

# MATERIAL SAFETY DATA SHEET

## SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Raven 700  
**GENERAL USE:** To patch concrete or masonry structures and repair inverts.



**PRODUCT DESCRIPTION:** A blend of calcium aluminate cement, aggregate and additives to enhance performance and workability.

COMPANY NAME Raven Lining Systems	DATE PREPARED: October 7, 2010	Page 1 of 4
ADDRESS 13105 E. 61 <sup>st</sup> Street, Suite A	COMPANY PHONE NUMBER FOR INFORMATION (918) 615-0020	
Broken Arrow, OK 74012	24 HOUR EMERGENCY PHONE USA CHEMTREC (800) 424-9300	
	24 HOUR EMERGENCY PHONE INTERNATIONAL CHEMTREC (703) 527-3887	

## SECTION 2 – HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	CAS #	Weight %	OSHA PEL		ACGIH TLV
			Total Dust	Respirable Dust	TWA
Calcium Aluminate Cement	65997-16-2	proprietary	15 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Fly Ash	68131-74-8	proprietary	15 mg/m <sup>3</sup>	5mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Crystalline Silica (Quartz)	14808-60-7	<5%	-	0.10 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>
Perlite	93763-70-3	proprietary	15 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Glass Fiber	65997-17-3	proprietary	15 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Proprietary Formula Enhancing Additives	varies	<1%	15 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

Refer to OSHA Table Z-3 or ACGIH Appendix E for determining the PEL or TLV for mixtures containing crystalline silica above 1.0%.

## SECTION 3 – HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Calcium aluminate cement may irritate, damage or burn the eyes or skin when in contact with the moisture in the eyes or on the skin. Inhalation may also cause irritation of the mucous membranes of the nose, throat or upper respiratory system or may aggravate certain lung diseases.

### POTENTIAL HEALTH EFFECTS

**INHALATION:** Calcium aluminate cement may cause irritation of the mucous membranes of the nose, throat or upper respiratory system. This product also contains low levels of naturally occurring crystalline silica (quartz) which is a known cause of silicosis, a progressive lung disease that may be fatal, and may cause cancer by inhalation in industrial applications.

**SKIN:** May cause drying of the skin with mild irritation. Prolonged exposure to calcium aluminate cement can cause severe skin damage in the form of chemical (caustic) burns.

**EYES:** Exposure to airborne dust containing calcium aluminate cement may cause immediate or delayed irritation or inflammation. Contact with large amounts may cause chemical burns to the eye.

**INGESTION:** Ingestion of calcium aluminate cement may cause internal discomfort or ill effects if large amounts are swallowed.

**HEALTH HAZARDS (ACUTE AND CHRONIC):** Acute hazards – exposure to calcium aluminate cement may cause chemical (caustic) burns. Chronic – crystalline silica (quartz) is a known cause of silicosis and is considered carcinogenic by inhalation by NTP and IARC.

**CARCINOGENICITY:** This product contains low levels of crystalline silica (quartz) that was rated a Group 1 carcinogen by inhalation by the International Agency for Research on Cancer (IARC) and “reasonably anticipated to be a carcinogen” by the National Toxicology Program (NTP).

**MEDICAL CONDITIONS GENERALLY AGGREGATED BY EXPOSURE:** Upper respiratory conditions such as asthma or emphysema may be aggravated by inhalation of dust generated by the product.

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### SECTION 4 – FIRST AID MEASURES

**INHALATION:** Remove to fresh air. If breathing difficulty occurs, administer oxygen. Seek medical help if coughing and other medical symptoms do not subside.

**SKIN:** Wash skin with soap and water. Applying moisture renewing lotions to dry, irritated skin. Seek medical attention in all cases of severe irritation or burns.

**EYES:** Immediately flush eyes with copious quantities of water. Continue flushing for 15 minutes including under the lids to remove all particles. Call a physician immediately.

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

### SECTION 5 – FIRE FIGHTING MEASURES

FLASH POINT (METHOD USED)	N/A	FLAMMABLE LIMITS	LEL: N/A	UEL: N/A
		AUTOIGNITION TEMPERATURE: N/A		

**GENERAL HAZARDS:** Is not hazardous during fire fighting procedures; however the product contains less than 1% organic substances that may produce carbon dioxide or carbon monoxide depending on oxygen levels.

**EXTINGUISHING MEDIA:** Product is non-combustible but carbon dioxide, water, dry chemical, or chemical foam may be used should smoldering occur.

**FIRE FIGHTING PROCEDURES:** No special procedures required.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** No unusual hazards.

**HAZARDOUS COMBUSTION PRODUCTS:** Small quantities of smoke, fumes, and oxides of carbon may be released.

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Although this material is not considered hazardous under RCRA (40 CFR Part 261), do not discharge waste into lakes, ponds, streams, or waterways. Avoid creating dust. Use adequate ventilation and dust collection.

