



PROTECT WITH
CONFIDENCE

1. Product and Company Identification

Product Name: Raven 705CA

Raven Lining Systems
13105 East 61st Street, Suite A
Broken Arrow, OK 74012

www.ravenlining.com

Company Phone: (918) 615-0020
Company Toll Free: (800) 324-2810

CHEMTREC 24 hour Emergency USA: (800) 424-9300
CHEMTREC 24 hour International: (703) 527-3887

Product Use: Reinforced cementitious product for concrete rehabilitation and repair
Not recommended for: Non Professional Use

2. Hazards Identification

Signal Word: Danger



GHS Ratings:

Oral Toxicity	Acute Tox. 4	Oral>300+<=2000mg/kg
Skin corrosive	1A	Destruction of dermal tissue: Exposure < 3 min. Observation < 1 hour, visible necrosis in at least one animal.
Eye corrosive	1	Serious eye damage: Irreversible damage 21 days after exposure, Draize score: Corneal opacity >= 3, Iritis > 1.5
Skin sensitizer	1	Skin sensitizer.
Carcinogen	1A	Known Human Carcinogen Based on human evidence.
Organ toxin single exposure	3	Transient target organ effects- Narcotic effects- Respiratory tract irritation.
Organ toxin repeated exposure	2	Presumed to be harmful to human health- Animal studies with significant toxic effects relevant to humans at generally moderate exposure (guidance)- Human evidence in exceptional cases.

GHS Hazards

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

GHS Precautions

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P310	Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P314	Get Medical advice/attention if you feel unwell.
P321	Specific treatment (see Section 4 of the SDS).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P405	Store locked up.
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P501	Dispose of contents/container according to Section 13 of the SDS.

Acute Toxicity: Acute silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

Medical Conditions Aggravated by Exposure: The condition of individuals with lung disease (e.g. bronchitis, emphysema, chronic obstructive pulmonary disease, etc...) can be aggravated by exposure.

Chronic Effects

Silicosis: Chronic or Ordinary Silicosis is the most common form of silicosis, and can occur after many years of inhalation of low levels of airborne respirable crystalline silica dust. Silicosis is a progressive, disabling and sometimes fatal lung disease. It is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions greater than 1 centimeter in diameter. There may be no symptoms associated with complicated silicosis or PMF, but if present they are shortness of breath, wheezing, cough and sputum productions. Complicated silicosis or PMF may be associated with decreased lung function and may lead to death. Accelerated silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relative short period; the lung lesions can appear within 5 years of initial exposure. Accelerated silicosis is similar to chronic silicosis, except that lung lesions appear earlier and progression is more rapid.

3. Composition / Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Crystalline Silica, Quartz	14808-60-7	< 50%
Calcium Aluminate Cement	65997-16-2	< 40%
Fly Ash	68131-74-8	< 30%
Fibrous Glass	65997-17-3	< 5%
Concrete Admixtures		< 5%

4. First Aid Measures

Inhalation: Remove to fresh air if effects occur. Consult a physician.

Eye Contact: Flush with large quantities of water for at least 15 minutes. Consult a physician.

Skin Contact: Wash thoroughly with soap and flowing water.

Ingestion: No adverse effects are believed to occur from swallowing a small amount. Seek medical attention if symptoms develop or if a large amount is swallowed.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Flash Point: Not Applicable

Flammable Properties: Product is not considered flammable or combustible.

Suitable Extinguishing Media: Carbon dioxide, dry chemical, water fog or fine spray may be used to extinguish packaging.

Unusual Fire & Explosion Hazards: None known.

Products of Combustion: Thermal decomposition of packaging in the presence of air may yield carbon monoxide, carbon dioxide, and other unidentified toxic and/or irritating compounds.

Fire Fighting: Stay upwind and keep people away. Isolate fire and deny unnecessary entry. Keep out of low areas where gases (fumes) can accumulate. Water may be applied in large quantities as a fine spray. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Fire water run-off is not expected to cause environmental damage. Review section 6 and section 12 of this SDS.

Protection of Firefighters: Wear positive pressure self-contained breathing apparatus (SCBA) and approved standard protective clothing (helmet, coat, trousers, boots and gloves) when fighting all indoor fires and any significant outdoor fires.

