



MATERIAL SAFETY DATA SHEET

February 03, 2010

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| SECTION 1 | CHEMICAL PRODUCT AND COMPANY IDENTIFICATION |
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Product Name: **Bottom Ash Lightweight Aggregate**

Manufacturer's Name and Address:
Salt River Materials Group
Phoenix Cement Company
8800 E. Chaparral Rd. Suite 155
Scottsdale, AZ 85250-2606

24 – Hour Emergency Telephone: CHEMTREC: 1-800-424-9300

Customer Service: (480)-850-5757 Fax (480) 850-4333

Chemical Name: Mixture

Chemical Formula: Complex mixture of inorganic minerals including metals and silica

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| SECTION 2 | COMPOSITION / INFORMATION ON INGREDIENTS |
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| <u>Chemical</u> | <u>Percent</u> |
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| Various inorganic minerals of varying composition Including amorphous silica | >88 |
| Free crystalline silica (CAS 14808-60-7) | >11 |

Note: These products are by – products of coal combustion.

1. Composition is variable depending on coal source and power plant characteristics.
2. This product is not expected to have a significant respirable particle size distribution. However, various material handling operations may produce dust with respirable particles.

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| SECTION 3 | HAZARD IDENTIFICATION |
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POTENTIAL HEALTH EFFECTS

Short – term effects (Acute effects)

Inhalation:

Dust may cause upper respiratory tract irritation, coughing, sneezing and dryness.

Oral or Swallowed:

Unlikely under normal conditions of use. Swallowing fly ash may cause abdominal discomfort.

Eyes:

Irritating to eyes causing watering and redness.

Skin:

Irritating to skin – can cause irritant / contact dermatitis from mechanical abrasion or alkaline composition.

Repeated exposure effects (Chronic or Long-term effects)

Inhalation:

Repeated inhalation of dust containing crystalline silica (quartz) can cause bronchitis, silicosis (scarring of the lung) and lung cancer. Silica may also increase the risk of scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs). Studies have shown that smoking increases the risk of bronchitis, silicosis, and lung cancer in persons exposed to crystalline silica. Scientist/health professionals recommend that all storage and work areas should be smoke free zones. Inhalation of high levels of fly ash dust may result in severe inflammation of the small airways of the lung and asthma – like symptoms.

Oral or Swallowed:

No long-term effects expected.

Eyes:

No long-term effects expected.

Skin:

No long-term effects expected, except in hypersensitive individuals who may develop an allergic dermatitis.

Carcinogenic Potential:

Portland cement is not listed as a carcinogen by NTP, OSHA, or IARC. It may however, contain trace amounts of substances listed as carcinogens by these organizations.

Crystalline Silica:

A contaminate in Portland cement, is now classified by IARC as a known human carcinogen (Group I) NIP has characterized respirable silica as “reasonably anticipated to be a carcinogen”.

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| SECTION 4 | FIRST AID MEASURES |
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Eyes:

Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. If symptoms persist get medical attention.

Skin:

Immediately flush contaminated areas with water. Remove contaminated clothing and footwear. Wash contaminated areas with plenty of soap and water. Wash clothing before reuse. Discard footwear that cannot be decontaminated. If irritation or rash persist or worsens seek medical attention.

Inhalation:

Remove to fresh air if safe to transport. Otherwise, attempt to provide fresh air by ventilation. If breathing is difficult, have trained person administer oxygen. If respiration or pulse has stopped, have a trained person administer basic life support (cardio-pulmonary resuscitation / automatic external defibrillator) and call for emergency services immediately.

Ingestion:

Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Give large quantities of water. If vomiting occurs spontaneously, keep airway clear and give more water. If symptoms persist get medical attention.

Notes to physician: No specialized procedures. Treat for clinical symptoms.

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| SECTION 5 | FIRE FIGHTING MEASURES |
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Flash Point: Not Determined

Method: Not applicable

Auto ignition Temperature: Not Determined

Flammable limits in air, by % volume

Upper: Not Determined

Lower: Not Determined

Extinguishing Media:

This product is noncombustible. Use extinguishing media appropriate for surrounding material.

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Fire Fighting Procedures:

Evacuate all unnecessary personnel. Shut down motors, pumps, electrical service and eliminate all sources of ignition. Use water spray if appropriate or appropriate extinguishing media for fires where water is not appropriate. Wear NIOSH/MSHA approved positive pressure self contained breathing apparatus and full protective clothing.

Fire and Explosion Hazard:

None Known

Sensitivity to Mechanical Impact:

Material is not sensitive.

Sensitivity to Static Discharge:

This material is not sensitive to static discharges.

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| SECTION 6 | ACCIDENTAL RELEASE MEASURES |
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Personal Precautions:

People performing the cleanup should have personal protective equipment sufficient to keep material away from skin and to prevent inhalation.

Environmental Precautions and Methods for Clean up:

Clean up material for use or disposal. Dampen with water mist to control dust (airborne dust) before removal. Do not use compressed air to move material. If loaded on trucks, wet down ash to prevent dusting during transport.

Avoid discharges to storm waters, sewer drains, and other waterways.

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| SECTION 7 | HANDLING AND STORAGE |
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Handling:

Avoid breathing dust, use with adequate ventilation. In dusty environments (greater than the PEL/TLV) wear NIOSH/MSHA approved respiratory protection and tight fitting goggles. Local exhaust can be used, if necessary, to control airborne dust levels. Avoid actions that may generate dust.

Do not get in eyes, on skin, or clothing. Wash thoroughly after handling material. When handling moist or wet product skin protection is required. Impervious boots or shoe coverings should be used if material is anticipated to contact feet.

Storage:

Store in a cool, dry, ventilated area away from ignition sources (sparks and flame).

