

Material Safety Data Sheet

HMIS

Health Hazard	1*
Fire Hazard	0
Reactivity	0

*Indicates a chronic health hazard.

1 Product & Company Identification

Manufacturer's Name:	Alsey Refractories Company	Product Name:	Hi-Cast 45 Refractory Castable
	Highway 106	Product Type:	High Duty Refractory Castable
	Alsey, IL 62610		
	Phone: 314-963-7900		

2 Hazards Identification

Potential Health Effects	Acute	Chronic
Eyes	Dust or grains can cause mechanical irritation.	Not known.
Skin	Dry material can cause abrasions; wet material could cause dermatitis on sensitive types of skin.	Not known.
Inhalation	Dust, if present, may cause upper respiratory irritation.	Repeated inhalation of dusts containing crystalline silica over time can cause progressive fibrotic lung disease (silicosis)* and increase the risks of developing respiratory cancer.
Ingestion	Not considered a likely route of exposure under normal product use conditions. May cause gastrointestinal irritation if swallowed. Product is relatively non-toxic.	Unknown.

*According to Group 1 of the International Agency for Research on Cancer (IARC), there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources.

Medical Conditions Aggravated by Exposure: Pre-existing disease or other conditions of the lungs, skin, eyes and mucous membranes. Persons that develop silicosis are more likely to develop tuberculosis. Smoking and exposure to crystalline silica increases the risks of lung damage. Chronic obstructive pulmonary disease and autoimmune related diseases have been linked to crystalline silica exposure.

3 Composition/Information on Hazardous Ingredients

Name	CAS-No	Weight %
Crystalline Silica (Total)		35-60
Cristobalite	14464-46-1	
Quartz	14808-60-7	
Titanium Dioxide	13463-67-7	1-8
Aluminum Oxide	1344-28-1	40-65
Calcium Aluminate Cement	65997-16-2	5-20

4 First Aid Measures

Eye Contact:	Flush with clean water for 15 minutes. Consult a physician if irritation persists.
Skin Contact:	Wash with mild soap and water. If irritation continues, seek medical attention.
Ingestion:	As shipped, product is not likely to be ingested; however, do not induce vomiting unless instructed by a physician. Product is non-toxic as supplied, but its abrasive nature could damage internal organs. Seek medical attention.
Inhalation:	Remove to fresh air. Seek medical attention if coughing or other symptoms persist.

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5 Fire Fighting Measures

Flammable Properties: Non flammable.
 Extinguishing Media: Not combustible. As appropriate for surrounding fire.
 Precautions for Firefighters: Firefighters should wear a NIOSH approved full-face, self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout or bunker gear.
 Unusual Fire & Explosion Hazards: None Known

6 Accidental Release Measures

Personal Precautions: Avoid breathing dust.
 Small/Large Spill: Scoop spilled material into a container for reclamation or disposal.
 Methods for Clean Up: All personnel engaged in cleanup should adhere to the instruction outlined in Section 8 for personal protection.

7 Handling and Storage

Handling: Avoid direct contact with product or dusts from product by following Section 8 (Personal Protection).
 Storage: Store in a dry area away from extreme heat

8 Exposure Controls and Personal Protection

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL
Crystalline Silica (Total)		
Cristobalite	0.025 R mg/m ³	½ the value calculated from the respirable dust formulae for Quartz
Quartz	0.025 R mg/m ³	30mg/m ³ ÷% SiO ₂ +2 (total dust) or 10mg/m ³ ÷% SiO ₂ +2 (respirable dust)
Titanium Dioxide	10 mg/m ³	15 mg/m ³ (total dust)
Aluminum Oxide	Not established	15mg/m ³ (total dust) or 5mg/m ³ (respirable fraction)
Calcium Aluminate Cement	Not established	Not established

Engineering Measures: Use local exhaust and general ventilation as necessary to control air contaminants at or below acceptable exposure guidelines.
 Eye/Face Protection: Goggles or safety glasses with side shields. Eye wash stations are recommended in areas where this product is used.
 Skin and Body Protection: Impervious gloves and long-sleeved and long-legged clothing should be worn to prevent skin contact. Safety shoes should be worn.
 Respiratory Protection: Use NIOSH or MSHA approved respirators as listed in accordance with 29 CFR Part 134 for existing conditions. Appropriate respirator selection is dependent upon the magnitude of exposure. A medical surveillance program should be implemented in accordance with NIOSH recommendations and other applicable federal, state, local or provincial requirements.

9 Physical and Chemical Properties

Appearance: Brown powder
 Physical State: Granular mixture
 Water Solubility: Slight
 Boiling Point/Range: Not applicable
 Specific Gravity: 2.11g/cc
 Autoignition: Not applicable
 Odor: Earthy
 Flash Point: Not applicable
 Melting Point/Range: 3050°F

10 Stability and Reactivity

Stability: Product is stable under normal conditions of use, storage, and transportation.
 Incompatible Products: Product can react with concentrated acids.
 Conditions to Avoid: Avoid dust formation. Refractories containing crystalline silica may, after service, contain more or less crystalline silica. Care must be taken to avoid and/or control dust from demolition. If in doubt of the proper protection, seek advice from a safety professional.

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11 Toxicological Information

Acute Toxicity--Product information: No data for LD50 or LC50 for oral, dermal, or inhalation routes of administration.

Chronic Toxicity: Irritant to skin and mucous membranes. Carcinogenicity: If inhaled

Chemical Name	Carginogenicity Categories
Crystalline Silica (Total)	
Cristobalite	IARC-1, MAK-1, NIOSH-Ca, NTP-K, TLV-A2
Quartz	IARC-1, MAK-1, NIOSH-Ca, NTP-K, TLV-A2
Titanium Dioxide	IARC-2B, MAK-3A, NIOSH-Ca, TLV-A4
Aluminum Oxide	MAK-2 (fibrous dust), TLV-A4

Target Organ Effects: Lungs, eyes, respiratory system, skin.

12 Ecological Information

No information has been developed regarding the ecotoxicity or environmental fate of this product.

13 Disposal Considerations

Disposal of Product: As supplied, product may be disposed of in an approved landfill, in accordance with federal, state, and local regulations.

14 Transport Information

U.S.A. DOT: Not regulated

15 Regulatory Information

International Inventories

TSCA: This substance or all ingredients are on the Chemical Substances Inventory of the Toxic Substances Control Act (TSCA Inventory). The presence on this list does not require any legal reporting. All components listed.

DSL: All components listed.

U.S. Federal Regulations

SARA 313: Not applicable

California: California Proposition 65: This product contains crystalline silica, chemical known to the State of California to cause cancer.

Other States: Crystalline silica products are not known to be regulated by states other than California; however, state and local OSHA & EPA regulations may apply to these products. Contact your local agency if in doubt.

WHMIS Hazard Class: Class D - Division 2 - Sub Division A:

16 Other Information

MSDS Status: Replaces all prior MSDS.

Note: This material safety data sheet contains confidential proprietary information and is not to be disclosed to the general public or to competition except as required by law. The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with Alsey Refractories Co. or not. This information is offered solely for use in your evaluation of this product in respect to safety, health, and environmental hazards.

End of MSDS