Silicon Carbide (SiC).
Trade Name:	SiC1-E-HP ; SiC1-S-HP ; SiC1-T-HP ; SiC1-R-HP ; SiC1-G-HP ; SiC2-E-HP ; SiC2-S-HP ; SiC2-T-HP ; SiC2-R-HP ; SiC2-G-HP ; SiC3-E-HP ; SiC3-S-HP ; SiC3-T-HP ; SiC3-R-HP ; SiC3-G-HP ; SiC4-E-HP ; SiC4-S-HP ; SiC4-T-HP ; SiC4-R-HP ; SiC4-G-HP ; SiC1-E-P ; SiC1-S-P ; SiC1-T-P ; SiC1-R-P ; SiC1-G-P ; SiC2-E-P ; SiC2-S-P ; SiC2-T-P ; SiC2-R-P ; SiC2-G-P ; SiC3-E-P ; SiC3-S-P ; SiC3-T-P ; SiC3-R-P ; SiC3-G-P ; SiC4-E-P ; SiC4-S-P ; SiC4-T-P ; SiC4-R-P ; SiC4-G-P ; SiC-F-HP ; SiC-F-P.
EC / List no.:	206-991-8
CAS no.:	409-21-2
REACH Registration number:	Registered at the revision date of the SDS.
Registration number:	01-2119402892-42-0083
Description:	High Purity and Pure $\beta$ - Silicon Carbide-based Extrudates, Grains, Spheres, Foams. With particule size > 500 $\mu$ m

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

Identified Use: Catalyst support.

No uses advised against identified in the registration dossier.

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

Manufacturer name and identification: ACM GmbH  
Industriestraße 1, B310  
77731 WILLSTATT  
Phone : +49 (0) 7852 8 1150  
Contact Persons responsible for the SDS: e-mail: [info@acmgmbh.com](mailto:info@acmgmbh.com)

### 1.4. Emergency telephone number

National Poisons Information Service Available 24 hours a day, 365 days a year  
[http://echa.europa.eu/help/nationalhelp\\_contact\\_en.asp](http://echa.europa.eu/help/nationalhelp_contact_en.asp)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance

Silicon Carbide (SiC) is not classified as hazardous substance according to CLP criteria (Regulation EC No 1272/2008).

### 2.2. Label elements

No labelling required for SiC according to CLP criteria (Regulation EC No 1272/2008).

### 2.3. Other hazards

Silicon Carbide (SiC) does not fulfil PBT or vPvB criteria (REACH annex XIII).

According to ACGIH SiC is insoluble or made poorly soluble particles not otherwise specified (PNOS).

Careful! Silicon carbide (SiC) may contain trace amounts of SiC nanofibers (below 0.1 % w/w). Raw, dry SiC nanofibers may become airborne during handling and become respirable in some conditions.

Silicon carbide fibres (with diameter < 3 µm, length > 5 µm and aspect ratio ≥ 3:1) are classified as Carc. 1B(H350i) in the CLP harmonised classification and the annex VI of REACH since the last updated (ATP15) – implementation 01/03/2022.

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IARC and ACGIH list SiC whiskers/fibers as potential carcinogens, based on experimental animal data. Any potential carcinogenicity of SiC fibers is limited to chronic overexposure of dry, respirable dust. No data exists for humans.

**ACM recommends limiting dust's inhalation during handling and storage (see sections 7 and 8 for more advices).**

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Silicon Carbide (SiC) is considered as a mono constituent substance according to ECHA guidance "Identification and naming of substances under REACH and CLP".

Designation	Classification according to CLP criteria	Concentration (w/w)
Silicon carbide  Formula: $\beta$ SiC  CAS -No : 409-21-2 CE -No : 206-991-8 INDEX -No : NA	Not classified.	<b>80 – 98 %</b>
Other unclassified components		<b>2 - 20 %</b>
SiC nanofibers	CLP: Carc. 1B (H350i) IARC and ACGIH list SiC whiskers/fibers as potential carcinogens.	<b>&lt; 0.1 %</b>
<b>Total</b>		<b>100 %</b>

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### SECTION 4: FIRST AID MEASURE

#### 4.1. Description of first aid measures

**General advice:** IN CASE OF SEVERE OR PERSISTENT DISTURBANCES, CALL A DOCTOR OR SEEK EMERGENCY MEDICAL HELP. Show the safety data sheet if possible. Take care to self-protect by avoiding becoming contaminated. Use adequate respiratory protection.

