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**Revision Date**  
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### **Section 1: Product Identification**

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Product Type: Dry Packaged Cement-Based Products

**Product Name:**

Akona Medium-Duty Refractory Mortar

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### **Section 2: Hazard Identification**

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The most immediate and likely hazards are burns from dust in the eye. When the product is mixed with water, it will form an alkaline solution, which can cause skin irritation. Dust from the product is irritating to breathe. Prolonged overexposure to dust from the product is harmful to breathe, because it will contain crystalline silica.



**Applicable hazard statement based on cement content**

Danger.

H318: Causes serious eye damage

H315: Causes skin irritation



**Applicable hazard statement based on crystalline silica content**

Danger.

H350: May cause cancer from inhaling dust.

H372: Causes damage to respiratory system (silicosis) through prolonged or repeated exposure to inhaled dust.

This product has been evaluated according to GHS and 29CFR1910.1200, Appendix A. It is categorized as a Health Hazard Carcinogen Category 1A, because it contains crystalline silica (quartz). It is categorized as a Health Hazard (serious eye damage/eye irritation - Category 1 and skin irritation – Category 2) because it contains Portland cement.

**Applicable Precautionary Statements:**

Based on crystalline silica content.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe dusts.

P270: Do not eat, drink or smoke when using this product.

P280: Wear eye protection.

P308+313/314. If exposed or concerns, or if you feel unwell: Get medical advice.

P501: Dispose of contents in accord with local regulations.



Based on cement content:

P280: Wear skin and eye protection (water resistant protective gloves. Goggles recommended to prevent any dust in eyes).

P264: Wash any exposed skin thoroughly after handling material

P362+P364: Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352: IF ON SKIN: wash with plenty of water.

P332+P313: If skin irritation occurs, get medical attention.

P310: Immediately call a doctor if any eye irritation or discomfort develops

HMIS® Rating: Health: 1\* Fire: 0 Reactivity: 0

*HMIS® is a registered trademark of the National Paint and Coatings Association*

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### Section 3: Hazardous Ingredients/Composition

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Ingredient	Typical Percentage	CAS #
Portland Cement .....	20-40%	65997-15-1
Calcium aluminate cement .....	0-55%	65997-16-2
Silica Sand (as quartz) .....	60-75%	14808-60-7
Lime .....	0-7%	1305-78-8
Calcium carbonate .....	0-4%	471-34-1
Polymeric binder .....	0-4%	*

\*Specific chemical identities and concentrations withheld as trade secret. They are available upon request to health professionals, employees and their designated representatives in accord with 29CFR1910.1200(i).

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### Section 4: First Aid Measures

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**Inhalation:**

If irritation develops, get to fresh air.

**Eye contact:**

Immediately rinse eyes: hold eyelids apart and flush eyes with plenty of water. At least fifteen minutes of flushing is recommended. Get prompt medical attention for any discomfort or irritation.

**Skin Contact:**

Promptly wash off with plenty of soap and water. Get medical attention for any burns or persistent rashes.

**Ingestion:**

Check with the Poison Control Center or a doctor. Do not induce vomiting unless directed to do so by medical personnel.



**Symptoms of overexposure:**

Inhalation: Breathing the dust may cause coughing, wheezing, sore throat. Repeated exposure to the dust can cause a runny nose, chronic coughing and impaired lung function. Long term exposure to respirable crystalline silica in the dust can cause silicosis (lung scarring) and lung cancer.

Eye contact: eye irritation from the mechanical effect. Eye irritation, burning from cement. Cement reacts with moisture to form a very alkaline solution, which can severely irritate or burn eyes.

Skin Contact: Can cause skin irritation and can dry the skin. Because cement reacts with moisture exothermically to form an alkaline solution, contact with damp skin can cause irritation or burns, which may not be felt immediately. Severe burns of the feet have resulted from cement getting into footwear. Some people may develop an allergic dermatitis (cement itch) from chromate contaminants in Portland cement.

**Note to physician:** Treat according to symptoms. No known specific antidote.

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**Section 5: Fire Fighting Measures**

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**Fire extinguishing media:** Appropriate for surrounding materials. Product is not flammable.

**Special fire fighting procedures:** none

**Unusual fire and explosion hazards:** None

**Hazardous combustion products:** None expected.

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**Section 6: Accidental Release Measures**

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Contain and clean up. Avoid creating dust. Do not wash down drains or allow product to enter sewers – product will harden upon contact with water.

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**Section 7: Handling and Storage**

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Avoid breathing dust.

Wash hands after use.

Do not eat, drink, or use tobacco products when handling any chemical products.

