Product Safety Information

1. Identification

Product name:	Silicon
Product application:	- Alloying into aluminium, - Production of silicones (siloxanes) via $(CH_3)_2SiCl_2$, - Production of electronic grade silicon via $HSiCl_3$, - Production of synthetic amorphous silica via $SiCl_4$, - Other industrial applications.
Address/Phone No.:	PCC BakkiSilicon hf Bakkavegur 2 640 Húsavík Telephone: +354 4640060 www.pcc.is
REACH registration number:	01-2119480401-47-0287
REACH and CLP helpdesk:	REACH Website: https://echa.europa.eu/home
Emergency Phone No.:	https://echa.europa.eu/support/helpdesks

2. Hazards Identification

Classification of the substance:	The product does not meet the criteria for hazard classification in accordance with Directive 67/548/EEC (DSD) and Regulation (EC) No. 1272/2008 (CLP).
Hazard symbol/Hazard pictogram:	N/A (not applicable)
Symbol letter/Indication of danger:	N/A (not applicable)
Signal word:	N/A (not applicable)
R-/H-phrases:	N/A (not applicable)
S-/P-phrases:	N/A (not applicable)

Silicon dust suspended in air may under certain conditions cause dust explosions (See section 10)

3. Composition/Information on Ingredients

IUPAC Name:	Silicon
CAS No.:	7440-21-3
EINECS No.:	231-130-8
Purity (weight %)	> 98.5 %

4. First Aid Measures

Inhalation:	Irritation caused by dust: Fresh air.
Skin contact:	Wash contaminated skin with water and/or mild detergent
Eye contact:	Rinse eyes with water/saline solution. If discomfort persists, obtain medical attention.
Ingestion:	Remove the person affected from the dust-exposed area. See inhalation.

5. Fire Fighting Measures

Extinguishing media:	Dry sand, CO_2 or dry powder.

Lump silicon is not combustible. Dusts of silicon with particle diameter < 75 µm can be ignited and will propagate flame. Silicon dust suspended in air may under certain conditions cause dust explosions. (See section 10).

6. Accidental Release Measures

Avoid handling that generates dust build-up. Released material should be collected in suitable containers. Dry dust can be vacuumed or swept up.

7. Handling and Storage

Handling:	Avoid dust generation. (See section 8). Avoid ignition sources (e.g. welding) in areas with high dust concentrations. Addition of wet material to molten silicon may cause explotions. (See section 10).
Storage:	Keep product dry.

8. Exposure Controls/Personal Protection

A) Occupational exposure controls:

Avoid inhalation of dust. Wear a particulate respirator according to EN 149 FFP 2S in areas of inadequate ventilation. Use protective gloves and eye protection. Facilities for eye flushing should be available.



National Occupational Exposure Limits (OEL) have to be adhered.

B) Environmental exposure controls

Target value and limit value for PM10 and PM2.5 (Directive 2008/50/EC):

	Averaging period	Limit value	By date
PM_{10}	One day	50 µg/m³*	1 January 2005
PM_{10}	Calendar year	40 µg/m³	1 January 2005
		Target value	
$PM_{2,5}$	Calendar year	25 µg/m³	1 January 2010
		Limit value	
$PM_{2,5}$	Calendar year	25 µg/m³	1 January 2015

*Not to be exceeded more than 35 times a calendar year.

9. Physical and Chemical Properties

Structure	Crystalline
Form:	Lump material
Colour:	Silvery material.
Odour:	Odourless.
Melting Point (°C):	Approx. 1410
Boiling Point (°C):	Approx. 2355
Solubility (Water):	Insoluble/slightly soluble.
Specific Gravity (water =1):	Approx. 2.3

10. Stability and reactivity

Silicon is insoluble in most acids, but dissolves in a mixture of hydrofluoric acid (HF) and nitric acid (HNO3) evolving hazardous gases. Impurities present in silicon (e.g. Al and Ca) may react with dilute acids evolving hazardous gases (see below). Silicon dissolves readily in dilute lye.