**Skin contact:** Not expected to present a significant skin hazard under anticipated conditions of normal use, but, if irritation or rash occurs:

- 1) Take off all contaminated clothing and shoes.
- 2) Immediately flush affected area with plenty of soap and water – continue for at least 10 minutes.
- 3) If there are signs of irritation or other symptoms seek medical attention.

Wash clothing before reuse.

**Eye contact:** Before any action on a par with eyes, wash your hands with soap and water to avoid any risk of infection.

- 1) Flush eyes with water thoroughly and continuously for at least 15 minutes.

Rinse instructions:

Remove any contact lenses.

Keep eye wide open while rinsing.

Continue rinsing

Protect unharmed eye. Avoid splashing

Water flow always from the nose to the ear

Move the eye in all directions

- 2) Once done rinse, cover the eye with a compress.
- 3) If eye irritation, pain, swelling, lachrymation or photophobia persists, consult a physician, preferably an ophthalmologist.

**If swallowed:** Not expected to present a significant ingestion hazard under anticipated conditions of normal use. Do not induce vomiting unless if this is indicated by the physician or Poison Center. Do not give milk or alcoholic beverages.

- 1) Rinse mouth well. Do not give anything orally.
- 2) Get medical attention immediately
- 3) Keep them warm and get medical advice immediately
- 4) When vomiting occurs spontaneously, make the body leaned to prevent from inhaling to the bronchus.

Never give anything by mouth to an unconscious person.

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**If inhaled:** If dust is inhaled, and if symptoms of pulmonary involvement develop:

- 1) Remove from exposure and move to fresh air immediately.
- 2) Ensure good air circulation. Remove anything that could be tightened, like a collar, a tie, a belt or a girdle.
- 3) If breathing is difficult, give oxygen if possible or assisted ventilation, (do not use mouth to mouth).
- 4) If unconscious, place in recovery position.
- 5) Get medical aid

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

Silicon carbide is a mechanical irritant, prolonged contact may cause skin abrasion and may cause tearing and redness.

If dust is inhaled, any symptoms of pulmonary involvement may be develop (coughing, wheezing, or shortness of breath).

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

No specific treatment required.

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1. Extinguishing media

General information

Not inflammable. Silicon Carbide is not combustible.

Suitable extinguishing media

- ABC dry chemical
- alcohol-resistant foam,
- CO<sub>2</sub>,
- water fog
- Sand
- Fire blanket

Extinguishing media not to be used for safety reasons

Careful! Unlike sprays, powerful jets can disperse the firebox and aggravate the fire.

Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

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#### 5.2. Special exposure hazards arising from the substance

Silicon oxides and carbon oxides

#### 5.3. Protective Equipment and Precautions for Firefighters

Wear an approved positive pressure self-contained breathing apparatus in addition to standard firefighting gear.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Limit dust formation, use disposable (FFP3-EN149) dust protection mask.

#### 6.2. Environmental precautions

Be careful not to be dispersed into the air and rivers.

#### 6.3. Methods and material for containment and cleaning up

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section.

Avoid generating dusty conditions. Provide ventilation.

#### 6.4. Reference to others sections

Refer to Section 8 for PPE

Refer to Section 4 for FIRST AID MEASURES

Refer to Section 5 for FIRE-FIGHTING MEASURES

Refer to Section 13 for DISPOSAL CONSIDERATIONS

## SECTION 7: HANDLING AND STORAGE

Advices relating to storage premises apply to workshops where the product is handled. Risk management measures should be adapted to the operating conditions in accordance with product's exposure conditions (if dispersive use, amount used, frequency, containment level ...)

ACM highly recommends limiting dust's inhalation during handling and storage.

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#### 7.1. Precautions for safe handling

##### Hygiene measures:

- Smoking, eating and drinking should be prohibited.
- Keep working clothes separately from street clothes.
- Do not wear work clothes soiled in places such as offices, meeting rooms, relaxation areas, company restaurants or cafeterias.
- Do not leave the property with work clothes or personal protective equipment.
- Wash contaminated clothing before reuse (Note that the leather or other porous materials cannot be cleaned: once contaminated, they should be disposed of as chemical waste).
- Wash thoroughly after handling this product and before breaks.
- Always wash up before eating, smoking or using the facilities
- If necessary, take a shower after working.