### SECTION 7 – HANDLING AND STORAGE

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Avoid creating dust. Repair or properly dispose of broken bags. Store in a dry place since water will react with the cement constituent.

### SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

#### ENGINEERING CONTROLS

Use local exhaust to reduce dust concentrations to levels below the OSHA PEL or the ACGIH TLV. Refer to ACGIH publication "Industrial Ventilation" or similar publications for design of ventilation systems.

#### PERSONAL PROTECTION

**RESPIRATORY PROTECTION:** If dust levels exceed the OSHA PEL or ACGIH TLV, respiratory protection such as dust masks are recommended. Dust masks certified to standard 42 CFR Part 84, series N95 are considered adequate.

**PROTECTIVE GLOVES:** Wear impervious, alkali resistant gloves, boots and protective clothing to prevent contact with skin. If contact occurs, wash with soap and water. Moisturizing lotions may be applied prior to working with the product to aid in reducing moisture loss of skin.

**EYE PROTECTION:** Wear tight fitting safety goggles to prevent contact with the eyes. Contact lenses should not be worn when handling products containing cement.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** None required.

**WORK/HYGIENIC PRACTICES:** Avoid creating dust. Avoid contact with skin and eyes.

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**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

VAPOR PRESSURE (mm Hg) N/A	VAPOR DENSITY (AIR=1) N/A
SPECIFIC GRAVITY (WATER=1) mixture - varies	EVAPORATION RATE (WATER=1) N/A
SOLUBILITY IN WATER <1%	FREEZING POINT N/A
pH 9-11 (10% slurry in water)	APPEARANCE AND ODOR Odorless gray to brown powder
BOILING POINT N/A	PHYSICAL STATE Solid (Powder)
VISCOSITY N/A	VOLATILE ORGANIC COMPOUNDS N/A

**SECTION 10 – STABILITY AND REACTIVITY**

STABILITY: STABLE: X UNSTABLE:	CONDITIONS TO AVOID: Unintentional contact with water. Contact with water produces caustic calcium hydroxide.
INCOMPATIBILITY (MATERIALS TO AVOID): Wet cement is alkaline and is incompatible with acids, ammonium salts, aluminum metal. Silica found in cement, flyash, and perlite is incompatible with hydrofluoric acid.	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: None.	
HAZARDOUS POLYMERIZATION: MAY OCCUR: WILL NOT OCCUR: X	

**SECTION 11 – TOXICOLOGICAL INFORMATION**

HAZARDOUS INGREDIENT	CAS #	LD50 (Specify species & route)	LC50 (Specify species)
Calcium Aluminate Cement	65997-16-2	Not determined	Not determined
Fly Ash	68131-74-8	Not determined	Not determined
Crystalline Silica (Quartz)	14808-60-7	Not determined	Not determined
Perlite	93763-70-3	Not determined	Not determined
Glass Fibers	65997-17-3	Not determined	Not determined
Proprietary Formula Enhancing Additives	varies	Not determined	Not determined

**SECTION 12 – ECOLOGICAL INFORMATION**

No data available on the adverse effects of this material on the environment.

**SECTION 13 – DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHOD: Not considered a hazardous waste under RCRA 40 CFR Part 261. Dispose of in accordance with Local, State and Federal Regulations.

**SECTION 14 – TRANSPORT INFORMATION**

Not considered to be hazardous under U.S. Department of Transportation (DOT) regulations

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## SECTION 15 – REGULATORY INFORMATION

### OSHA Hazard Communication Standard

The components of this product are considered hazardous chemicals under this regulation and should be included in an employer's Hazard Communication Program.

### CERCLA/Superfund 40 CFR 117 and 302

Not listed

### SARA Title III Sections 311 and 312

Calcium aluminate cement and crystalline silica qualify as hazardous substances with delayed health effects.

### SARA Title III Section 313

Not subject to reporting requirements under Section 313

### TSCA Inventory

Most of the components of this product are listed in the TSCA Inventory

### Federal Hazardous Substances Act

Calcium aluminate cement is a hazardous substance subject to statutes promulgated under the subject act.

### California Proposition 65

This product contains crystalline silica, a substance known to the state of California to cause cancer. This product may also contain trace amounts of heavy metals or organic compounds known to the State of California to cause cancer, birth defects, or other reproductive toxins.

## SECTION 16 – OTHER INFORMATION

### HMIS HAZARD RATINGS:

HEALTH - 1

FLAMMABILITY - 0

PHYSICAL HAZARD - 0

REACTIVITY - 0

PERSONAL PROTECTIVE EQUIPMENT - E

### Legend

0 = Insignificant

1 = Slight

2 = Moderate

3 = High

4 = Extreme

\* = Chronic Health Hazard

(E = SAFETY GLASSES, GLOVES, DUST RESPIRATOR)

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