

Safety Data Sheet:

R-E-D Fume – 102 DK

R-E-D Fume – 106 UK

R-E-D Fume – 206 UC



Section 1 – Identification of Product and Company

Product Name	Silica Fume.		
Product Lines Covered	Silica Fume, 102 DK, 104 OK, 106 UK, 102 PK, 109 WK.		
Synonyms	Bag House Dust, APC Dust.		
CAS Number	69002-64-2.		
Chemical Formula	SiO ₂ (Fe ₂ O ₃ -Al ₂ O ₃ -CaO-MgO)		
Product Application(s)	Additive for the production of cement / supplementary cementitious material.		
Distributor Information	R-E-D Industrial Products 4 Village Park Dr. Grove City, PA 16127 United States	Emergency Phone Number Technical Information Fax Number Website	(877) 733-2281 (877) 733-2281 www.redindustrialproducts.com

Section 2 – Hazards Identification

This product does not represent a health, safety, or environmental hazard when handled, used, and stored as directed, per Section 7. Silica Fume is comprised of the amorphous form of Silica (SiO₂), but it may contain small amounts of crystalline quartz (< 0.5%). The amount of respirable crystalline Silica in the product is below 0.1%.

Hazard Classification	The product does not meet the criteria for hazard classification in accordance with Regulation (EC) No 1272/2008 (CLP).
Signal Word	Not applicable.
Hazard Pictogram	Not applicable.
S and P Phrases	Not applicable.
R and H Phrases	Not applicable.

Section 3 – Composition / Information on Ingredients

Ingredients:	Weight %	CAS #	Index #	EC #
Silica Fume	100%	69012-64-2		273-761-1
Carbon (C)	<6.0	7440-44-0		231-153-3
Sodium Oxide (Na ₂ O)	<2.0	1313-59-3		215-208-9
Magnesia (MgO)	<3.0	1309-48-4		215-171-9
Alumina (Al ₂ O ₃)	<3.0	1344-28-1		215-691-6
Silicon dioxide (SiO ₂) Amorphous form	70.0-85.0 85.0-95.0	69013-64-2		273-761-1
Silicon dioxide (SiO ₂) Crystalline form	<0.5	14808-60-7		238-878-4
Calcium Oxide (CaO)	<2.0	1305-78-8		215-138-9
Potassium Oxide (K ₂ O)	<2.0	12136-45-7		-
Iron Oxide (Fe ₂ O ₃)	<10.0	1309-37-1		215-168-2

Section 4 – First Aid Measures

Inhalation	Remove to fresh air, irritation may be caused by dust. Seek medical attention for persistent feeling of discomfort, or for Phosphine/Arsine intoxication [See Section 11].
Skin Contact	Wash skin with mild soap and water. Seek medical advice/attention if irritation occurs or persists.
Eye Contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice/attention if irritation occurs or persists.
Ingestion	Remove person from dust-exposed area. See inhalation measures.

Section 5 – Firefighting Measures

The product is not combustible, and the dust has no inherent danger/risk of explosion.

Extinguishing Media	Not applicable. Silica Fume is not combustible. Any media used will depend on surrounding fire.
Special Information	None.

Section 6 – Accidental Release Measures

Material should be collected in suitable containers. Collect material using a method that will avoid creating airborne dust. High efficiency vacuum cleaning is recommended to recover spills. Avoid exposure to the dust with PPE [See Section 8].

Section 7 – Handling and Storage

Handling	Avoid handling that generates dust flare-up. Avoid inhalation of dust [See Section 8].
Storage	Keep Silica Fume away from Hydrofluoric Acid (HF).

