

# Fly Ash

## MATERIAL SAFETY DATA SHEET (Complies with OSHA 29 CFR 1910.1200)

### SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies  
One Securities Centre  
3490 Piedmont Road, Suite 1300  
Atlanta, GA 30329

Emergency Telephone Number  
(770) 216-9580

Information Telephone Number  
(770) 216-9580

MSDS J3  
Revision: Feb-07

**QUIKRETE® Product Name**  
QUIKRETE® FLY ASH

**Code #**  
5009

|  |  |  |   |
|--|--|--|---|
| HEALTH   |  |  | 1 |
| FLAMMABILITY   |  |  | 0 |
| PHYSICAL HAZARD  |  |  | 0 |
| PERSONAL PROTECTION<br>Safety Glasses, Gloves<br>and Dust Respirator |  |  |   |

**PRODUCT USE:** SUPPLEMENTAL BINDER FOR PORTLAND CEMENT-BASED MATERIALS

### SECTION II - HAZARD IDENTIFICATION

**Route(s) of Entry:** Inhalation, Skin, Ingestion

**Acute Exposure:** Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and affect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.

**Chronic Exposure:** Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.

**Carcinogenicity:** Since blended cements are manufactured from raw materials mined from the earth (limestone, marl, sand, shale, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Under ASTM standards, Portland cement may contain 0.75 % insoluble residue. A fraction of these residues may be free crystalline silica. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

**Carcinogenicity Listings:**

|                            |                            |
|----------------------------|----------------------------|
| NTP:                       | Known carcinogen           |
| OSHA:                      | Not listed as a carcinogen |
| IARC Monographs:           | Group 1 Carcinogen         |
| California Proposition 65: | Known carcinogen           |

**NTP:** The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)

**IARC:** The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates." (1997)

**Signs and Symptoms of Exposure:** Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

**Medical Conditions Generally Aggravated by Exposure:** Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

**Chronic Exposure:** Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.

**Medical Conditions Generally Aggravated by Exposure:** Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

---

### SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

---

Fly ash composition is variable depending on coal source and power plant characteristics. Fly ash has a respirable particle size distribution.

| Component                        | Formula                        | OSHA PEL                                    | ACGIH TLV              | Typical % |
|----------------------------------|--------------------------------|---|------------------------|-----------|
| Silica: Amorphous                | SiO <sub>2</sub>               | 80mg/m <sup>3</sup> /%SiO <sub>2</sub>      | 10mg/m <sup>3</sup>    | 16.6-45.6 |
| Silica: Crystalline (Respirable) | SiO <sub>2</sub>               | 10mg/m <sup>3</sup> /(%SiO <sub>2</sub> +2) | 0.05 mg/m <sup>3</sup> | 3.4-9.4   |
| Alumina (Respirable)             | Al <sub>2</sub> O <sub>3</sub> | 5mg/m <sup>3</sup>                          | 5mg/m <sup>3</sup>     | 10-35     |
| Calcium Oxide                    | CaO                            | 5mg/m <sup>3</sup>                          | 2mg/m <sup>3</sup>     | 0.5-32    |

**CEMENT & CONCRETE PRODUCTS™**

|                               |                                |                     |                     |        |
|-------------------------------|--------------------------------|---------------------|---------------------|--------|
| Titanium Dioxide (Respirable) | TiO <sub>2</sub>               | 5mg/m <sup>3</sup>  | 5mg/m <sup>3</sup>  | 0.33-2 |
| Ferric Oxide                  | Fe <sub>2</sub> O <sub>3</sub> | 10mg/m <sup>3</sup> | 5mg/m <sup>3</sup>  | 3-24   |
| Magnesium Oxide               | MgO                            | 15mg/m <sup>3</sup> | 10mg/m <sup>3</sup> | 0.5-8  |

Materials present at less than 12% and greater than 0.5%, and not listed in OSHA or ACGIH include Potassium Oxide, Sodium Oxide, Sulfur Trioxide, and Carbon.

---

**SECTION IV – First Aid Measures**

---

**Eyes:** Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

**Skin:** Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

**Inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalations of large amounts of Portland cement require immediate medical attention.

**Ingestion:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

---

**SECTION V - FIRE AND EXPLOSION HAZARD DATA**

---

**Flammability:** Noncombustible and not explosive.

**Auto-ignition Temperature:** Not Applicable

**Flash Points:** Not Applicable

---

**SECTION VI – ACCIDENTAL RELEASE MEASURES**

---

If spilled, use dustless methods (vacuum) and place into covered container for disposal (if not contaminated or wet). Use adequate ventilation to keep exposure to airborne contaminants below the exposure limit.