6. Accidental Release Measures

Personal Precautions: Put on appropriate personal protective equipment (see section 8).

Environmental Precautions: Prevent spilled material from contact with soil, drains and sewers.

Methods for Containment: Not applicable as material is a solid powder.

Methods for Clean-up: Use non-sparking tools to sweep up and containerize for reclamation or place into labeled waste container for disposal.

7. Handling and Storage

Handling: Wear appropriate personal protective equipment (see section 8). Avoid contact with skin, eyes or clothing. Do not breathe dust as respirable crystalline silica can cause silicosis, a fibrosis (scarring) of the lungs. Do not ingest. Avoid prolonged or repeated contact with skin. May cause mechanical skin irritation. Wash thoroughly with soap and water after handling. Do not handle or store near flame, heat or strong oxidants. Keep away from sources of ignition and hot metal surfaces.

Storage: Store original unopened containers in a sheltered area between 60°F and 80°F (15°C and 27°C) at atmospheric pressure. Do not store in direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Crystalline Silica, Quartz 14808-60-7	Not Established	0.025 mg/m ³ TWA (respirable fraction)	NIOSH: 0.05 mg/m ³ TWA (respirable dust)
Calcium Aluminate Cement 65997-16-2	Not Established	Not Established	Not Established
Fly Ash 68131-74-8	Not Established	Not Established	Not Established
Fibrous Glass 65997-17-3	Not Established	Not Established	Not Established
Concrete Admixtures	Not Established	Not Established	Not Established

Engineering Controls: General mechanical ventilation is sufficient for most conditions. Control airborne levels below the exposure guidelines, if established.

Local exhaust ventilation may be necessary for some operations.

General Hygiene Considerations: Wash thoroughly after handling and before eating, drinking or smoking.

Eye/face Protection: Use dust tight eye goggles.

Skin Protection: Protective gloves are not required, but may be used to prevent skin dryness or irritation. If potential for skin contact is present, wear long-sleeved, body covering clothing and rubber boots.

Respiratory Protection: If exposure may or does exceed occupational exposure limits, or if respiratory irritation is experienced, use a properly fitted MSHA/NIOSH approved respirator fitted with an appropriate particle filter. Do not exceed the working limits of the respirator.

Contaminated Gear: Remove contaminated clothing and shoes while washing. Wash clothing before reuse.

9. Physical and Chemical Properties

Appearance Standard color is gray	Odor Mild
Odor Threshold No data found	Physical State Solid Powder
pH No data found	Melting/Freezing Point No data found
Boiling Point >1000°C	Boiling Range No data found
Flash Point Not Applicable	Evaporation Rate No data found
Flammability (solid, gas) No data found	LEL/UEL No data found
Vapor Pressure No data found	Vapor Density No data found
Specific Gravity >2.0	Solubility in Water No data found
Partition Coefficient No data found (n-octanol/water)	Autoignition Temperature No data found
Decomposition Temperature No data found	Viscosity No data found
Lbs VOC/Gallon Less Water 0.0	

10. Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions (see Section 7).

Conditions to Avoid: Avoid creating dust.

Incompatible Materials: Crystalline silica (quartz) is incompatible with hydrofluoric acid, fluorine, chlorine trifluoride or oxygen difluoride.

Products of Combustion: Thermal decomposition of packaging in the presence of air may yield carbon monoxide, carbon dioxide, and other unidentified toxic and/or irritating compounds.

Hazardous polymerization will not occur.

11. Toxicological Information

Mixture Toxicity

Oral Toxicity LD50: 1,000mg/kg

Component Toxicity

Likely Routes of Exposure:

No data found

Target Organs

May cause damage to the following organs:

Eyes Respiratory System

Effects of Overexposure

Carcinogenicity: This product contains crystalline silica (quartz), a substance that has been classified as carcinogenic to humans when inhaled. In this product, it is available as a dust. Under normal use conditions it would be considered a

hazard.