##### Organizational measures:

- Training and information for workers
- Search for safer products or processes less exponents
- Limit working time for workers exposed
- Establish a procedure for chemical purchases (taking into account quantities and packaging)
- Managing the flow and storage of chemicals (unnecessary inventory, limiting the quantities stored ...)
- Waste Management (Do not use empty container before they have been cleaned).
- Establish Routine maintenance of facilities
- Restricting access to local

##### Additional specific measures to inhalation risk:

- Provide adequate local ventilation (10 to 15 air volume / hour). Use only in a well-ventilated area
- Avoid dust formation
- Reduce friction and impact between crude and grains
- It is recommended to work in an engineered closed system where respirable dust may be exhausted.
- When dispersed in water, solvent, polymer, or other carrier material (when wetted), SiC dust is non-respirable and non-hazardous.

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### 7.2. Conditions for safe storage, including any incompatibilities

Conditions of storage rooms and vessels	Storage in dry area and in a sealed container. Keep container closed where possible. Avoid dust generation. Identify the contents of all containers
Advice of storage of incompatible materials	None
Further information of storage	None

### 7.3. Specific end use(s)

Apart from the uses mentioned in SECTION 1.2, no other specific uses are stipulated.



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## SECTION 8: EXPOSURES CONTROL / PERSONAL PROTECTION

### 8.1.Exposure limits

Exposure limits: Ingredients with workplace control parameters

Substance	Silicon carbide	
CAS No.	409-21-2	
Remarks		
	Limit value - Eight hours	Limit value - Short term
Australia	10 mg/m <sup>3</sup> (1) 4 mg/m <sup>3</sup> , respirable aerosol	
Belgium	10 mg/m <sup>3</sup> 0,1 fibres/cm <sup>3</sup> , respirable fraction	
Canada - Ontario	10 mg/m <sup>3</sup> (1)(2) 3mg/m <sup>3</sup> (2)(3) 0,1 fibres/cm <sup>3</sup> (3)(4)	
Canada - Québec	10 mg/m <sup>3</sup>	
Finland	0,1 fibres/cm <sup>3</sup>	
France	10 mg/m <sup>3</sup> , respirable fraction	
Ireland	10 mg/m <sup>3</sup> inhalable fraction 4 mg/m <sup>3</sup> fibers, respirable fraction	
Latvia	6 mg/m <sup>3</sup>	
New Zealand	10 mg/m <sup>3</sup> (1)	
People's Republic of China	8 mg/m <sup>3</sup> inhalable fraction 4 mg/m <sup>3</sup> respirable fraction	
Singapore	10 mg/m <sup>3</sup>	
South Korea	10 mg/m <sup>3</sup>	
Spain	10 mg/m <sup>3</sup> inhalable aerosol 3 mg/m <sup>3</sup> respirable aerosol	
Switzerland	10 mg/m <sup>3</sup> inhalable aerosol 3 mg/m <sup>3</sup> respirable aerosol	
United Kingdom	10 mg/m <sup>3</sup> inhalable aerosol 4 mg/m <sup>3</sup> respirable aerosol	
USA - NIOSH	10 mg/m <sup>3</sup> total dust 5 mg/m <sup>3</sup> respirable fraction	
USA - OSHA	15 mg/m <sup>3</sup> total dust 5 mg/m <sup>3</sup> respirable dust	

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#### Remarks:

Australia: (1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

Canada - Ontario: (1) Inhalable aerosol (2) The value is for particulate matter containing no asbestos and < 1% crystalline silica. (3) Respirable aerosol. (4) Respirable fibres: length >5µm; aspect ratio =3:1, as determined by the membrane filter method at 400-450 times magnification (4-mm-objective), using phase contrast illumination

New Zealand: (1) The value is for inhalable dust containing no asbestos and <1 % free silica.

#### DN(M)EL

The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole. More detailed information is available in the REACH Registration dossiers.

