

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING**1.1 Product identifier**

Trade name: **CARBO NORTHERN-WHITE**
Registration number: NA
Synonym(s): Crystalline Silica Sand; Quartz Sand; Sand Proppant; Silicon Dioxide
Preparation/Revision date: 11 January 2017

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Abrasive grinding / polishing media; Casting media; Filtration media;
Heat transfer media; Proppant for oil / natural gas well hydraulic
fracturing
Uses advised against: None known

1.3 Details of the supplier of the safety data sheetManufacturer / Supplier

Company name: CARBO Ceramics Inc.
Address: 575 N. Dairy Ashford Road, Suite 300
Houston, Texas 77079, USA
Customer service: 1-337-367-6151

1.4 Emergency telephone number

For Chemical Emergency
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300


SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

The product has been assessed and /or tested for its physical, health and environmental hazards and the following classifications apply.

Classification according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification: Carcinogenicity – Category 1A

SECTION 2: HAZARDS IDENTIFICATION (CONT'D)**2.2 Label elements**

Contains:	Crystalline silica – contains less than 1% respirable crystalline silica
Hazard pictogram:	
Signal word:	Danger
Hazard statement:	May cause cancer via inhalation.
Precautionary statements:	
- Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective clothing.
- Response:	If exposed or concerned: Get medical advice/attention.
- Storage:	Store in a manner to prevent generation of dust.
- Disposal:	Dispose of contents / container in accordance with local, regional, national and international regulations.
Supplemental label information:	None

2.3 Other hazards

None known

Hazard summary

Physical hazards:	None known.
Health hazards:	May cause cancer. Prolonged and/or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Occupational exposure to respirable crystalline silica dust should be monitored and controlled. Contains less than 1% respirable silica. Prolonged inhalation of insoluble, respirable (less than 10 micron) dusts can lead to pulmonary damage. Use standard hygienic practices to minimize exposure to dusts that may form.
Environmental hazards:	None known.
Main symptoms:	May cause cancer. Prolonged or repeated exposure to crystalline silica dust may cause silicosis. Principal symptoms of silicosis are cough and breathlessness. Exposure to dust may cause irritation of eyes, nose, throat and mucous membranes. Prolonged contact with skin may cause irritation.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**3.1 Article**

Chemical Name	Percent	CAS No.	Notes
Crystalline silica, quartz	99-100	14808-60-7	#
Respirable crystalline silica	<1		

#: This substance has workplace exposure limit(s)

Composition comments: May contain respirable silica sand / quartz as an impurity – less than 1% of total product. All concentrations are in percent by weight unless ingredients are a gas. Gas concentrations are in percent by volume.

SECTION 4: FIRST AID MEASURES**General Information**

Show this Safety Data Sheet to the medical professional in attendance. Exposure is not anticipated with use of this product as intended. If symptoms occur, follow first aid measures as appropriate.

4.1 Description of first aid measures

Inhalation:

Remove to fresh air. Get medical attention if irritation or symptoms persist.

Skin contact:

Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

Eye contact:

Rinse immediately with plenty of water, including under the eyelids, for at least 15 minutes. Get medical attention if irritation or symptoms persist.

Ingestion:

Rinse mouth. Do not induce vomiting. Get medical attention.

Notes to Physician:

Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed

May cause cancer. Prolonged or repeated exposure to crystalline silica dust may cause silicosis. Principal symptoms of silicosis are cough and breathlessness. Exposure to dust may cause irritation of eyes, nose, throat and mucous membranes. Prolonged contact with skin may cause irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptoms as needed.

SECTION 5: FIRE FIGHTING MEASURES

General fire hazards This product is not flammable.

5.1 Extinguishing Media

Suitable extinguishing media: Use extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture None known.

5.3 Advice for firefighters

Special protective equipment for firefighters: Not applicable
Special firefighting procedures: Not applicable
Special remarks on fire hazards: None

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel: Avoid dust formation. Wear suitable protective clothing. Avoid contact with skin and eyes. Contaminated clothing should not be allowed outside of the workplace.
For emergency responders: Use personal protection recommended in Section 8 of the SDS.

6.2 Environmental Precautions None known

6.3 Methods and materials for containing and cleaning up Sweep up spilled substance and remove to safe place. Pick up and arrange for disposal without creating dust. Collect and dispose of spillage as indicated in Section 13.

6.4 Reference to other Sections For personal protection, see Section 8.
For waste disposal, see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid dust formation. Avoid breathing dust. Contaminated clothing should not be allowed outside of the workplace. Provide appropriate exhaust ventilation at places where airborne dust is generated. In case of insufficient ventilation, wear suitable respiratory protective equipment. Observe good industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a manner that prevents generation of dust. Store in accordance with local, regional, national and international regulations.