Section 8 – Exposure Controls / Personal Protection

Personal Protective Equipment (PPE):

Eye Protection	ANSI-rated safety glasses with side shields; eyewash facilities. For airborne dust situations, where potential for mechanical injury due to exposure to airborne particles exists, wear safety goggles.
Respiratory Protection	Avoid dust inhalation and ensure good dust ventilation while using product. NIOSH approved respirator (42 CFR 84 NIOSH/MSHA approved respirators where airborne meet/exceed PEL's), in accordance with the following, pertinent standards: 29 CFR 1910.134, CSA Standard Z94.4-M1982, or EN 149+A1.
Skin Protection	Suitable protective gloves and clothing to keep dust off skin.
Ventilation	A well-ventilated work/storage area (local exhaust, when necessary, to achieve dust control, ventilation, and adequate air exchanges in closed spaces). If adequate ventilation for air exchanges is not possible (storage holds, bunkers, etc), then a self-contained breathing apparatus or a supplied air respirator is recommended.

Occupational Airborne Exposure Limits (ACGIH, 2013):

Substance	OSHA PEL (8 hr. TWA mg/m ³)	ACGIH TLV® (8 hr. TWA mg/m ³)
PNOS ¹	15 inhalable fraction / 5 respirable fraction	10 inhalable fraction / 3 respirable fraction
Silica, crystalline Quartz	12 inhalable fraction / 4 respirable fraction	0.025 respirable fraction
Silica, Cristobalite	6 inhalable fraction / 2 respirable fraction	0.025 respirable fraction

¹ Particulates (Insoluble or Poorly Soluble) Not Otherwise Specified. Amorphous Silica Fume is considered to be PNOS. Specific TLV's here have either not been established or have been withdrawn.

Section 9 – Physical and Chemical Properties

Appearance / Form	Gray, off-white/submicron, amorphous powder. Has tendency to agglomerate.
Odor	None.
Odor Threshold	Not applicable.
pH	6.0 - 9.0
Melting Point (° F)	2820° F to 2860° F
Specific Gravity (water =1.0)	2.2 – 2.5 (bulk density ~ 8 to 48lb/ft ³)
Initial Boiling Point	Not applicable.
Flash Point	Not applicable.
Evaporation Rate	Not applicable.
Flammability (solid only)	No ignition.
Specific Surface	15 – 30m ² /g
Upper/Lower Flammability or Explosive Limits	Not applicable.
Vapor Pressure	Not applicable.
Vapor Density	Not applicable.
Relative Density	2.5 – 7.3g/cm ³
Solubility (water/organic)	Insoluble / Insoluble.
Partition Coefficient (n-octanol/water)	Not applicable.
Auto-Ignition Temp	Not applicable.
Decomposition Temp	Not applicable.
Viscosity	Not applicable.
Oxidizing Properties	Not applicable.
Mean Particle Size	~ 0.30µm (less than 0.1% of primary particles > 45µm)

Section 10 – Stability and Reactivity

Reactivity	Not reactive at normal temperatures and pressures.
Stability	Stable under normal storage conditions (See Section 7).
Conditions to Avoid	See below.
Materials to Avoid / Incompatibles	Hydrofluoric Acid (HF)
Hazardous Decomposition Products	The product reacts with HF to form toxic gas (SiF ₄). Heating the product above 930° F for prolonged periods can result in the formation of crystalline SiO ₂ modifications as Cristobalite/Tridymite, which may cause pulmonary fibrosis (silicosis). Increased temperatures will increase the formation rates of these crystalline forms.

Section 11 – Toxicological Information

Potential Health Effects

Exposure OSHA PEL's and ACGIH TLV's® for ingredients and reaction products are specified in Section 8. There are no OSHA PEL's or ACGIH TLV's® established, nor LC50 or LD50 established, for Silica Fume.

Acute Effects:

Inhalation Finely divided dust may irritate/dehydrate mucous membranes.

Skin Contact Finely divided dust may irritate/dehydrate the skin.

Eye Contact Finely divided dust may irritate/dehydrate the eyes.

Ingestion Finely divided dust may irritate/dehydrate mucous membranes.

Chronic Effects: Inhalation of the product is considered to entail minimal risk of pulmonary fibrosis, or silicosis. Chronic obstructive lung disease, however, is suspected following long term (years) exposure for concentrations above recommended occupational exposure limits, without use of specified PPE. Silica Fume may contain < 0.5% of crystalline Silica, which has been shown to cause silicosis and has been identified as a possible human carcinogen by IARC and NTP. Heating the product above 930° F for prolonged periods can result in the formation of crystalline SiO₂ modifications as Cristobalite/Tridymite, which may cause pulmonary fibrosis. Increased temperatures will increase the formation rates of these crystalline forms.