SUBSTANCE	TARGET	EXPOSURE	MOST SENSITIVE STUDY	DNEL
silicon carbide	workers	inhalation	acute toxicity	94 mg/m <sup>3</sup>
	general population			23 mg/m <sup>3</sup>
		inhalation		
		dermal		200 mg/kg bw/day
		oral		13 mg/kg bw/day

#### Predicted No-Effect Concentration (PNEC)

Data not provided by the registrant

#### 8.2.Exposure controls

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Use personal protective equipment properly maintained. You must inspect protections before each use. Keep personal protective equipment in a clean place away from the work area.

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

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### Eye/face protection:

It is recommended to contact lens wearers to use corrective lenses. If dust level is high use dust proof safety goggles tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin protection:

If the contact with the product cannot be avoided, use protective gloves which guarantee full protection, eg. PVC, neoprene or rubber. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Respiratory protection:

Avoid inhaling the dust; if in specific circumstances, compliance cannot be achieved, use a disposable (P3) dust protection mask.

**Thermal hazards:** No

**Environmental exposure controls:** No special measures required.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, tests were carried out at 20 ° C and at normal atmospheric pressure.

### 9.1 Physical and chemical properties

Physical state:	Solid
Colour:	Colourless to black.
Odour:	Odourless.
Odor Threshold:	Not applicable.
pH:	Not applicable.
Boiling point:	Not applicable.
Melting point:	> 2000°C
Flash point:	Not applicable.
Evaporation rate:	Not applicable.
Flammability:	Not applicable.
Auto ignition temperature:	Not applicable.
Solubility:	Insoluble in water, solvents and acids.
Participation coefficient n-octanol/water:	Not applicable

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Vapor Pressure:	Not applicable.
Explosive limits:	Not applicable.
Density:	3.2 g/cm <sup>3</sup>
Bulk density:	From 0,1 to 2 g/cm <sup>3</sup> .
Decomposition temperature:	Not applicable.
Viscosity, dynamic:	Not applicable.
Explosive properties:	Not applicable.
Oxidizing properties:	Not applicable.

### 9.2 Other information

Miscibility: Not determined for the substance

Conductivity: Not determined for the substance

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None under normal processing. No hazardous reactions known.

### 10.2. Chemical stability

This material is stable. No hazardous reactions known.

### 10.3. Possibility of hazardous reactions

- 1) It gradually generates the carbonate and the silicate by reacting with the fused alkali.
- 2) It's resolved by melted sodium carbonate, the sulfuric acid alkali, the boric oxide, and the lead chromate.
- 3) It reacts explosively when it is heated with the mixture of the potassium dichromate and lead chromate.
- 4) It's converted to the silicide by heated with oxides of copper, iron, nickel, platinum, and manganese.

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#### 10.4. Conditions to Avoid

It should not be mixed with the strong oxidant such as the mixture of the potassium dichromate and lead chromate.

#### 10.5. Incompatible Materials

Strong oxidant such as the mixture of the potassium dichromate and lead chromate.

#### 10.6. Hazardous Decomposition Products

Silicon oxides and carbon oxides

## SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

All information provided below refers to the public available information in the silicon carbide's REACH registration dossier.

##### a) Acute toxicity:

##### Route of Exposure: Inhalation

Test: CL50 - Routes of Exposure: Inhalation – species: Rat

Bibliographic source: British Journal of Industrial Medicine 1993; 50: 807-813

Executive summary: Silicon carbide (SiC) dust and other dusts for comparison were injected intratracheally at a high dose (50 mg) into rats and the response of the lungs and the lymph nodes was studied after an appropriate experimental period. The indices studied were: histological changes in the lung and lymph nodes, organ weights, the formation of collagenous fibres, and the appearance of quartz typical areas. No changes in the tissues studied in terms of damaging fibrogenic effects could be found after eight months (first series) and three and 12 months (second series). In particular the histological findings and the absence of quartz typical areas as well as the quantitative determination of collagen fibres show that SiC had no harmful effects on tissues. The substance SiC dust as such can be considered as inert from the experimental results based on qualitative and extremely sensitive procedures.

Interpretation of results: practically nontoxic

##### Route of Exposure: Oral

Study generated according to internationally accepted testing guidelines. (2008)

Test: DL50 - Routes of Exposure: Oral – species: Rat - NOAEL : 2 000 mg/kg bw

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According to an acute oral toxicity test conducted with silicon carbide (crude and grains) it can be stated that the substances shows no orally toxic characteristics. The oral LD<sub>50</sub> in rats was determined to be > 2000 mg/kg body weight.