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SECTION 8

EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Controls:

Use local exhaust when feasible. Use dust collector for situations that may generate dust.

PERSONAL PROTECTION

Respiratory:

If airborne levels are expected to exceed the PEL/TLV use a NIOSH/MSHA approved respirator.

Eye/ Face:

Use safety goggles in dusty operations.

Skin:

Normal work gloves to prevent excessive contact with skin. On a regular bases, wash work-clothes.

Other:

Recommend coveralls in high concentration conditions. Wet-wash work areas periodically to minimize dust.

| Hazardous Component (Specific Chemical Identity, common Name(s)) | OSHA PEL | ACGIH TLV | Other Limits Recommended |
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| Silica, Amorphous (SiO ₂) CAS #7631-86-9 | 80 mg/m ³ / % SiO ₂ (total dust) | 10 mg/m ³ (total dust) | NIOSH: 6 mg/m ³ |
| Silica, Crystalline (SiO ₂) CAS #148-086-97 | 30 mg/m ³ / %SiO ₂ +2(total dust) 10 mg/m ³ /(%SiO ₂ +2(resp. dust) | 0.05 mg/m ³ (resp. dust) | 0.05 mg/m ³ |

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| SECTION 9 | PHYSICAL AND CHEMICAL PROPERTIES |
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Appearance and Odor:

Light to dark gray with black particles. Texture varies from fine sand to approximately 1" size cinders with no distinctive odor.

Specific Gravity:

1.41 to 2.21

Vapor Density:

Not applicable

Vapor Pressure:

Not applicable

Evaporation Rate:

Not applicable

% Volatiles by Weight:

Not applicable

Boiling Point:

>2000 °F

Melting Point:

>1400 °F

Solubility in Water (% by weight)

0.05%

pH (in water):

9 – 11

Octano/water partition coefficient:

Not determined

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| SECTION 10 | STABILITY AND REACTIVITY |
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Chemical Stability:

Stable

Reacts with (materials to avoid/incompatibility):

None Known

Hazardous Polymerization:

Will not occur

Hazardous Decomposition Products:

None expected under normal conditions

Conditions to Avoid:

Any condition that may generate excessive dust

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| SECTION 11 | TOXICOLOGICAL INFORMATION |
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Acute or Short-term:

This product is expected to cause irritation of the eyes, skin, and mucous membranes. Product may cause sneezing and coughing if inhaled. Swallowing this product may produce gastrointestinal discomfort. Inhalation of this product may produce irritation of the upper respiratory tract and asthma-like responses in some individuals.

Chronic or Long-term:

This product contains crystalline silica, which upon long-term exposure to levels above the PEL/TLV may produce bronchitis, silicosis, a fibrotic (scarring) disease of the lungs, and potentially lung cancer. Studies have shown that smoking increases the risk of these diseases.

This product may also increase the risk of scleroderma for which the causes are unknown, but some reports link over exposure to silica in combination with other chemicals to this disease.

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| SECTION 12 | ECOLOGICAL INFORMATION |
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Toxicity:

No data available. This material is believed to be non-toxic to aquatic life.

Persistence:

No data available. This material is believed to be unlikely to persist in the environment.

Bioaccumulation:

No data available. This material is believed to be unlikely to bioaccumulate.

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| SECTION 13 | DISPOSAL CONSIDERATIONS |
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This product is not classified as a hazardous waste under RCRA or CERCLA. The material may be land filled; however, material should be covered to minimize generation of airborne dust. Ensure that all federal, state, and local regulations are followed.

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| SECTION 14 | TRANSPORT INFORMATION |
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This product is not classified as a hazardous material under U.S. DOT or Canadian TDG regulations.

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| SECTION 15 | REGULATORY INFORMATION |
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| OSHA/MSHA Hazard Communication: | This product is considered by OSHA/MSHA to be a hazardous chemical and should be included in the employer's hazard communication program. |
| CERCLA/SUPERFUND: | This product is not listed as a CERCLA hazardous substance. |
| EPCRA SARA Title III: | This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and the Reauthorization Act of 1986 and is considered a hazardous chemical and a delayed health hazard. |
| EPRCA SARA Section 313: | This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. |
| RCRA: | If discarded in its purchased form, this product would not be hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as hazardous waste. |
| TSCA: | Ash and crystalline silica are exempt from reporting under the inventory update rule. |
| California Proposition 65: | Crystalline silica (airborne particulates of respirable size) is known by the State of California to cause cancer. |
| WHMIS/DSL: | Products containing crystalline silica are classified as D2A, E and are subject to WHMIS requirements. |

| SECTION 16 | OTHER INFORMATION |
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Prepared by:
Phoenix Cement Company

Approved by:
Phoenix Cement Company

Approval Date or Revision Date:
February 03, 2010

Date of Previous MSDS:
2004

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HMIS Hazard Ratings:

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

NOTE:

Users are advised to make their own determinations as to the suitability of the information in this data sheet in relation to their particular purposes and specific circumstances. Each user should read the data sheet and consider the information in the context of how the product will be handled and used in the workplace and in conjunction with other substances or products. Individual responsibility must be taken as to proper use and handling of the product. The manufacturer makes no warranty expressed or implied regarding the accuracy of the information in this data sheet, or the results to be obtained in the use of the product.

DISCLAIMER:

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of Bottom Ash Lightweight aggregate 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.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Phoenix Cement company, except that the product shall conform to contracted specifications. The information provided herein was believed by Phoenix Cement Company, to be accurate at the time of preparation or prepared from sources believed to be reliable. It is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quality of product in respect of which damages are claimed, in no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with Gypsum products. Users should review other relevant material safety data sheets before working with this product.