

MATERIAL SAFETY DATA SHEET

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1. PRODUCT AND COMPANY INFORMATION

TRADE NAME: **CARBO ACCUCAST® ID (All Mesh Sizes)**
SYNONYM(S): Ceramic Proppant; Semi-Crystalline Alumina Silicate
CHEMICAL FAMILY: Aluminosilicate
MANUFACTURER: CARBO Ceramics
4810 Industrial Drive
New Iberia, Louisiana 70560
Phone: 1-337-367-6151
EMERGENCY PHONE: 1-800-551-3247 (U.S.A.)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	CONCENTRATION	CLASSIFICATION	R-PHRASES
Corundum	1302-74-5	40-60%	Not Classified	Not assigned
Mullite	1302-93-8	35-60%	Not Classified	Not assigned

3. HEALTH HAZARD INFORMATION

INHALATION: Inhalation of dusts may cause respiratory tract irritation. Repeated or prolonged breathing of particles of respirable size may cause severe respiratory disease. However, this product contains few particles of respirable size. The amount of dust due to breakdown during shipment and handling is not expected to exceed applicable exposure limits.

EYE CONTACT: Airborne dust may cause irritation to eyes.

SKIN CONTACT: Prolonged contact with a skin may cause irritation.

HMIS RATING: HEALTH 1 (slight) FLAMMABILITY 0 (minimal) REACTIVITY 0 (minimal) **SPECIAL PROTECTION:** (See section 8)

4. FIRST AID MEASURES

INHALATION: Remove affected person from source of exposure. Get medical attention if irritation occurs.

INGESTION: Seek medical attention if large quantities are ingested.

EYE CONTACT: Immediately flush eyes with large amounts of water, lifting the lower and upper lids occasionally. If irritation is present after washing, get medical attention.

SKIN CONTACT: Wash the affected area with soap and water. Get medical attention if irritation occurs.

5. FIRE-FIGHTING MEASURES

ESTIMATED EXPLOSIVE LIMITS (% By volume in air): LEL: N/A UEL: N/A **FLASH POINT:** N/A
SPECIAL FIRE FIGHTING PROCEDURES: This material does not give a flash point by conventional test methods. Use extinguishing agent suitable for type of surrounding fire.

UNUSUAL HAZARDS: N/A

6. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: No Special procedures are required for clean-up of spills or leaks of this material. Caution should be exercised regarding personal safety and exposure to the spilled material, the material's nature could cause reduced traction. Persons should take care so as not to slip.

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7. HANDLING AND STORAGE

HANDLING: Do not create dust. Use personal protective equipment. Refer to section 8 for personal protective equipment.
STORAGE: Store dry in closed container to reduce dust.

8. EXPOSURE CONTROLS/PROTECTION DURING USE

EXPOSURE LIMITS:	INGREDIENTS	OSHA PEL-TWA	ACGIH-TWA TLV
	Corundum	15 mg/m ³ (total) 5 mg/m ³ (respirable)	10 mg/m ³ (total) 3 mg/m ³ (resp)
	Mullite	15 mg/m ³ (total) 5 mg/m ³ (respirable)	10 mg/m ³ (total) 3 mg/m ³ (resp)
ENGINEERING CONTROL MEASURES:	Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular worksite depend on how the material is used and the potential for exposure. Use of the basic principles of industrial hygiene will enable safe handling of the material.		
RESPIRATORY:	An applicable NIOSH/MSHA or equivalent approved respirator should be worn where airborne exposures may exceed OSHA/ACGIH permissible air concentrations.		
EYE PROTECTION:	Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance unless protected under full coverage goggles.		
CLOTHING/GLOVES:	Gloves are optional to reduce abrasion.		
WORK HYGIENE PRACTICES:	Handle in accordance with good personal hygiene and safety practices.		
VENTILATION:	Provide sufficient (general and/or local exhaust) ventilation to maintain exposure below permissible air concentrations.		

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	N/A °F	SPECIFIC GRAVITY:	3.3 (H ₂ O=1)	pH: N/A
MELTING POINT:	4000 °F (estimated)	BULK DENSITY:	116 lb/cu.ft.	
VAPOR PRESSURE:	N/A mm Hg	% VOLATILE BY WEIGHT:	N/A	
VAPOR DENSITY:	N/A (Air=1)	EVAPORATION RATE:	N/A (Butyl Acetate=1)	
APPEARANCE/ODOR:	Odorless brown to dark green to black spheres	SOLUBILITY IN WATER:	Insoluble	
VOLATILE ORGANIC COMPOUNDS (VOC):	0 lbs/gal (EPA Reference Methods 24)			

10. STABILITY AND REACTIVITY

REACTIVITY: Minimal
STABILITY: Stable
INCOMPATIBLE MATERIALS: Chlorine Trifluoride.