Conditions to avoid:	Avoid generating sparks or other ignition sources (e.g. welding) in areas with high dust concentrations. Silicon-particles suspended in air at concentrations above 100 g/m3 can cause dust explosions. Both ignition sensitivity and the violence of explosion increase with decreasing particle size. Silicon dust with particle diameter > 40 µm probably entails no danger of explosion. Ignition temperature (warm surface) ≥ 800 °C. Addition of wet material to molten silicon may cause explosions.
Materials to avoid:	Acids (see below).
Hazardous Decomposition Product(s):	A reaction with hydrofluoric acid (HF) and nitric acid (HNO3) leads to the formation of toxic gases such as silicon tetrafluoride (SiF4) or nitrous gases (NOx). Impurities in silicon may react with dilute acids forming flammable and harmful gases such as hydrogen (H2) and silane (SiH4). Wet product will form flammable hydrogen gas if added to molten silicon, due to decomposition of water.

11. Toxicological Information

The product does not meet the criteria for hazard classification according to Directive 67/548/EEC (DSD) and Regulation (EC) No. 1272/2008 (CLP).

Acute effects:

Ingestion:	Dust may irritate and dehydrate mucous membranes.
Inhalation:	Dust may irritate and dehydrate mucous membranes.
Skin Contact:	Dust may irritate and dehydrate skin.
Eye Contact:	Dust may irritate and lead to dryness.

Chronic effects: No chronic effects known.

12. Ecological Information

The product is not characterized as dangerous for the environment.

Mobility:	The product has poor mobility under normal environmental conditions.
Persistence:	Not relevant for metalloids.
Bioaccumulation:	Not relevant, due to low mobility and non-dispersive use.
Eco-Toxicity:	The product does not meet the classification criteria for ecotoxicological endpoints in accordance with Directive 67/548/EEC (DSD) and Regulation (EC) 1272/2008 (CLP).

13. Disposal considerations

The material should be recovered for recycling if possible.
Dispose of waste product according to applicable federal, state and local rules for non-hazardous solid waste materials.
Prior to disposal of large quantities of this material advice should be sought from the local Environment Agency Office.

14. Transport information

UN number:	Not applicable
IMDG/IMO	Not subject to classification
ADR/RID	Not subject to classification
ICAO/IATA	Not subject to classification

Environmental hazards:
The product is not considered to cause harm to aquatic organsims (Lillicrap, 2011). Silicon is not marine pollutant.

15. Regulatory information

A chemical safety assessment (CSA) has been carried out for the substance in accordance with Regulation (EC) 1907/2006 (REACH).

The text of this Product Safety Information is prepared in compliance with:

− Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

− Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on Classification, Labelling and Packaging of substances and mixtures (CLP).

16. Other information

According to Chapter 1.5.2 of the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Article 58 (2)(a), and Article 59(2)(b) of (EC) No 1272/2008 (CLP), which amends REACH article 31(1), safety data sheets (SDS) are only required for substances and mixtures that meet the harmonised criteria for physical, health or environmental hazards. Since this product does not meet these criteria, a SDS according to 453/2010/EC is not issued. In order to communicate relevant HSE (health, safety and environmental) information, this product safety information (PSI) is provided instead.

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, the product safety information (PSI) is, in accordance with current regulation, provided in English language only.

REACH article 31(7) requires relevant exposure scenarios from the Chemical Safety Report (CSR) to be annexed to the SDS. However, according to REACH Annex I, section 0. (Introduction), subsection 0.6. no 4 and 5, exposure scenarios are only required for hazard-classified substances or mixtures. Since this product is not hazard-classified according to CLP, there is no requirement for exposure scenarios.

Legal Disclaimer: The information given in this sheet is to the best of PCC BakkiSilicon knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made to its accuracy, reliability or completeness. It is the user’s responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.