Interpretation of results: nontoxic

#### Route of Exposure: Skin contact

Study generated according to internationally accepted testing guidelines. (2008)

Test: DL50 - Routes of Exposure: Skin contact – species: Rat - Duration of exposure: 24h – NOAEL : 2000 mg/kg. According to an acute dermal toxicity test conducted with silicon carbide (crude and grains) it can be stated that the substance has no acute dermal toxic characteristics. The dermal LD<sub>50</sub> in rats was determined to be > 2000 mg/kg body weight.

Interpretation of results: nontoxic

#### b) Skin corrosion/irritation

Study generated according to internationally accepted testing guidelines. (2008)

Methods: in vivo - species: Rat - Duration of exposure: 24h - Score : 0

The substance is not a skin irritant. No skin changes at the application sites were observed throughout the observation period.

#### c) Serious eye damage/irritation

Data waiving : Silicon carbide (crude and grains) is an inert chemical and is likely to cause mechanical eye irritation due to large particle size and shape. Mechanical eye irritation produced by silicon carbide would camouflage any chemical irritation that might be caused by the substance. For this reason and due to the unethical aspect of in vivo eye irritation testing of a mechanical irritant, it was not considered reasonable to perform an eye irritation study.

In addition, documented occupational experience with the handling and use of silicon carbide (crude and grains) has revealed no cases of eye or dermal corrosion (i.e. irreversible damage to the skin or to the eye).

#### d) Skin sensitisation

No data available.

#### e) Respiratory sensitisation

No data available.

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### f) Germ cell mutagenicity

In vitro Study generated according to internationally accepted testing guidelines.

Conclusions: In conclusion, it can be stated that during the described mutagenicity test and under the experimental conditions reported, the test item extracts did not cause gene mutations by base pair changes or frameshifts in the genome of the tester strains used. Therefore extracts (polar and non-polar) of SiC, TRS-9899-100F are considered to be non-mutagenic in this bacterial reverse mutation assay.

### g) Carcinogenicity

Results of current intraperitoneal carcinogenicity studies with mineral and vitreous fibres (1996).

The study includes some 50 groups of male or female Wistar rats tested in three series. Except for one untreated group and 3 vehicle control groups, the animals were injected intraperitoneally (i.p.) once or repeatedly with dust suspensions and then examined, after lifetime observation up to 30 months, for tumours in the abdominal cavity. 1 granular dust (silicon carbide), 2 asbestos dusts (crocidolite, tremolite) and 11 vitreous fibre dust samples were administered. 5 of the vitreous fibre types were fine fibre fractions from 4 commercial insulation wools and 1 experimental wool, the others were prepared by milling glass microfibres, which have, per se, a small diameter range. The dosage per rat differed over a wide range. The lowest dose was  $0.04 \times 10^9$  crocidolite fibres in 0.5 mg dust, and the highest amounted to  $20 \times 10^9$  glass fibres in 1000 mg divided into 40 weekly injections.

**Two mesotheliomas were found in a total of 395 rats treated with saline or granular silicon carbide (250 or 1000 mg).**

Eleven fibre dusts produced dose-dependent mesotheliomas at rates of up to 97 %, but the calculated fibre number  $> 5 \mu\text{m}$  in length required for inducing a 25 % tumour risk differed between the fibre samples tested in the relation of 1 to about 1000. UICC-like crocidolite heads the ranking order; the glass fibre B-01, which possesses a low durability in the body, ends it together with a rather thin sample of glass fibre type B-09. The stone fibre MMVF-21 takes a high place in the ranking order, similar to the tremolite sample.

### h) Reproductive toxicity

No data available.

### i) Target Organ Effects - single exposure (STOT SE)

No data available.

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#### j) Target Organ Effects - repeated exposure (STOT RE)

##### Repeated dose toxicity: inhalation

Publication - Toxicological investigations on silicon carbide - 1. Inhalation studies (1993)  
British Journal of Industrial Medicine 1993; 50: 797-806

The question of lung damage as a result of exposure to silicon carbide (SiC) was investigated by inhalation experiments to obtain information on the qualitative response of lung tissue to the test substance (SiC). For comparison, quartz, kaolinite, and tempered clay dusts were used. The indices for the effects of the dusts studied were organ weights, numbers of bronchoalveolar cells, lung surfactant phospholipid concentrations including subfractions, and lung clearance.