11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS Coughing and throat irritation are early symptoms of excessive exposure. May be irritating to the respiratory system, lungs and skin. May also cause irritation to eyes.
CHRONIC EFFECTS: Chronic exposure in excess of established human exposure levels can cause severe respiratory disease.

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12. ECOLOGICAL INFORMATION

This product poses no significant environmental contamination impact during expected use, handling, and proper disposal.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Disposal must be at an approved waste disposal facility and in accordance with applicable Federal, State and Local laws and regulations. Contact the district Director of the Environmental Protection Agency and/or state regulatory agency for appropriate requirements.

14. TRANSPORTATION INFORMATION

UN NO.	N/A
ICAO/IATA	Not Restricted
RID/ADR	Not Restricted
DOT SHIPPING DESCRIPTION	Not Restricted
CAN	Not Restricted
IMO	Not Restricted

15. REGULATORY INFORMATION

TOXIC SUBSTANCE CONTROL ACT (TSCA) STATUS: All chemicals in this product are listed, automatically included, or are exempt from listing on the TSCA Inventory.	SARA TITLE III:	Section 302:	None
		Section 312:	None
		Section 313:	None

CERCLA REPORTABLE QUANTITY:	None
CLEAN AIR AMENDMENTS-HAZARDOUS AIR POLLUTANTS (HAPS):	None
CALIFORNIA STATE PROPOSITION 65:	N/A

16. OTHER INFORMATION

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1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: **CARBO ACCUCAST® LD (All Mesh Sizes)**
SYNONYM(S): Ceramic Proppant; Semi-Crystalline Alumina Silicate
CHEMICAL FAMILY: Aluminosilicate
MANUFACTURER: CARBO Ceramics
4810 Industrial Drive
New Iberia, Louisiana 70560
Phone: 1-337-367-6151
EMERGENCY PHONE: 1-800-551-3247 (U.S.A.)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	CONCENTRATION	CLASSIFICATION	R-PHRASES
Silicon Dioxide, (amorphous as glass)	7631-86-9	5-35%	Not Classified	Not assigned
Mullite	1302-93-8	60-85%	Not Classified	Not assigned
Silica Crystalline-Cristobalite	14464-46-1	0-20%	Not Classified	Not assigned

3. HEALTH HAZARD INFORMATION

INHALATION: Inhalation of dusts may cause respiratory tract irritation. Repeated or prolonged breathing of particles of respirable size may cause severe respiratory disease. However, this product contains few particles of respirable size. Repeated indoor air quality monitoring and testing conducted throughout the production and shipping process at CARBO Ceramics Inc. Ceramics, Inc. shows that the final product produces levels of respirable silica (in the form of crystalline cristobalite) below laboratory detection limits and applicable exposure limits (see section 8). The amount of dust due to breakdown during shipment and handling is not expected to exceed applicable exposure limits (see section 8). Analyses for crystalline forms of silica at CARBO Ceramics Inc. Ceramics, Inc. facilities were performed by X-ray diffraction based upon OSHA ID 142 guidelines.

EYE CONTACT: Airborne dust may cause irritation to eyes.

SKIN CONTACT: Prolonged contact with a skin may cause irritation.

HMIS RATING: HEALTH 1 (slight) FLAMMABILITY 0 (minimal) REACTIVITY 0 (minimal) **SPECIAL PROTECTION:** (See section 8)

4. FIRST AID MEASURES

INHALATION: Remove affected person from source of exposure. Get medical attention if irritation occurs.

INGESTION: Seek medical attention if large quantities are ingested.

EYE CONTACT: Immediately flush eyes with large amounts of water, lifting the lower and upper lids occasionally. If irritation is present after washing, get medical attention.

SKIN CONTACT: Wash the affected area with soap and water. Get medical attention if irritation occurs.

5. FIRE-FIGHTING MEASURES

ESTIMATED EXPLOSIVE LIMITS (% By volume in air): LEL: N/A UEL: N/A FLASH POINT: N/A

SPECIAL FIRE FIGHTING PROCEDURES: This material does not give a flash point by conventional test methods. Use extinguishing agent suitable for type of surrounding fire.