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**Section 8: Exposure Controls/Personal Protection**

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**Occupational Exposure Limits:**

	<b>OSHA PEL</b>	<b>OSHA 1989 PEL*</b>	<b>ACGIH TLV</b>	<b>NIOSH REL</b>
Crystalline silica (quartz)	<u>10 mg/m<sup>3</sup></u> %silica	0.1 mg/m <sup>3</sup> (respirable)	0.025 mg/m <sup>3</sup> (respirable)	0.05 mg/m <sup>3</sup>



Portland cement	10 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable)	10 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable)	1 mg/m <sup>3</sup> (respirable)	10 mg/m <sup>3</sup>
Calcium aluminate cement	Use exposure limits for Portland cement.			
Lime (calcium oxide)	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Calcium carbonate	15 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable)	15 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable)	None (TLV withdrawn in 2007)	10 mg/m <sup>3</sup> (total) 5 mg/m <sup>3</sup> (respirable)
Polymeric binder	None established			

\*For states that adopted the 1989 PEL revisions (Minnesota, Oregon, Washington, California)

**Engineering Controls:**

Avoid creating dust.

Local exhaust ventilation is usually not required.

If cutting or grinding material after it has hardened, water can be used as a dust suppressant.

**Personal protective equipment**

**Respiratory protection:** Usually not required when working with virgin product, but take measures to minimize dust exposure. May be required, depending on work done, for grinding or cutting material after it has hardened.

For protection against irritation from dust or up to ten times the recommended exposure limits, use a NIOSH-approved N-95 filtering facepiece or a half mask respirator equipped with N-95 filters. A more protective respirator (e.g., P100 filters or full face respirator) may be substituted.

**Skin protection:** Avoid any skin contact, particularly when skin may be wet from sweat. Wear any water-impermeable gloves such as PVC gloves, particularly for prolonged contact. Wear waterproof boots, high enough to prevent any cement from getting into them. Promptly wash off of skin and remove contaminated clothing.

**Eye protection:** Safety glasses with side shields. If used in dusty or windy conditions, goggles are recommended.



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### Section 9: Physical and Chemical Properties

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**Appearance and odor:** grey or grey-brown powder. May contain some coarse aggregate. No significant odor.

**Flash point:** noncombustible.

**Flammable limits:** N/A

**Boiling Point:** >2700°F

**Melting point:** >2700°F

**Specific Gravity:** 2.6 to 3.15

**Solubility in water:** slight

**pH:** 11-13 (cements in water)

**Evaporation Rate:** not applicable. Product does not evaporate.

**Evaporation rate (butyl acetate = 1):** not applicable

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### Section 10: Stability and Reactivity

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**Stability:** stable

**Conditions to avoid:** none known.

**Incompatibility:** will react with water, hydrating product, hardening it, and giving off heat. Avoid strong oxidizers, strong acids

**Hazardous polymerization:** will not occur

**Hazardous decomposition products:** Silica will dissolve in hydrofluoric acid and produce a corrosive gas - silicon tetrafluoride.

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### Section 11: Toxicological Information

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Not considered acutely toxic.

Can damage the eyes, skin and respiratory system.

Portland and calcium aluminate cements are caustic and abrasive to the skin. In contact with water or moisture, they can form alkaline hydroxides, which can cause burns that may not be felt immediately.

Portland cement may contain trace amounts of hexavalent chromium. Hexavalent chromium can cause allergic contact dermatitis.

Respirable crystalline silica is categorized as a Health Hazard Carcinogen Category 1A (known to have carcinogenic potential for humans) and a Health Hazard Specific Target Organ Toxicity – Repeated Exposure Category 1. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.



Crystalline silica is listed as carcinogenic according to IARC. ACGIH classified crystalline silica as a suspected human carcinogen.

Portland and calcium aluminate cements are categorized as Health Hazard Serious Eye Damage/Eye Irritation Category 1 and Serious Skin Category 2, because they form a strong alkaline solution in water.

Polymeric binder: toxicological testing has been conducted with similar products

Acute toxicity (oral, rat): LD<sub>50</sub> >2000 mg/kg

Irritation (rabbit): mildly irritating to skin. Not irritating to eyes

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### **Section 12: Ecological Information**

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Product as a whole has not been tested but is expected to have low acute toxicity.

**Ecotoxicity:** .

Not considered hazardous to the aquatic environment or to the ozone layer.

**Persistence and degradability:** Not likely to biodegrade

**Mobility in soil:** no information available.

**Bioaccumulation:** based on ingredients, not likely to bioaccumulate

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### **Section 13: Disposal Considerations**

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Do not sewer or dump on the ground

As provided, not a RCRA-regulated waste.

Dispose of in accordance with federal, state, and local regulations.

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### **Section 14: Transportation**

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Not a DOT-regulated hazardous material. Not classified as dangerous goods for DOT, IATA, IMDG, TDG

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### **Section 15: Regulatory Information**

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This product contains 0.1% or more of crystalline silica, regulated under California Proposition 65 as a chemical known to the state of California to cause cancer or reproductive effects. It is on the New Jersey Right to Know Hazardous Substance List.

This product does not contain any

- chemicals regulated under:  
CERCLA  
SARA 302 EHS  
SARA 311/312



SARA 313

- Hazardous Air Pollutants

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**Section 16: Other Information**

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Additional information on the products is available at: [www.tccmaterials.com](http://www.tccmaterials.com)

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. Before using any product, read its label and safety data sheet.