Exposure to the test samples was carried out according to the Essen inhalation model in two independent series. The results of the two series were similar: Compared with sham controls, exposure to SiC did not affect the indices studied. Even at a low dose (a quarter of the SiC dose) quartz gave pronounced deviations in all indices. In particular, an increase in granulocytes indicated toxic properties of the dust. The long term elimination of quartz from the lung was worse than that of SiC. The kaolinite and tempered clay dusts were intermediate between SiC and quartz based on several of the indices studied. It is concluded that SiC is deposited practically inert in the lung.

#### k) Aspiration Hazard

No data available.

#### 11.2. Other adverse effects

##### Exposure related observations in humans:

Publication British Journal of Industrial Medicine 1987; 44: 57-59

Mortality and cancer incidence among workers in an abrasive manufacturing industry

Details on study design: The study was of a cohort design with a comparison of the cancer morbidity and mortality with that of the general population. Complete personnel files were available from about 1955. These files were used to identify a cohort of men with at least five years employment sometime between 1955 and 1983. A total of 911 individuals were enrolled; 211 were women, both in administration and production, and of the 700 men, 521 were blue collar workers. All individuals were traced through the official registers and followed up until 31 December 1983 if not dead or emigrated before that date. Seven men had emigrated and eight could not be traced; all were blue collar workers. The loss to follow up was thus about 2% in total or 3% for the blue collar workers.



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Information about mortality and cancer morbidity was collected through the National Death Register and the National Cancer Register, respectively. Only the underlying cause of death was considered and a restriction was made by excluding ages above 74 as the diagnostic validity is likely to decrease at higher ages. The observation periods were 1958-83 for mortality and 1958-81 for cancer morbidity, the reason for the difference in the observation period being the lack of cancer incidence data after 1981. Expected incidences were calculated with the person-year method using incidence rates for the general population, stratified for age, calendar year, and gender, for which procedure the EPILIN program was used.

Results: No significant increase was found in mortality or in cancer morbidity among the blue collar workers. Among the blue collar workers were four cases of non-malignant respiratory diseases (pneumonia (1), chronic bronchitis (2), and asthma (1)), whereas 3.2 cases of respiratory diseases would have been expected for the general population. No case of silicosis was found.

## SECTION 12: ECOLOGICAL INFORMATION

All information provided below refers to the public available information in the silicon carbide's REACH registration dossier.

### 12.1. Aquatic toxicity - Component Information

Long-term toxicity to aquatic invertebrates

Study generated according to internationally accepted testing guidelines (2008)

The observed difference in the reproduction rate is only very slight until day 19. Perhaps the significant difference at day 22 on the reproduction is just the result of a slight effect on the date of the reproduction. Additionally the comparison with last 15 finalized Daphnia reproduction studies performed at the test facility demonstrates the value of the alive offspring per adult in the control of the current test appeared to be unusual high. Therefore the result of the present study appears to be a pseudo-effect, caused by unusual high reproductive activity in the control treatment of the study. The complete set of historical data of the 15 studies of the same type done before are provided to support this conclusion

### 12.2. Persistence and degradability

Chemically inert and insoluble in water; separation by mechanical processes (sedimentation, filtration, etc...)

### 12.3. Bioaccumulative potential

No potentials known

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### 12.4. Mobility in soil

No data available.

No environmental problems known.

### 12.5. Results of PBT and vPvB assessment

Not matching PBT or vPvB criteria.

### 12.6. Other adverse effects

No environmental problems expected, if handled and treated in accordance with standard industrial.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### Product Information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal. Hazardous waste according to European Waste Catalogue (EWC).

European Waste Code for the mixture : 06 08 99 (WASTES FROM THE MFSU OF SILICON AND SILICON DERIVATIVES Wastes not otherwise specified.)

Empty containers should be treated as waste

Waste treatment methods must respect the "Waste hierarchy" according to the European directive 2008/98/CE:

- (a) prevention;
- (b) preparing for re-use;
- (c) recycling;
- (d) other recovery, e.g. energy recovery; and
- (e) disposal.