UNUSUAL HAZARDS: N/A

6. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: No Special procedures are required for clean-up of spills or leaks of this material. Caution should be exercised regarding personal safety and exposure to the spilled material, the material's nature could cause reduced traction. Persons should take care so as not to slip.

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7. HANDLING AND STORAGE

HANDLING: Do not create dust. Use personal protective equipment. Refer to section 8 for personal protective equipment.
STORAGE: Store dry in closed container to reduce dust.

8. EXPOSURE CONTROLS/PROTECTION DURING USE

EXPOSURE LIMITS:	INGREDIENTS	OSHA PEL-TWA	ACGIH-TWA TLV
	Silicon Dioxide, amorphous as glass	80 mg/m ³ /%SiO ₂ (total)	-
	Mullite	15 mg/m ³ (total) 5 mg/m ³ (respirable)	10 mg/m ³ (total) 3 mg/m ³ (resp)
	Silica Crystalline Cristobalite	15 mg/m ³ /(%SiO ₂ +2) (total) 5 mg/m ³ /(%SiO ₂ +2) (respirable)	0.05 mg/m ³ (respirable)
ENGINEERING CONTROL MEASURES:	Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular worksite depend on how the material is used and the potential for exposure. Use of the basic principles of industrial hygiene will enable safe handling of the material.		
RESPIRATORY:	An applicable NIOSH/MSHA or equivalent approved respirator should be worn where airborne exposures may exceed OSHA/ACGIH permissible air concentrations.		
EYE PROTECTION:	Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance unless protected under full coverage goggles.		
CLOTHING/GLOVES:	Gloves are optional to reduce abrasion.		
WORK HYGIENE PRACTICES:	Handle in accordance with good personal hygiene and safety practices.		
VENTILATION:	Provide sufficient (general and/or local exhaust) ventilation to maintain exposure below permissible air concentrations.		

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	N/A °F	SPECIFIC GRAVITY:	2.7 (H ₂ O=1)	pH: N/A
MELTING POINT:	4000 °F (estimated)	BULK DENSITY:	97 lb/cu.ft.	
VAPOR PRESSURE:	N/A mm Hg	% VOLATILE BY WEIGHT:	N/A	
VAPOR DENSITY:	N/A (Air=1)	EVAPORATION RATE:	N/A (Butyl Acetate=1)	
APPEARANCE/ODOR:	Odorless cream to light-gray spheres	SOLUBILITY IN WATER:	Insoluble	
VOLATILE ORGANIC COMPOUNDS (VOC):	0 lbs/gal (EPA Reference Methods 24)			

10. STABILITY AND REACTIVITY

REACTIVITY: Minimal
STABILITY: Stable
INCOMPATIBLE MATERIALS: Chlorine Trifluoride.

11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS Coughing and throat irritation are early symptoms of excessive exposure. Acute pneumoconiosis from excessive exposure to silica dust has occurred. May be irritating to the respiratory system, lungs and skin. May also cause irritation to eyes.

CHRONIC EFFECTS: Inhalation of respirable crystalline-cristobalite in excess of established human exposure values is known to cause human cancer. Chronic exposure can cause severe respiratory disease.

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12. ECOLOGICAL INFORMATION

This product poses no significant environmental contamination impact during expected use, handling, and proper disposal.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Disposal must be at an approved waste disposal facility and in accordance with applicable Federal, State and Local laws and regulations. Contact the district Director of the Environmental Protection Agency and/or state regulatory agency for appropriate requirements.

14. TRANSPORTATION INFORMATION

UN NO.	N/A
ICAO/IATA	Not Restricted
RID/ADR	Not Restricted
DOT SHIPPING DESCRIPTION	Not Restricted
CAN	Not Restricted
IMO	Not Restricted

15. REGULATORY INFORMATION

TOXIC SUBSTANCE CONTROL ACT (TSCA) STATUS: All chemicals in this product are listed, automatically included, or are exempt from listing on the TSCA Inventory.	SARA TITLE III:	Section 302:	None
		Section 312:	None
		Section 313:	None

CERCLA REPORTABLE QUANTITY: None

CLEAN AIR AMENDMENTS-HAZARDOUS AIR POLLUTANTS (HAPS): None

CALIFORNIA STATE PROPOSITION 65: Silica, crystalline (airborne particles of respirable size)

16. OTHER INFORMATION