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
14808-60-7	Crystalline Silica, Quartz	< 50%	Crystalline Silica, Quartz: NIOSH: potential occupational carcinogen IARC: Human carcinogen OSHA: listed

12. Ecological Information

Component Ecotoxicity

13. Disposal Considerations

Waste Disposal Methods: Product is not considered to be a RCRA hazardous waste as referenced in 40CFR 261.24 or 261.3. Dispose of in accordance with federal, state and local regulations. The preferred method for disposal of uncontaminated product is by recycling or reclaiming.

14. Transport Information

<u>Agency</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT	Not Regulated			
ICAO/IATA	Not Regulated			
IMDG	Not Regulated			
TDG	Not Regulated			

15. Regulatory Information

USA Federal: This SDS has been prepared in compliance with the Occupational Safety and Health Act (OSHA) Hazard Communication Standard (29 CFR 1910.1200). This product is considered to be a hazardous chemical under that standard. The specific chemical identity and/or exact percentage of any proprietary ingredient(s) may be withheld as a trade secret, pursuant to the standard.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): To the best of our knowledge, this product contains the following chemicals which are known to the State of California to cause cancer or reproductive toxicity at levels which require warning under this statute:

14808-60-7 Crystalline Silica, Quartz < 50 %

Massachusetts Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

14808-60-7 Crystalline Silica, Quartz < 50 %

New Jersey Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

14808-60-7 Crystalline Silica, Quartz < 50 %

Pennsylvania Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

14808-60-7 Crystalline Silica, Quartz < 50 %

USA Resource Conservation and Recovery Act (40 CFR 261): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 302 Extremely Hazardous Substances Reportable Quantities (RQs): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 302 Extremely Hazardous Substances Threshold Planning Quantities (TPQs): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Toxic Substances Control Act (TSCA) - section 12(b): To the best of our knowledge, this product contains the following chemicals above the de minimus concentration(s) which requires notification to the Environmental Protection Agency (EPA) per 40 CFR 707, subpart D, if any person intends to export:

- None

<u>Country</u>	<u>Regulation</u>	<u>All Components Listed</u>
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Canada Domestic Substance List	Yes
Canada	Canada Non-Domestic Substances List (NDSL)	No
China	China Inventory of Existing Chemical Substances	No
EU	EU REACH List of Registered Intermediates	No
EU	EU REACH List of Pre-Registered Substances	No
EU	EU REACH List of Registered Substances	No
Japan	Japanese Existing and New Chemical Substances List	No
South Korea	South Korea Existing Chemicals Inventory	No
Philippines	Philippines Inventory of Chemicals and Chemical	No
USA	USA TSCA Inventory list section 8(b)	Yes

- None

16. Other Information

Legend

ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
ADR/RID	European Agreement for transport of dangerous goods by road (ADR) and by rail (RID)
CAS No.	Chemical Abstract Service Registry Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, AKA "Superfund"
DOT	Department of Transportation (USA)
HCS	OSHA Hazard Communication Standard (29 CFR 1910.1200)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
IMDG	International Maritime Dangerous Goods
MSHA	Mine Safety and Health Administration
N.A.	Not Applicable
N.D.	Not Determined
N.E.	Not Established
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (USA)

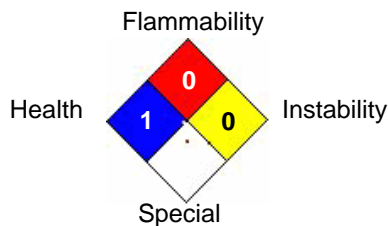
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986 (40 CFR)
STEL	Short Term Exposure Limit (15 minute Time Weighted Average)
TDG	Canada Transport of Dangerous Goods regulations
TLV	Threshold Limit Value
TWA	Time Weighted Average
WHMIS	Canada Workplace Hazardous Materials Information System

Hazardous Material Information System (HMIS)

HEALTH	*	1
FLAMMABILITY		0
PHYSICAL HAZARD		0
PERSONAL PROTECTION		

HMIS & NFPA Hazard Rating Legend
 * = Chronic Health Hazard
 0 = INSIGNIFICANT
 1 = SLIGHT
 2 = MODERATE
 3 = HIGH

National Fire Protection Association (NFPA)



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Reviewer Revision

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