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#### SECTION 14: TRANSPORT INFORMATION

14.1 UN number	Not applicable, non hazardous material
14.2 UN proper shipping name	Not applicable, non hazardous material
14.3 Transport hazard class(es)	Not applicable, non hazardous material
14.4 Packing group	Not applicable, non hazardous material
14.5 Environmental hazards	Not applicable, non hazardous material
14.6 Special precautions for user	Not applicable, non hazardous material
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable, non hazardous material

#### SECTION 15: REGULATORY INFORMATION

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

###### REACH

At the establishment date of the SDS:

- This substance is not identified as a substance of very high concern for Authorisation (SVHC)
- This substance is not under restrictions (Annex 17)
- This substance is not in the evaluation's process

###### CLP

At the establishment date of the SDS:

- This substance is not included at CLP annex 6

##### 15.2. Chemical Safety Assessment

Not relevant because the substance is not classified.

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### SECTION 16: OTHER INFORMATIONS

**According to Article 31 of the Regulation (EC) No 1907/2006 (REACH), a Safety Data Sheet (SDS) must be provided for hazardous substances or preparations. This product does not meet the classification criteria of the Regulation (EC) No 1272/2008 (CLP). Therefore such document is outside the scope of Article 31 of REACH and the requirements for content in each section do not apply.**

**In accordance with REACH article 31(5), safety data sheets shall be supplied in an official language of the Member State(s) where the substance or mixture is placed on the market. This obligation, however, only applies for hazard-classified products which require a formal SDS. Since this product is not hazard-classified, this SDS is, in accordance with current regulation, provided in English language only.**

#### Abbreviations, acronyms

REACH: Registration, Evaluation and Authorisation of Chemicals

OECD = Organization for Economic Co-operation and Development

PNOS: Particles Not Otherwise Specified

bw = body weight

bw/day = body weight/day

LD50 = 50% Lethal Dose - Chemical amount, given at once, which causes the death of 50% (one half) of a group of test animals

LC50 = 50% Lethal concentration - Concentration of a chemical in air or a chemical in water which causes the death of 50% (one half) of a group of test animals

LL = Lethal Loading

SDS: Safety Data Sheet

ECHA: European Chemicals Agency

CMR: Carcinogenic (C) or Mutagenic (M) or Toxic to reproduction (R)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: veryPersistent and veryBioaccumulable

ADR: Accord for dangerous goods by road

EC: European Inventory

CAS: numerical identifier assigned by Chemical Abstracts Service (CAS)

PEL: Permissible Exposure Limits

SVHC: Substances of very high concern for Authorisation

TLV-TWA: Threshold Limit Value-Time Weighted Average (8 hours)

ACGIH: American Conference of Governmental Industrial Hygienists

SiC : Silicon carbide

w/w: weight divided by weight (mass concentration)

IARC: The International Agency for Research on Cancer

NA: Not applicable

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ACGIH: American Conference of Governmental Industrial Hygienists  
MFSU : Manufacture, Formulation, Supply And Use

### General information

This document was prepared by a competent person who has been properly trained for SDS's drafting. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations.

### Tracking

Version 1	Creation
Version 2	Update following the addition of safety information about our substance
Version 3	Update following investigation about nanofibers emission
Version 4	Update of 1.1: trade names and description, update of 9.1: bulk density
Version 5	Update REACH registration [Registration number]
Version 6	Update Trade Names
Version 7	Update Trade Names
Version 8	Update SiC fibres classification
Version 9	Update SiC fibres classification

### Main bibliographic sources:

Data comes from registration dossiers submitted to ECHA  
Candidate List of substances for authorization  
REACH Annex XIV  
REACH Annexe XVII  
Guidance

- Guidance on safety data sheets
- Guidance on the Application of the CLP Criteria
- Guidance on labelling and packaging

ACGIH review : <https://www.acgih.org/>

British Journal of Industrial Medicine:

1993, vol. 50, issue 9, part 1, pages 797-806

1993, vol. 50, issue 9, part 2, pages 807-813

<http://www.iarc.fr/>

[http://www.waste.ru/uploads/library/ewc\\_paper-v1.09.pdf](http://www.waste.ru/uploads/library/ewc_paper-v1.09.pdf)

GESTIS International Limit Values – DGUV

### End of the safety data sheet