---

**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE**

---

Do not allow water to contact the product until time of use. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

---

**SECTION VIII – EXPOSURE CONTROL MEASURES**

---

**Engineering Controls:** Local exhaust can be used, if necessary, to control airborne dust levels.

**Personal Protection:** The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

**Exposure Limits:** Consult local authorities for acceptable exposure limits

---

**SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS**

---

|                             |                                   |                          |                |
|-----------------------------|-----------------------------------|--------------------------|----------------|
| <b>Appearance:</b>          | Gray to gray-brown colored powder |                          |                |
| <b>Specific Gravity:</b>    | 2.3 to 2.4                        | <b>Melting Point:</b>    | >2700°F        |
| <b>Boiling Point:</b>       | >2700°F                           | <b>Vapor Pressure:</b>   | Not Applicable |
| <b>Vapor Density:</b>       | Not Applicable                    | <b>Evaporation Rate:</b> | Not Applicable |
| <b>Solubility in Water:</b> | Slight                            | <b>Odor:</b>             | Not Applicable |

---

**SECTION X - REACTIVITY DATA**

---

**Stability:** Stable.

**Incompatibility (Materials to Avoid):** None known.

**Hazardous Decomposition or By-products:** None

**Hazardous Polymerization:** Will Not Occur.

**Condition to Avoid:** Keep dry until used to preserve product utility.

---

**SECTION XI – TOXICOLOGICAL INFORMATION**

---

**Routes of Entry:** Inhalation, Ingestion

**Toxicity to Animals:**

LD50: Not Available

LC50: Not Available

**Chronic Effects on Humans:** Conditions aggravated by exposure include eye disease, skin disorders and Chronic Respiratory conditions.

**Special Remarks on Toxicity:** Not Available

---

**SECTION XII – ECOLOGICAL INFORMATION**

---

**Ecotoxicity:** Not Available

**BOD5 and COD:** Not Available

**Products of Biodegradation:** Not available

**Toxicity of the Products of Biodegradation:** Not available

**Special Remarks on the Products of Biodegradation:** Not available

---

**SECTION XIII – DISPOSAL CONSIDERATIONS**

---

**Waste Disposal Method:** The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302).

---

**SECTION XIV – TRANSPORT INFORMATION**

---

**DOT/UN Shipping Name:** Non-regulated  
**DOT Hazard Class:** Non-regulated  
**Shipping Name:** Non-regulated  
Non-Hazardous under U.S. DOT and TDG Regulations

---

**SECTION XV – OTHER REGULATORY INFORMATION**

---

**US OSHA 29CFR 1910.1200:** Considered hazardous under this regulation and should be included in the employers hazard communication program

**SARA (Title III) Sections 311 & 312:** Qualifies as a hazardous substance with delayed health effects

**SARA (Title III) Section 313:** Not subject to reporting requirements

**TSCA (May 1997):** All components are on the TSCA inventory list

**Federal Hazardous Substances Act:** Is a hazardous substance subject to statutes promulgated under the subject act

**Canadian Environmental Protection Act:** Not listed

**Canadian WHMIS Classification:** Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E- Corrosive Material) and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

---

**SECTION XVI – OTHER INFORMATION**

---

**HMIS-III:**

|                  |  |
|------------------|--|
| Health –         | 0 = No significant health risk   |
|                  | 1 = Irritation or minor reversible injury possible                     |
|                  | 2 = Temporary or minor injury possible                                 |
|                  | 3 = Major injury possible unless prompt action is taken                |
|                  | 4 = Life threatening, major or permanent damage possible               |
| Flammability-    | 0 = Material will not burn   |
|                  | 1 = Material must be preheated before ignition will occur              |
|                  | 2 = Material must be exposed to high temperatures before ignition      |
|                  | 3 = Material capable of ignition under normal temperatures             |
|                  | 4 = Flammable gases or very volatile liquids; may ignite spontaneously |
| Physical Hazard- | 0 = Material is normally stable, even under fire conditions            |
|                  | 1 = Material normally stable but may become unstable at high temps     |
|                  | 2 = Materials that are unstable and may undergo react at room temp     |
|                  | 3 = Materials that may form explosive mixtures with water              |
|                  | 4 = Materials that are readily capable of explosive water reaction     |

**Abbreviations:**

|               |  |
|---------------|--|
| <b>ACGIH</b>  | American Conference of Government Industrial Hygienists            |
| <b>CAS</b>    | Chemical Abstract Service  |
| <b>CERCLA</b> | Comprehensive Environmental Response, Compensation & Liability Act |
| <b>CFR</b>    | Code of Federal Regulations  |
| <b>CPR</b>    | Controlled Products Regulations (Canada)                           |
| <b>DOT</b>    | Department of Transportation                                       |
| <b>IARC</b>   | International Agency for Research                                  |
| <b>MSHA</b>   | Mine Safety and Health Administration                              |
| <b>NIOSH</b>  | National Institute for Occupational Safety and Health              |
| <b>NTP</b>    | National Toxicity Program  |
| <b>OSHA</b>   | Occupational Safety and Health Administration                      |
| <b>PEL</b>    | Permissible Exposure Limit   |
| <b>RCRA</b>   | Resource Conservation and Recovery Act                             |
| <b>SARA</b>   | Superfund Amendments and Reauthorization Act                       |
| <b>TLV</b>    | Threshold Limit Value  |
| <b>TWA</b>    | Time-weighted Average  |
| <b>WHMIS</b>  | Workplace Hazardous Material Information System                    |

**Revision #07-01, supersedes all previous revisions.**

**Created: 11/28/06**

**Last Updated: February 7, 2007**

---

**NOTE:** The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

---