

**SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Class CI Fly Ash

**Synonyms:** Sub-bituminous Coal Fly Ash

**Supplier/Manufacturer:** Lehigh Cement  
a division of Lehigh Hanson Materials Limited  
PO Box 650, Delta  
British Columbia, Canada, V4K 3S6  
Tel: 604-946-3842

Headwaters Resources, Inc.  
Centralia Plant  
Washington, USA  
Tel: 801-984-9400

**Emergency Contact Information:** Lehigh Cement  
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PO Box 650, Delta  
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Headwaters Resources, Inc.  
Centralia Plant  
Washington, USA  
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**SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS**

| Ingredients                     | Formula                           | % <sup>(1)</sup> | OSHA PEL <sup>(2)</sup>                 | ACGIH TLV <sup>(2)</sup>  |
|---------------------------------|-----------------------------------|------------------|---|---------------------------|
| Aluminosilicate Glass           | (Contains Si, Al, Fe, Ca, Mg, Ti) | 80 - 95          | Not Listed <sup>(3)</sup>               | Not Listed <sup>(3)</sup> |
| Crystalline Silica (total)      | SiO <sub>2</sub>                  | 1 - 2            | 30/% SiO <sub>2</sub> +2 <sup>(4)</sup> | 0.3                       |
| Crystalline Silica (respirable) | SiO <sub>2</sub>                  | Note 5           | 10/% SiO <sub>2</sub> +2 <sup>(4)</sup> | 0.1                       |
| Iron Mineral                    | Fe <sub>2</sub> O <sub>3</sub>    | 2 - 5            | 10                                      | 5                         |
| Lime                            | CaO                               | 2 - 14           | 5                                       | 2                         |
| Magnesia                        | MgO                               | < 4              | 15                                      | 10                        |
| Sodium Oxide                    | Na <sub>2</sub> O                 | < 4              | Not Established                         | Not Established           |

**Notes:**

(1) Values approximate. This fly ash is the product of combustion of sub-bituminous coal with kaolin clay addition. It is a complex inorganic substance composed, primarily, of compounds of the elements silicon, aluminum, iron, and calcium, with smaller amounts of magnesium, titanium, sodium, and potassium. This fly ash has not been classified by particle size.

(2) Airborne exposure limits in mg/m<sup>3</sup>.

(3) Not listed specifically by substance name. Exposure to aluminosilicate glass dust may be covered by inert or nuisance dust limits of 15 mg/m<sup>3</sup> for total dust and 5 mg/m<sup>3</sup> for respirable portion.

(4) The percentage of crystalline silica in the formula is the amount determined from airborne samples.

(5) Presence of respirable crystalline silica has not been established.

**SECTION 3 - PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Fine Brownish-Gray Powder

**Odour:** Odourless

**Solubility In Water:** Slight

**Water Reactive:** Not Reactive

**Vapor Pressure(mmHg and Temperature):** N/AP

**Vapor Density(Air = 1):** N/AP

**Boiling Point:** N/AP

**Melting Point:** >1990 F

**Specific Gravity (H<sub>2</sub>O = 1):** 2.2 - 2.6

**Evaporation Rate:** N/AP

**SECTION 4 - FIRE-AND EXPLOSION DATA**

**Flammability Limits in Air % by Volume:** N/AP  
**Flash Point & Method Used:** N/AP  
**LEL:** N/AP  
**UEL:** N/AP  
**Auto ignition Temperature:** N/AP  
**Extinguishing Media:** Use extinguishing matter suitable for surrounding fire.  
**Special Fire-Fighting Procedures:** N/AP  
**Unusual Fire And Explosion Hazards:** None, this mineral matter is considered non-flammable and non-combustible. Use fire extinguishing agent suitable for surrounding media.

**SECTION 5 - STABILITY AND REACTIVITY**

**Stability:** Considered to be stable.  
**Conditions To Avoid:** None.  
**Hazardous Decomposition Products:** Decomposition products are unknown and not suspected.  
**Hazardous Polymerization:** Hazardous polymerization not known to occur.  
**Reactivity:** Material is considered inert.

**SECTION 6 - TOXICOLOGICAL INFORMATION**

**Hazardous:** Not considered hazardous.

**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.

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

**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.

**Carcinogen Listed In:**

NTP: Yes (Crystalline Silica)\*  
IARC Monograph: Yes (Crystalline Silica)\*  
OSHA: No

\* Coal ash is not a listed carcinogen. Respirable crystalline silica is listed as a carcinogen. Presence of crystalline silica in respirable dust has not been established.  
Crystalline silica is classified as an IARC Group 1 carcinogen, for which there is sufficient evidence in humans.

**SECTION 7 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

|  |  |
|--|--|
| <b>Respiratory Protection:</b>                               | If airborne dust exposure approaches the TLV or PEL (Section 2), 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. |
| <b>Protective Gloves:</b>                                    | Limit contact with skin. Use rubber or cloth gloves as necessary.  |
| <b>Eye Protection:</b>                                       | Wear goggles or face shield as appropriate. Avoid contact lenses.  |
| <b>Ventilation To Be Used:</b>                               | Keep dust levels below PEL. Use general and local exhaust ventilation and dust collection systems to keep dust levels within acceptable limits.  |
| <b>Other Protective Clothing And Equipment:</b>              | Industrial hygiene survey of other exposures would provide data needed to determine other precautions.   |
| <b>Hygienic Work Practices:</b>                              | 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.  |
| <b>Other Precautions And/Or Special Hazards:</b>             | 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.  |
| <b>Steps To Be Taken If Material Is Spilled Or Released:</b> | 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.  |
| <b>Waste Disposal Methods:</b>                               | Fly ash is not classified as a RCRA hazardous waste. Material can be disposed of as inert solid in a permitted landfill. Follow applicable government regulations.   |
| <b>Precautions To Be Taken In Handling And Storage:</b>      | Avoid dust inhalation. Use water and other available means to minimize dusting. Use personal protection. Follow good house keeping and personal hygiene practices.   |

**SECTION 8 - FIRST-AID MEASURES**

|  |   |
|--|---|
| <b>Emergency First Aid Procedures:</b> |   |
| 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 9 - PREPARATION INFORMATION**

Original MSDS Prepared:

Headwaters Resources, Inc.  
Centralia Plant,  
Washington, USA

December 2007

MSDS Transcribed:

Lehigh Cement  
a division of Lehigh Hanson Materials Limited  
PO Box 950, Delta  
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April 2009

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Class CI Fly Ash should only be used by knowledgeable persons.

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of Class CI Fly Ash as it is commonly used, the sheet cannot anticipate and provide all of 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 Class CI Fly Ash to produce Class CI Fly Ash products. Users should review other relevant material safety data sheets before working with this Class CI Fly Ash or working on Class CI Fly Ash products, for example, concrete.

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