7.3 Specific end use(s)

Various industrial uses including abrasives, casting, filtration, oil & gas well stimulation, etc.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

United States of America. Occupational Exposure Limits

Component	CAS No.	Type	Value	Form
Silica, crystalline, quartz	14808-60-7	ACGIH TLV – TWA	0.025 mg/m ³	Respirable fraction
Silica, crystalline, quartz	14808-60-7	NIOSH REL - TWA	0.05 mg/m ³	Respirable dust
Silica, crystalline, quartz	14808-60-7	NIOSH REL - IDLH	50 mg/m ³	Respirable dust
Quartz	14808-60-7	OSHA PEL - TWA	(30)/(%SiO ₂ + 2) mg/m ³	Total dust
Quartz	14808-60-7	OSHA PEL - TWA	(250)/(%SiO ₂ + 5) mppcf	Respirable fraction
Quartz	14808-60-7	OSHA PEL - TWA	(10)/(%SiO ₂ + 2) mg/m ³	Respirable fraction
Respirable crystalline silica*	N/A	OSHA PEL - TWA	50 µg/m ³	Respirable fraction

*Effective June 23, 2016, after which industries must comply according to the following: construction industry – June 23, 2017; general industry – June 23, 2018; hydraulic fracturing – June 23, 2018 for all provisions except Engineering Controls, which have a compliance date of June 23, 2021.

Consult local authorities for acceptable exposure limits

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION (CONT'D)**8.2 Exposure Controls**

Appropriate engineering controls: Observe occupational exposure limits and prevent generation of dusts. Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below specified exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne particles below the exposure limit.

Individual Protective Measures

General Information: Personal protective equipment should be chosen according to applicable standards and in consultation with the supplier of the personal protective equipment. Spilled material can reduce traction and may present a slip hazard.

Eye/face protection: Wear safety glasses with side shields or goggles. Avoid wearing contact lenses while handling.

Skin protection:

- Hand protection: Wear protective gloves.
- Other: Minimize skin contact.

Respiratory protection: In case of inadequate ventilation or risk of inhalation of dust, use a suitable air purifying respirator with particle filter or dust mask (Type P2).

Thermal hazards: Not applicable

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated clothing should not be allowed outside of the workplace.

Environmental exposure controls

Environmental manager must be informed of all major releases. Avoid wind dispersal and fugitive dust generation.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Solid spheres or grains	Explosive properties	Not applicable
Color	Tan to light gray to white	Explosive limit	Not applicable
Odor	Odorless	Vapor pressure	Not applicable
Odor threshold	Not applicable	Vapor density	Not applicable
pH	Not applicable	Evaporation rate	Not applicable
Melting/freezing point	2,930°F / 1,610°C	Relative density	2.5 (water = 1)
Boiling point, initial boiling point and boiling range	Not applicable	Partition coefficient (n-octanol/water)	No data available
Flash point	Not applicable	Solubility (water)	Insoluble in water
Auto-ignition temperature	Not applicable	Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable	Bulk density	105 lb/ft ³ (1,682 kg/m ³)
Flammability limit-lower%	Not applicable	Viscosity	Not applicable
Flammability limit-upper%	Not applicable	VOC (weight %)	0 %
Oxidizing properties	Not applicable	Percent volatile	Not applicable

9.2 Other Information

No relevant additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur under normal conditions.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

None known.

10.6 Hazardous decompositions products

None known.

SECTION 11: TOXICOLOGICAL INFORMATION

General information on likely routes of exposure

Ingestion:

May cause discomfort if swallowed.

Inhalation:

May cause cancer. Inhalation of significant amounts of silica dust may cause respiratory irritation and health effects, including lung fibrosis / silicosis.

SECTION 11: TOXICOLOGICAL INFORMATION (CONT'D)

Skin contact: Dust may irritate skin.
Eye contact: Dust may irritate eyes.
Symptoms: May cause cancer. Prolonged or repeated exposure to crystalline silica dust may cause silicosis. Principal symptoms of silicosis are cough and breathlessness. Exposure to dust may cause irritation of eyes, nose, throat and mucous membranes. Prolonged contact with skin may cause irritation.