Section 12 – Ecological Information

The product is not characterized as dangerous for the environment.

Eco-Toxicity LC50/LD50 not determined, but material is inorganic and insoluble.

Persistence / Degrade Not relevant for inorganic substances.

Bioaccumulation Not relevant for this material.

Mobility The material is not mobile under normal environmental conditions.

Other Adverse Effects Predicted No Effect Concentration (PNEC) = N/A.

Section 13 – Disposal Considerations

The material should be recovered, wet or dry, for recycling and re-use where/when possible. Prior to disposal of material, contact the manufacturer and/or the nearest Environmental Agency for advice. Dispose of in accordance with applicable federal, state, provincial, and local regulations. Material is not a listed RCRA Hazardous Wastes (40 CFR 261), nor by Commission Decisions 2000/532/EC and 2001/118/EC.

Section 14 – Transport Information

Proper Shipping Name Silica Fume.

U.S. Department of Transportation Classification:

Proper Shipping Name Not applicable.

Hazard Class Not regulated.

ID Number and Initials Not regulated.

Packing Group Not regulated.

Label(s) Not regulated.

National Motor Freight Classification 50

International: Not regulated.

UN Number -

Canada-TDG -

IMO/BC Code	Not subject to classification.
BC-Number	Not subject to classification.
IMDG-Code	Not subject to classification.
ICAO/IATA	Not subject to classification.
ADR/RID	Not subject to classification.
GHS/CLP (EC) No. 1272/2008	Not subject to classification.

Section 15 – Regulatory Information

This Safety Data Sheet is prepared in compliance with: Regulation EC 1907/2006 of 12/18/2006 (REACH), Regulation EC 1272/2008 of 12/16/2008 (CLP), and OSHA 29 CFR 1910.1200 of 05/25/2012 (HCS). Amorphous silica fume can be considered a nuisance dust and is as such outside the scope of the revised HCS (29 CFR 910.1200 section (b)(6)(x)).

TSCA (Toxic Substance Control ACT)	The product is listed in the TSCA (Toxic Substance Control Act) Inventory (ID 51143, CAS # 69012-64-2).
CERCLA (Comprehensive Response Compensation and Liability Act)	The product is not listed in 40 CFR 302.4.
RCRA (Resource Conservation Recovery Act)	Silica Fume is not a listed hazardous waste.
SARA Title III (Superfund Amendments and Reauthorization Act)	302/304 Extreme Hazard Categories: Not applicable. 311/312 Hazard Categories: Not applicable. 313 Reportable Ingredients: None.
California Proposition 65	This material contains chemical(s) known to the State of California to cause cancer: Crystalline Silica may be present at < 0.5% total concentration.
DSL Canada (Domestic Substance List)	The substance is specified on the public Portion of the Domestic Substances List (identifier: 69012-64-2).

Section 16 – Other Information

According to Chapter 1.5.2 of the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS), safety data sheets (SDS) are only required for substances and mixtures that meet the harmonized criteria for physical, health or environmental hazards. This product does not meet these criteria and is not classified as hazardous under CLP Regulation (1272/2008/EC), or as dangerous under the Dangerous Substances Directive (67/548/EEC). The product is also not a persistent bio-accumulative and toxic, a very persistent/very bioaccumulative (Annex XIII REACH) and not listed in the ECHA candidate list of substances of very high concern. The purpose of this sheet is to communicate pertinent health, safety, & environmental information for the users of the material. Handling practices set forth herein are recommended minimums. This information may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy themselves as to the suitability and completeness of this information for the user's own, particular use. RED Industrial Products, LLC assumes no responsibility in the safe handling of the material by others and makes no representation or warranty, expressed or implied, as to completeness, accurateness, or correctness of any data contained herein.