Safety Data Sheet:

R-E-D Fly Ash FA100 type F (OS)

Section 1 – Identification of Product and Company

Tradenames	R-E-D Cemguard Type F Fly Ash.
Other Means of Identification	Class F Fly Ash
Formula	UVCB Substance
Product Uses	Component of wallboard, concrete, roofing material, bricks.
Uses Advised Against	None known.

Manufacturer

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

Classification of the Substance
GHS Classification(s) according to OSHA Hazard Communication Standard (29 CFR 1940.1200):

STOT-SE Category 3
Eye Irritant Category 2A
STOT-RE Category 2.

Note: The level of respirable crystalline silica (RCS) present in this product has not been determined; however, a conservative classification for STOT-RE, Category 2 has been assigned.

Labeling According to 29 CFR 1910.1200 Appendices A, B and C*

Hazard Pictograms

Signal Word

Danger

Hazard Statements

Causes serious eye irritation.
May cause respiratory irritation.
May cause damage to lungs after repeated/prolonged exposure via inhalation.

Precautionary Statements

Do not breathe dust.
Wash thoroughly after handling.
Wear eye protection.
Use outdoors or in a well-ventilated area.
If inhaled: remove to fresh air and keep comfortable for breathing.
Get medical advice/attention if you feel unwell.
If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, get medical advice/attention.
Store in a secure area.
Dispose of product in accordance with local/national regulations.

*Fly ash and other coal combustion products (CCPs) are UVCB substances (substance of unknown or variable composition or biological). Various CCPs, noted as Ashes; Ash, Ash residues, Ashes, Residues, Bottom, Bottom ash, Bottom Ash Residues, Waste Solids, under TSCA are defined by the US EPA as: "The residuum from the burning of a combination of carbonaceous materials. The following elements may be present as oxides: aluminum, calcium, iron, magnesium, nickel, phosphorus, potassium, silicon, sulfur, titanium, and vanadium." Ashes including fly ash and fluidized bed combustion ash are identified by CAS number 68131-74-8. The exact composition of the ash is dependent on the fuel source and flue additives composed of a large number of constituents. The classification of the final substance is dependent on the presence of specific identified oxides as well as other trace elements.

Other Hazards
Listed Carcinogens:
Respirable Crystalline Silica

IARC: [Yes] **NTP:** [Yes] **OSHA:** [No] **Other:** [No]

Section 3 – Composition / Information on Ingredients

Substance	CAS No.	Percentage (%)	GHS Classification
Aluminosilicates	71243-67-9	15% - 24%	Single Exposure STOT, Category 3
Amorphous Silica	60676-86-0	28% - 45%	
Crystalline Silica	14808-60-7	1% - 5%	Repeat Dose STOT, Category 2
Silica, Crystalline Respirable (RCS)	14808-60-7	See Note 1	Repeat Dose STOT, Category 2
Calcium Oxide	1305-78-8	Total 16% - 33%	Skin Irritant Category 2 Eye Irritant Category 2B
Phosphorous Pentoxide	1314-56-3	0.5% - 2.6%	Skin Irritant Category 2 Eye Irritant Category 2B

1. The percentage of respirable crystalline silica has not been determined.

Section 4 – First Aid Measures

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

Skin Contact Wash off with soap and water.

Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Seek medical advice/attention if irritation occurs or persists.

Ingestion No specific first aid measures are required.

Most Important Health Effects, Both Acute and Delayed: Accute Effects: Direct exposure may cause respiratory irritation, eye irritation and skin irritation. The product dust can dry and irritate the skin and cause dermatitis and can irritate eyes and skin through mechanical abrasion. **Chronic Effects:** Chronic exposure may cause lung damage from repeated exposure. Chronic inhalation of dusts containing respirable crystalline silica may result in silicosis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: Seek first aid or call a doctor or Poison Control Center if contact with eyes occurs and irritation remains after rinsing.

Section 5 – Firefighting Measures

Extinguishing Media:

Suitable Extinguishing Media Product is not flammable. Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media Not applicable, the product is not flammable.

Special Hazards Arising from the Substance or Mixture:

Hazardous Combustion Products None Known.

Advice for Firefighters:
Special Protective Equipment and Precautions for Firefighters; as with any fire, wear self-contained breathing apparatus (NIOSH approved or equivalent) and full protective gear.

Section 6 – Accidental Release Measures

Personal Precautions / Protective Equipment	See Section 8 - Personal Protective Equipment (PPE). For concentrations exceeding Occupational Exposure Levels (OELs), use a self-contained breathing apparatus (SCBA).
Emergency Procedures	Use scooping, water spraying/flushing/misting or ventilated vacuum cleaning systems to clean up spills. Do not use pressurized air.
Environmental Precautions	Prevent contamination of drains or waterways and dispose according to local and national regulations.
Methods and materials for Containment and Cleaning Up	Do not use brooms or compressed air to clean surfaces. Use dust collection vacuum and extraction systems. Large spills of dry product should be removed by a vacuum system. Dampened material should be removed by mechanical means and recycled or disposed of according to local and national regulations.