11.1 Information on toxicological effects

Acute Toxicity: No data were identified for this product.
Serious Eye Damage/Irritation: No data were identified for this product.
Skin corrosion/Irritation: No data were identified for this product.
Respiratory/Skin Sensitization: No data were identified for this product.
Germ Cell Mutagenicity: Results of genotoxicity studies of quartz/crystalline silica are conflicting. A direct genotoxic effect for quartz has not been confirmed or ruled out.
Carcinogenicity: Inhalation of respirable silica crystalline-Cristobalite in excess of established human exposure limits is known to cause cancer. According to the International Agency for Research on Cancer (IARC), crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1), and amorphous silica is not classifiable as to its carcinogenicity to humans (Group 3). Crystalline silica of respirable size is classified by the National Toxicology Program (NTP) as a known human carcinogen. Crystalline silica is classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as a suspected human carcinogen.
Reproductive Toxicity: No data were identified for this product.
Developmental Effects: No data were identified for this product.
STOT – Single Exposure: Limited data in animal studies showed pulmonary inflammatory effects following single exposures to aerosolized quartz/crystalline silica particles.
STOT– Repeated Exposure: Prolonged and/or repeated exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica. Prolonged inhalation of insoluble, respirable (less than 10 micron) dusts can lead to pulmonary damage.
Aspiration Hazard: Not relevant based on physical form of the product.

Conclusion/Summary

May cause cancer. Prolonged and/or massive inhalation of respirable crystalline silica dust may cause lung fibrosis / silicosis.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity / Aquatic ecotoxicity	No data were identified for this product.
12.2 Persistence and degradability	Product is not biodegradable with low solubility in water and is not expected to decompose in the environment.
12.3 Bioaccumulative potential	Product is not biodegradable with low solubility in water and is not expected to accumulate in the environment.
12.4 Mobility	No data available
12.5 Results of PBT and vPvB assessment	Not a PBT or vPvB material
12.6 Other adverse effects	This product is not classified as hazardous to the environment.
Conclusion/Summary	This product is believed to be non-toxic in the environment.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Residual waste:	Dispose of in accordance with all applicable regulations.
Contaminated packaging:	Empty containers should be taken to an approved waste handling site for recycling or disposal.
Disposal methods/information:	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local, regional, national, international regulations.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number	Not applicable, not regulated as hazardous for transport.
14.2 UN proper shipping name	Not applicable, not regulated as hazardous for transport.
14.3 Transport hazard class(es)	Not applicable, not regulated as hazardous for transport.
14.4 Packing group	Not applicable, not regulated as hazardous for transport.
14.5 Environmental hazards	Not applicable, not regulated as hazardous for transport.
14.6 Special precautions for user	Not applicable, not regulated as hazardous for transport.

SECTION 14: TRANSPORT INFORMATION (CONT'D)

14.7 Transport in bulk according to Annex II MARPOL73/78 and the IBC Code

Not applicable, not regulated as hazardous for transport.

The transport regulation may vary based on the country of use. Check for the appropriate regulations in the country of transport or usage of this product.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

USA Federal Regulations

29 CFR 1910.1200 Hazard Communication Standard (HCS):	Hazardous
TSCA - U.S. Inventory (TSCA 8b):	Exempt/Compliant
SARA Title III – Section 302, Extremely Hazardous Substances (EHS):	Not listed
CERCLA - Hazardous substances:	Not listed

Release of CERCLA hazardous substances in excess of any reportable quantity threshold to the environment requires notification to the National Response Center (+1-800-424-8802 or +1-202-267-2675).

SARA Title III – 311/312, Hazard Classes:

Fire / Flammability	No
Reactivity	No
Release of Pressure	No
Acute Health Hazard	No
Chronic Health Hazard	Yes

SARA 313 – Toxic Chemicals: Not listed

USA State Regulations

California Prop 65:	Silica, crystalline, airborne particles of respirable size
Massachusetts – Right to Know:	Crystalline silica, quartz
New Jersey - Right to Know:	Crystalline silica, quartz
Pennsylvania – Right to Know:	Crystalline silica, quartz
Rhode Island– Right-to-Know:	Crystalline silica, quartz

WARNING: This product contains a chemical known to the State of California to cause cancer.

Other Regulations None specified

SECTION 16: OTHER INFORMATION**Label Requirements**

This product has been classified as hazardous and requires labeling.

List of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
EC50	Effective Concentration (median)
IARC	International Agency for Research on Cancer
IDLH	Immediately Dangerous to Life and Health
LC50	Lethal Concentration (median)
LD50	Lethal Dose (median)
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (United States)
PEL	Permissible Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
vPvB	Very Persistent and Very Bioaccumulative

References

ChemAdvisor List of Lists (LOLI)
IARC Monographs. Overall Evaluation of Carcinogenicity
IUCLID DATA Set

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details refer to Sections 9, 11 and 12.

Training information

Follow training instructions when handling this material.

SDS Revisions

SDS revised on 11 January 2017.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.