Safety Data Sheet:

R-E-D Fume Concrete – 102 DM
R-E-D Fume Refractory – 106 UM
R-E-D Fume Oil & Gas – 104 OG

MISSISSIPPI SILICON

Section 1 – Identification of Product and Company

Product Name	Silica Fume.
Trade Name(s)	Amorphous Silica, Silicon Dioxide, Microsilica, Corrochem, Micropoz, RED 102 DM, RED 104 OG, RED 106 UM.
Product Code	Not applicable.
Product Use	Pozzolan.
Restrictions	None identified.
Chemical Formula	Varies.
Appearance	Light gray to medium gray.
Odor	None.

Distributor Information

R-E-D Industrial Products
4 Village Park Dr.
Grove City, PA 16127
United States

Emergency Phone Number

Technical Information	(877) 733-2281
Fax Number	(877) 733-2281
Website	www.redindustrialproucts.com

Section 2 – Hazards Identification

Silica Fume is generally considered a nuisance dust of low toxicity. Use and handling of Silica Fume does not represent a health risk when normal safety rules are observed. Silica Fume when handled and stored in accordance with this document is unlikely to cause harmful effects. It is possible for Silica Fume to contain trace amounts of crystalline silica, which has been shown to cause silicosis, and has been identified by IARC and NTP as a possible human carcinogen.

GHS Classification:

Health	Airborne dust generated through the use or handling of the product may result in respiratory tract and/or eye discomfort.
Physical	Material is not known to be a water reactive flammable solid material based on United Nations recognized analytical methods. Dust from this product is non-combustible even when in a dust cloud form and presents no danger of explosion.
OSHA Hazard Category	Not classified.
GHS Category	Not classified.
GHS Pictogram Label(s)	None.
Signal Word	None.
Hazard Statements	None.
Precautionary Statements	Avoid breathing dust, as it may irritate and dehydrate mucous membranes. Avoid skin contact. Dust may irritate skin. Avoid eye contact. Dust may irritate and lead to dryness of the eyes. Do not ingest.

Section 3 – Composition / Information on Ingredients

Ingredient	CAS No#	Percent %
Silicon Dioxide - Amorphous	69012-64-2	> 85
Carbon	7440-44-0	< 6
Iron Oxide	1309-37-1	< 2
Aluminum Oxide	1344-28-1	< 2
Sodium Oxide	1313-59-3	< 2
Potassium Oxide	12136-45-7	< 2
Magnesium Oxide	1309-48-4	< 2
Calcium Oxide	1305-78-8	< 2

Manufacturers can provide detailed elemental analysis including other trace elements. The (wt%) values will change if silica fume is from ferrosilicon production.

Section 4 – First Aid Measures

Inhalation If product is inhaled and irritation of the nose or coughing occurs, remove person to fresh air. Seek medical advice/attention if irritation occurs or persists.

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 Rinse mouth with water. Do NOT induce vomiting. Seek immediate medical attention.

Section 5 – Firefighting Measures

Silica fume is non-combustible even when in a dust cloud and presents no danger of explosion.

Extinguishing Media Not applicable, the product is not flammable.

Special Information None.

Section 6 – Accidental Release Measures

Use collection methods that minimize creation of airborne dust. High efficiency vacuuming is recommended to recover spilled dry dust. Place in suitable container for recycling or disposal.

Section 7 – Handling and Storage

Handling Prevent the creation of airborne dust. Wear appropriate personal protective equipment. See OSHA 29 CFR 1910-94 (Ventilation).

Storage General storage, best in closed containers, ambient air temperature, keep dry.

Section 8 – Exposure Controls / Personal Protection

Airborne Exposure Limits:

Component	OSHA P E L	ACGIH TLV
Silicon Dioxide - Crystalline	50 µg/m (RESP)% SiO_2 + 2	25 µg/m^3

Ventilation System	Local exhaust suggested in any processing areas. Ensure good ventilation.
Person Respirators (NIOSH/MSHA Approved)	Use an appropriate filtering respirator when any airborne contaminates reach or exceed the Permissible Exposure Limit (PEL). In poorly ventilated areas, such as confined spaces, a self-contained breathing apparatus or a clean air supplied respirator should be worn.
Skin Protection	Avoid any contact with skin. Wear protective gloves.
Eye Protection	Avoid any contact with eyes. Wear appropriate eye protection and have access to eye wash stations.
Other Control Measures	Do not breathe respirable dusts.