See Sections 8 and 13 for additional information on exposure controls and disposal.

Section 7 – Handling and Storage

Precautions for Safe Handling
Practice good housekeeping. Use adequate exhaust ventilation, dust collection and/or water mist to maintain airborne dust concentrations below permissible exposure limits (note: respirable crystalline silica dust may be in the air without a visible dust cloud). Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain and test ventilation and dust collection equipment. In cases of insufficient ventilation, wear a NIOSH approved respirator for silica dust when handling or disposing dust from this product. Avoid contact with skin and eyes. Wash or vacuum clothing that has become dusty. Avoid eating, smoking, or drinking while handling the material.

Conditions for Safe Storage, Including any Incompatibilities
Minimize dust produced during loading and unloading.

Section 8 – Exposure Controls / Personal Protection

Control Parameters – Occupational Exposure Limits

Substance		OSHA PEL TWA (mg/m^3)	NIOSH REL TWA (mg/m^3)	ACGIH TLV TWA (mg/m^3)	CA – OSHA PEL (mg/m^3)
Calcium Oxide		5	2	2	2
Particulates Not Otherwise Regulated	Total	15	15	-	10
	Respirable	5	5	-	5
Crystalline Silica	Total Quartz	30 ÷ (%SiO_2+2) (Total Quartz)	-	-	0.3
	Respirable Crystalline Silica	10 ÷ (%SiO_2+2)	0.05	0.025 (α-quartz & cristobalite)	0.1
	Cristobalite	-	0.5	0.025 (α-quartz & cristobalite)	0.05 (respirable)

Engineering Controls
Provide ventilation to maintain the ambient workplace atmosphere below the occupational exposure limit(s). Use general and local exhaust ventilation and dust collection systems as necessary to minimize exposure.

Personal Protective Equipment

Respiratory Protection	Wear a NIOSH approved particulate respirator if exposure to airborne particulates is unavoidable and where occupational exposure limits may be exceeded. If airborne exposures are anticipated to exceed applicable PELs or TLVs, a self-contained breathing apparatus or airline respirator is recommended.
Eye and Face Protection	If eye contact is possible, wear protective glasses with side shields. Avoid contact lenses.
Hand and Skin Protection	Wear gloves and protective clothing. Wash hands with soap and water after contact with material.

Section 9 – Physical & Chemical Property

Appearance	Fine tan / gray particulate	**Upper/Lower Flammability or Explosive Limits**	Not applicable
Odor	Odorless	**Vapor Pressure (pa)**	Not Applicable
Odor Threshold	Not applicable	**Vapor Density**	Not Applicable
pH (25° C)	8 – 12	**Water Solubility**	Slight
Melting Point / Freezing Point (°C)	Not applicable	**Specific Gravity or Relative Density**	2.5 – 3.0
Initial Boiling Point and Boiling Range (°C)	Not applicable	**Partition Coefficient (n-octane/water)**	Not determined
Flash Point (°C)	Not determined	**Auto Ignition Temp (°C)**	Not applicable
Evaporation Rate	Not applicable	**Decomposition Temp (°C)**	Not Determined
Flammability (solid gas)	Not combustible	**Viscosity**	Not applicable

Section 10 – Stability and Reactivity

Reactivity	The material is an inert, inorganic material primarily composed of elemental oxides.
Chemical Stability	The material is stable under normal use conditions.
Possibility of Hazardous Reactions	The material is a relatively stable, inert material; polymerization will not occur.
Conditions to Avoid	Product can become airborne in moderate winds. Dry material should be stored in silos. Materials stored out of doors should be covered or maintained in a damp condition.
Incompatible Materials	None known.

Section 11 – Toxicological Information

Endpoint	Data
Acute Oral Toxicity	LD50 > 2000mg/kg
Acute Dermal Toxicity	LD50 > 200mg/kg
Acute Inhalation Toxicity	LC50 > 50mg/kg
Skin Corrosion / Irritation	Not irritant to skin.
Eye Damage / Irritation	Positive scores for conjunctiva irritation and chemosis in 2/3 animals based on average of 24, 48 and 72 hour scores with irritation clearing within 21 days; No corneal or iritis effects observed.
Respiratory / Skin Sensitization	Not a respiratory or dermal sensitizer.
Germ Cell Mutagenicity	Not mutagenic in in vitro an in vivo assays with or without metabolic activation.

