

FLY ASH / ASTM Class C

TYPICAL

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SECTION 1 – MATERIAL IDENTIFICATION AND INFORMATION

INGREDIENT	FORMULA	% ⁽¹⁾	OSHA PEL ⁽²⁾	ACGIH TLV ⁽²⁾	
Aluminosilicate Glass	Contains Al, Si, Fe, Ca, Mg, Ti	50-70	Not Listed ⁽³⁾	Not Listed ⁽³⁾	
Crystalline Silica	Total	SiO ₂	5-10	30/% SiO ₂ +2 ⁽⁴⁾	0.3
	Respirable	SiO ₂	See Note (5)	10/% SiO ₂ +2 ⁽⁴⁾	0.1
Calcium Oxide	CaO	20-30	5	2	
Iron Mineral Dusts ⁽⁶⁾	Fe ₂ O ₃ , Fe ₃ O ₄	2-5	10	5	

Notes:

- Values approximate. Material is derived from naturally occurring coal. May contain unburned carbon from coal, which may be considered a nuisance dust (see note 3).
- Airborne exposure limits in mg/m³.
- Not listed specifically by substance name. Exposure to aluminosilicate glass dust may be covered by inert or nuisance dust limits of 15 mg/m³ for total dust and 5 mg/m³ for respirable portion.
- The percentage of crystalline silica in the formula is the amount determined from airborne samples.
- Presence of respirable crystalline silica has not been established.
- Iron minerals may include magnesium, hematite, and other iron oxides.

SECTION 2 – PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point: N/A

Vapor Pressure (mmHg and Temperature): N/A

Vapor Density (Air = 1): N/A

Solubility in Water: Negligible

pH in Water: 10-12

Appearance and Odor: Grey to tan color, no odor. Average particle size is 10-20 microns.

Specific Gravity (H₂O = 1): 2.2-2.8

Melting Point: >2000° F

Evaporation Rate: N/A

Water Reactive: Not Reactive

SECTION 3 – FIRE AND EXPLOSION HAZARD DATA

Extinguisher Media: No special media required.

Flammability Limits in Air (% by Volume): Not flammable

Special Fire Fighting Procedures: No special procedures required

Unusual Fire and Explosion Hazards: None. This material is considered non-flammable and non-combustible. Use fire extinguishing agent suitable for surrounding media.

Auto Ignition Temperature: N/A

LEL: N/A **UEL:** N/A

Flash Point and Method Used: N/A

SECTION 4 – REACTIVITY HAZARD DATA

Stability: Considered to be stable. Mixing with water may produce a slight temperature increase.

Hazardous Decomposition Products: Decomposition products are unknown and not suspected.

Hazardous Polymerization: Hazardous polymerization not known to occur.

Reactivity: Material is considered inert. Avoid contact with strong acids, reducing agents, and oxidizers

Conditions to Avoid: None.

SECTION 5 – HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY:

Inhalation: Can irritate respiratory tract; long-term exposure to respirable silica above the OEL may produce silicosis in susceptible persons.

Ingestion: Possible, but very unlikely to occur in sufficient quantities.

Skin and Eye Contact: Can dry and irritate the skin; is not absorbed by skin. Can irritate eyes.

Hazardous: Is not considered hazardous.

CARCINOGEN LISTED IN:

NTP: Yes (Crystalline Silica)*

IARC Monograph: Yes (Crystalline Silica)*

OSHA: No

* Coal fly ash is not a listed carcinogen. Respirable crystalline silica from occupational sources is listed as carcinogenic to humans (Group 1) by IARC. NTP lists silica, crystalline (respirable) as a compound that may reasonably be anticipated to be a carcinogen. Presence of crystalline silica in respirable dust has not been established in this source.

HEALTH HAZARDS:

Acute: Fly ash may cause irritation to the respiratory tract, eyes, or the skin. Alkaline material; irritation may be aggravated by the addition of moisture (sweat).

Chronic: Prolonged inhalation exposure may cause pulmonary fibrosis or chronic bronchitis.

Signs and Symptoms of Exposure: Irritation of eyes, skin, and respiratory system.

Medical Conditions Generally Aggravated by Exposure: May aggravate existing pulmonary condition if high dust situation is created. Dusting conditions should not occur under normal use.

EMERGENCY FIRST AID PROCEDURES:

Eye Contact: Flush for 15 minutes with water. Seek medical care as needed to remove particles and treat scratched cornea.

Skin Contact: Wash with mild soap and water.

Inhalation: Remove to fresh air; seek medical attention if respiratory symptoms (coughing, chest tightness, shortness of breath) persist.

Ingestion: Rinse mouth out with water. Induce vomiting if significant quantities are ingested.

SECTION 6 – CONTROL AND PROTECTIVE MEASURES

Respiratory Protection: If airborne dust exposure approaches the TLV or PEL (Section 1), use half-mask or full-face air purifying respirator equipped with NIOSH or MSHA-approved high efficiency filters for protection against pneumoconiosis-producing dust. An airline respirator may be required where dust levels are extremely high. Recommend use of a NIOSH or MSHA-approved mask or respirator for nuisance dusts whenever dust is created below TLV or PEL.

Protective Gloves: Limit contact with skin. Use rubber or cloth gloves as necessary.

Eye Protection: Wear goggles or face shield as appropriate. Avoid contact lenses.

Ventilation to be Used: Keep dust levels below PEL. Use general and local exhaust ventilation and dust collection systems to keep dust levels within acceptable limits.

Other Protective Clothing and Equipment: Protective clothing may be necessary under heavy dusting conditions.

Hygienic Work Practices: Do not allow dust to get into eyes, to be inhaled, to be swallowed, or to remain on skin if irritation occurs. Minimize dusting. Practice good personal hygiene. Wash or shower after use. Launder clothes as normal.

SECTION 7 – PRECAUTIONS FOR SAFE HANDLING / LEAK PROCEDURES

Steps to be Taken If Material is Spilled or Released: Do not create unnecessary airborne dust. Avoid inhalation. Use water mist to reduce dust. Provide ventilation as appropriate. Use personal protection: respiratory, skin, and eyes.

Waste Disposal Methods: Fly ash is not classified as a RCRA hazardous waste. Material can be disposed of as inert solid in a permitted landfill. Follow applicable federal, state, and local rules.

Precautions to be Taken in Handling and Storage: Avoid dust inhalation. Use water and other available means to minimize dusting. Use personal protection. Follow good housekeeping and personal hygiene practices.

Other Precautions and/or Special Hazards: Certain conditions (e.g. work in enclosed areas) could create over-exposure to trace elements. These activities should be evaluated for compliance with applicable standards.

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