Section 9 – Physical and Chemical Properties

Physical State	Amorphous submicron powder. Dust has a tendency to agglomerate.
Odor	None.
Solubility	Insoluble in water.
Specific Gravity	2.2 - 2.5
pH	6.0 - 9.0
Volatiles % by Volume (@ 21° C (70° F))	Not Available.
Bulk Density	Approx. 8 to 48lb/ft^3 or 128 to 769kg/m^3
Melting Point	1200° C to 1300° C
Solubility Solvents	Insoluble to slightly soluble in organic solvents.
Flash Point	Not available.
Flammability (solid)	No ignition.
Particle Size	Approx 0.4μm
Vapor Pressure (mm Hg)	Not available.
Evaporation Rate (BuAc = 1)	Not available.

Section 10 – Stability and Reactivity

Stability	Stable under normal temperatures.
Incompatibilities	Soluble in hydrofluoric.
Hazardous Decomposition Products	Heating at temperatures above 500° C (930° F) for prolonged time-period will convert amorphous silica to crystalline phases.

Section 11 – Toxicological Information

Acute Effects	No data available.
Chronic Effects	Silica Fume is generally considered a nuisance dust of low toxicity. Consequently, it is considered to pose minimal risk of pulmonary fibrosis (silicosis). Avoid prolonged exposure to Silica Fume dust concentrations above recommended exposure limits, unless protective equipment is used. It is possible for Silica Fume to contain trace amounts of crystalline silica, which has been shown to cause silicosis, and has been identified by IARC and NTP as a possible human carcinogen. Heating Silica Fume at temperatures above 500° C (930° F) for prolonged periods will convert amorphous silica to crystalline phases Cristobalite and Tridymite that may cause silicosis. Increased temperatures will increase the formation rate of these phases.

Section 12 – Ecological Information

Environmental Fate No adverse effects are expected. Silica Fume is not considered dangerous to the environment.

Eco-Toxicological Fate Not currently known.

Section 13 – Disposal Considerations

Recovered material should be recycled, if possible. Ensure the material is disposed of in accordance with all Federal, State and Local regulations.

Section 14 – Transport Information

DOT 49 C FR	IATA Air	IMDG Vessel	ADR
Not Regulated for Transportation.	Not Regulated for Transportation.	Not Regulated for Transportation.	Not Regulated for Transportation.

Classification National Motor Freight Classification (NMFC): 55.

Section 15 – Regulatory Information

SARA 312/313 (RTK) Not applicable.

SARA 313 This product contains no chemicals subject to the SARA 313 supplier notifications requirements.

CERCLA No CERCLA chemicals exist in this product above a reportable concentration.

TSCA All chemicals in this product are compliant with TSCA 2019 active commerce regulations.

TSCA Section 12(b) Export Notification There are no TSCA 12(b) chemicals in this product.

California Proposition 65 This product may contain crystalline silica, a chemical known in the State of California to cause cancer, birth defects, or other reproductive harm. It is possible for Silica Fume to contain trace amounts <0.05% of crystalline silica.

Section 16 – Other Information

NFPA Ratings: (estimated)	HMIS Ratings:
Health - 0	Health - 1
Flammability - 0	Flammability - 0
Reactivity - 0	Physical Hazard - 0
	Personal Protection - E (See Section 8)

All information, recommendations, and suggestions, appearing herein concerning forementioned products are based on data believed to be accurate and reliable. Since the actual use by others is beyond our control, it is the user's responsibility to determine the suitability of the product for its use and to adopt such safety precautions as may be necessary. Since the conditions of use are not under our control, R-E-D Industrial Products disclaims all liability with respect to the use of any material supplied by R-E-D Industrial Products.