Carcinogenicity	Not available. Respirable crystalline silica has been identified as carcinogen by NTP and IARC.
Reproductive Toxicity	An animal study with a CCP has indicated some effects on male and female reproductive organs and parameters without a clear dose response while studies with other CCPs have not shown reproductive effects. Therefore, there is not enough evidence available to classify according to reproductive toxicity. No developmental toxicity has been observed in available animal studies.
STOT-SE	No specific target organ toxicity after a single exposure to the substance is expected; however, presence as a nuisance dust may result in respiratory irritation.
STOT-RE	NOAEC = 4.2mg/m^3 fly ash dust; as no effects were observed at the highest dose tested during the 180 day inhalation study it is not possible to assess the level at which toxicologically significant effects may occur. Repeated inhalation exposures to high levels of respirable crystalline silica may result in lung damage (i.e. silicosis).
Aspiration Hazard	Not applicable based on product form.

Section 12 – Ecological Information

Toxicity	No data available on final product.
Persistence and Degradability	Not relevant for inorganic materials.
Bioaccumulative Potential	No data available.
Mobility in Soil	No data available.
Results of PBT and vPvB Assessment	No data available.
Other Adverse Effects	None known.

Section 13 – Disposal Considerations

See Sections 7 and 8 above for safe handling and use, including appropriate hygienic practices. Dispose of all waste product and containers in accordance with federal, state and local regulations.

Section 14 – Transport Information

Regulatory Entity: U.S. DOT	Shipping Name	Not Regulated
	Hazard Class	Not Regulated
	ID Number	Not Regulated
	Packing Group	Not Regulated

Section 15 – Regulatory Information

Safety, Health and Environmental Regulations / Legislation Specific for the Mixture

TSCA Inventory Status	All components are listed on the TSCA Inventory.
California Proposition 65	The following substances are known to the State of California to be carcinogens and/or reproductive toxicants: - Respirable Crystalline Silica - Titanium Dioxide (airborne particles)

State Right-To-Know (RTK)

Component	CAS	MA[1,2]	NJ[3,4]	PA[5]	RI[6]
Barium Oxide- as Barium Compounds	1304-28-5; Various	No	Yes	Yes	Yes
Calcium Carbonate	1317-65-3	Yes	Yes	Yes	No
Calcium Oxide	1305-78-8	Yes	Yes	Yes	No

Calcium Sulfate	7778-18-9	Yes	Yes	Yes	No
Iron Oxide	1309-37-1	Yes	Yes	Yes	No
Magnesium Oxide	1309-48-4	No	Yes	No	No
Phosphorus Pentoxide (or Phosphorus Oxide)	1314-56-3	Yes	Yes	Yes	No
Silica-Crystalline (SiO_2), Quartz	14808-60-7	Yes	Yes	Yes	No
Sodium Oxide	131-59-3	No	Yes	No	No
Sodium Sulfate	7757-82-6	Yes	No	Yes	No
Titanium Dioxide	13463-67-7	Yes	Yes	Yes	No

[1]Massachusetts Department of Public Health, no date. [2]189th General Court of The Commonwealth of Massachusetts, no date. [3]New Jersey Department of Health and Senior Services, 2010a. [4]New Jersey Department of Health, 2010b. [5]Pennsylvania Code, 1986. [6]Rhode Island Department of Labor and Training, no date.

Section 16 – Other Information

Abbreviations and Acronyms

ACGIH	American Conference of Industrial Hygienists
ANSI	American National Standards Institute
CAA	Clean Air Act
CAS	Chemical Abstract Services
CCP	Coal Combustion Product
CFB	Circulating Fluidized Bed
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
GHS	Globally Harmonized System of Classification and Labeling
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
LC50	Concentration Resulting in the Mortality of 50% of an Animal Population
LD50	Dose Resulting in the Mortality of 50% of an Animal Population
LEL	Lower Explosive Limit
NA	Not Applicable
NOEC	No Observed Effect Concentration
NIOSH	National Institute of Occupational Safety and Health
Nox	Nitrogen Oxides
NTP	US National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
Pa	Paschal
PBT	Persistent, Toxic and Bioaccumulative
PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment
REL	Recommended Exposure Limit
RCS	Respirable Crystalline Silica
RTK	Right-to-Know
SARA	Superfund Amendments and Reauthorization Act
SCBA	Self Contained Breathing Apparatus
STEL	Short-Term Exposure Limit
STOT-RE	Specific Target Organ Toxicity - Repeated Exposure
STOT-SE	Specific Target Organ Toxicity - Single Exposure
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time-Weighted Average
UEL	Upper Explosive Limit
UVCB	Unknown or Variable Composition/Biological
U.S. DOT	United States Department of Transportation
vPvB	Very Persistent and Very Bioaccumulative

Other Hazards

Hazardous Materials Identification System (HMIS) Degree of Hazard (0 = Low, 4 = Extreme)							
Health	1*	**Flammability**	0	**Reactivity**	1	**Personal Protection**	

* Chronic Health Effects

Disclaimer

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of Fly Ash as it is commonly used, the sheet cannot anticipate and provide all the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with Fly Ash. Users should review other relevant material safety data sheets before working with Fly Ash.

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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records.