

1. Identification of the Substance and Company

Product name: **Elkem Microsilica** ®

Product application: Cementitious systems.

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Emergency Phone No.: Not applicable

2. Hazards Identification

The product is unlikely to cause harmful effects when handled and stored as advised. See section 7.

3. Composition/Information on Ingredients

Synonyms: Amorphous silica, Silicon dioxide powder, Silica fume.

IUPAC-name: Silicon dioxide

CAS No.: 69012-64-2
EINECS No.: 273-761-1

Symbols and indications of danger: None.
R-phrases: None.
S-phrases: None.

Microsilica may contain small amounts of crystalline quartz (< 0.5 %).

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4. First Aid Measures

Inhalation: Remove exposed person from dusty area. Fresh air.
 Skin contact: Wash contaminated skin with water and/or a mild detergent.
 Eye contact: Rinse eyes with water/saline solution. If discomfort persists, obtain medical attention.
 Ingestion: Not applicable.

5. Fire Fighting Measures

The product is not combustible and the dust entails no danger of explosion.

Extinguishing media: Not applicable

6. Accidental Release Measures

Avoid exposure to dust of the product. Released material should be collected in suitable containers.

7. Handling and Storage

Handling: Avoid dust generation. See section 8.
 Storage: Keep away from hydrofluoric acid (HF). Not to be stored at temperatures near to or below 0 °C.

8. Exposure Controls/Personal Protection

A) Occupational exposure controls:

Avoid inhalation of dust. Ensure good dust ventilation during use. Wear a particulate respirator according to EN 149 FFP 2S/3S during dust generating operations. Use protective gloves and eye protection. Facilities for eye flushing should be available.

Occupational Exposure Limits (ACGIH¹⁾, 2008):

Substance	[CAS No.]	8hr TWA		ACGIH TLV 15 minute STEL		Notations
		ppm	mg/m ³	ppm	mg/m ³	
PNOS ²⁾	-	-	10 ^(I) /3 ^(R)	-	-	-
Silica, crystalline (SiO ₂) Quarz*	[14808-60-7]	-	0,025 ^(R)	-	-	A2
	Cristobalite* [14464-46-1]	-	0,025 ^(R)	-	-	-

¹⁾ American Conference of Governmental Industrial Hygienists

²⁾ Particulates (Insoluble or Poorly Soluble) Not Otherwise Specified. Amorphous silica fume is considered to be PNOS. Specific TLVs for the individual substances have not been established or have been withdrawn, respectively.

^(I) Inhalable fraction

^(R) Respirable fraction

B) Environmental exposure controls

Target value and limit value for PM₁₀ and PM_{2.5} (Directive 2008/50/EC):

	Averaging period	Limit value	By date
PM ₁₀	One day	50 µg/m ³ ★	1 January 2005
PM ₁₀	Calendar year	40 µg/m ³	1 January 2005
		Target value	
PM _{2.5}	Calendar year	25 µg/m ³	1 January 2010
		Limit value	
PM _{2.5}	Calendar year	25 µg/m ³	1 January 2015

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

9. Physical and Chemical Properties

Form:	Ultrafine amorphous powder (respirable dust). Dust forms agglomerates.
Colour:	Grey, off-white
Odour:	Odourless
Melting Point (°C):	1550-1570
Solubility (Water):	Insoluble/Slightly soluble
Solubility (Organic solvents):	Insoluble/Slightly soluble
Specific Gravity (water =1):	2.2-2.3
Bulk density (kg/m ³) approx.:	150-700
Specific surface (m ² /g):	15-30
Particle size, mean (µm):	≈ 0.15 (less than 0.1 % of primary particles > 45 µm)

10. Stability and reactivity

Conditions to avoid:	See below
Materials to avoid:	Hydrofluoric acid (HF).

Hazardous Decomposition Product(s):

The product reacts with hydrofluoric acid (HF) forming toxic gas (SiF₄).

Heating the product above 1000 °C can result in the formation of crystalline SiO₂-modifications as cristobalite / tridymite which may cause pulmonary fibrosis (silicosis).

11. Toxicological Information

Acute effects:

INGESTION:	Finely divided dust may cause mechanical irritation and dehydration of mucous membranes.
INHALATION:	Finely divided dust may cause mechanical irritation and dehydration of mucous membranes.
SKIN CONTACT:	Finely divided dust may cause mechanical irritation and dehydration.
EYE CONTACT:	Finely divided dust may cause mechanical irritation and dehydration.

Chronic effects:

Inhalation of microsilica dust is considered to entail minimal risk of pulmonary fibrosis (silicosis). However, chronic obstructive lung disease is suspected following long term exposure (years) for concentrations above recommended occupational exposure limits.

12. Ecological Information

Elkem Microsilica[®] is not characterised as dangerous for the environment.

MOBILITY: The product is not mobile under normal environmental conditions.
PERSISTENCE: Not relevant for inorganic substances.
BIOACCUMULATION: Not relevant.
ECOTOXICITY: Elkem Microsilica: *Daphnia magna*:
24 h EC₅₀ > 1002 mg/l
24 h EC₁₀₀ >1002 mg/l
NOEC 319 mg/l
Coarse microsilica has been subject to Microtox™ screening test.
No acute toxicological effects could be observed in the test organisms.

13. Disposal Considerations

The material should be recovered for recycling if possible.
This material is not classified as hazardous waste according to Commission Decisions 2000/532/EC and 2001/118/EC. Prior to disposal of large quantities of this material advice should be sought from the Environment Agency Office.

14. Transport Information

UN -
IMDG/IMO Not subject to classification
ADR/RID Not subject to classification
ICAO/IATA Not subject to classification

15. Regulatory Information

Product classification and labelling:

Symbol: Not subject to classification
R-phrases: None.
S-phrases: None.

The text of this Data Sheet 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).
- Council Directive 67/548/EEC and its subsequent amendments.

16. Other Information

Literature references are available upon application to the manufacturer.
Elkem Microsilica[®] is a trademark of Elkem AS.