

This Safety Data Sheet is compliant with the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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

Trade name: **SALTGUARD**
Synonym(s): Release-Controlled, Infused Ceramic Proppant; Semi-Crystalline Alumina Silicate; Sintered Kaolinite
Preparation/Revision date: 14 September 2018

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

Identified uses: Proppant for oil and natural gas well hydraulic fracturing and salt inhibition
Uses advised against: None known

1.3 Details of the supplier of the safety data sheet**Manufacturer / 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**

This product is an article that contains a chemical additive intended for time-release after delivery of the proppant into the well. Human and environmental exposure to the chemical additive is not anticipated under normal handling and storage conditions. The following information is provided as a courtesy in case of incidental exposure. This article 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: Not Classified

2.2 Label elements

Hazard pictogram: None

Signal word: None

Hazard statement(s): None

Precautionary statements:

- Prevention: None

- Response: None

- Storage: None

- Disposal: None

Hazards Not Otherwise Classified: None

2.3 Other hazards None

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture

Chemical Name	Percent	CAS No.	Hazard Classification
Ceramic materials and wares, chemicals	89-95	66402-68-4	Not classified
Semi-permeable coating	2-4	Trade Secret	Not classified
Polymeric salt inhibitor	3-7	Trade Secret	Not classified

Composition comments: All concentrations are in percent by weight.

SECTION 4: FIRST AID MEASURES

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. If skin irritation or rash occurs: Get medical advice/attention.

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: None specified.

4.2 Most important symptoms and effects, both acute and delayed Exposure to dust may cause irritation of eyes, nose, throat and mucous membranes. Prolonged contact with skin may cause irritation. Use of the product as intended does not result in exposure to dust.

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 may ignite if exposed to open flame or other ignition sources.

5.1 Extinguishing Media

Suitable extinguishing media: CO₂, dry chemical, foam or water
Unsuitable extinguishing media: Not applicable

5.2 Special hazards arising from the substance or mixture None known

5.3 Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.
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 gloves and other suitable protective clothing. Avoid contact with skin and eyes.
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. Spilled material can reduce traction and may present a slip hazard. Collect and dispose of spillage as indicated in Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling Avoid dust formation. Avoid breathing dust. Wear protective gloves. Observe good industrial hygiene practices. Spilled material can reduce traction and may present a slip hazard.

7.2 Conditions for safe storage, including any incompatibilities Keep container tightly closed. Store in original containers in a cool and dry environment. Store in accordance with local, regional, national and international regulations.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters****United States. Occupational Exposure Limits**

Component	CAS No.	OSHA PEL	ACGIH TLV	NIOSH
Ceramic materials and wares, chemicals	66402-68-4	None	None	None
Semi-permeable coating	Trade Secret	None	None	None
Polymeric salt inhibitor	Trade Secret	None	None	None

Consult local authorities for acceptable exposure limits

8.2 Exposure Controls**8.2.1. Appropriate engineering controls**

General Information:

Observe occupational exposure limits and prevent generation of dusts. 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.

8.2.2 Individual Protective Measures

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 or equivalent).
Thermal hazards:	Not applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Solid spheres	Explosive properties	Not applicable
Color	Pale green to pale yellow	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	Not applicable (Semi-permeable coating) 4,000°F / 2,204°C (Estimated - Substrate)	Relative density	2.1 (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	76 lb/ft ³ (1.22 g/cm 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
10.5 Incompatible materials	Strong oxidizers
10.6 Hazardous decompositions products	Thermal decomposition may produce oxides of carbon, oxides of nitrogen, ammonia, aldehydes or other materials.

SECTION 11: TOXICOLOGICAL INFORMATION**General information on likely routes of exposure**

Ingestion:	May cause discomfort if swallowed.
Inhalation:	Inhalation of dust or chemical additives may cause respiratory irritation. Use of this product as intended does not result in exposure to dust or chemical additives.
Skin contact:	Inhalation of dust or chemical additives may cause skin irritation. Use of this product as intended does not result in exposure to dust or chemical additives.
Eye contact:	Inhalation of dust or chemical additives may cause eye irritation. Use of this product as intended does not result in exposure to dust or chemical additives.
Symptoms:	Exposure to dust or chemical additives may cause irritation to eyes, nose, throat and mucous membranes. Exposure to the chemical additive may cause irritation to the eyes and skin. Use of this product as intended does not result in exposure to dust or chemical additives.

11.1 Information on toxicological effects

Acute Toxicity:	No data were identified for the product or its constituents.
Serious Eye Damage/Irritation:	No data were identified for this product or its constituents.
Skin corrosion/Irritation:	No data were identified for this product or its constituents.
Respiratory/Skin Sensitization:	No data were identified for this product or its constituents.
Germ Cell Mutagenicity:	No data were identified for this product or its constituents.
Carcinogenicity:	No data were identified for the product or its constituents.
Reproductive Toxicity:	No data were identified for this product or its constituents.
Developmental Effects:	No data were identified for this product or its constituents.
STOT – Single Exposure:	No data were identified for this product or its constituents.
STOT – Repeated Exposure:	No data were identified for the product or its constituents. While the use of this product as intended is not anticipated to create respirable dust, small amounts may form from transport or conveyance. Prolonged inhalation of respirable dust (less than 10 micron) can lead to pulmonary damage.
Aspiration Hazard:	Not relevant based on physical form of the product.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity / Aquatic ecotoxicity	No data were identified for the product or its constituents.
12.2 Persistence and degradability	Product is not biodegradable, has low solubility in water and is not expected to decompose in the environment.
12.3 Bioaccumulative potential	Product is not biodegradable, has 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	No data were identified for this product. Not classified for hazards to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

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 and 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.
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): Not hazardous

TSCA - U.S. Inventory (TSCA 8b): Exempt/Compliant

Clean Water Act: Not listed

Clean Air Act – Hazardous Air Pollutants: Not listed

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: No

SARA 313 – Toxic Chemicals Not listed

USA State Regulations

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under any State Regulations.

California Proposition 65: Not listed

SECTION 16: OTHER INFORMATION**List of abbreviations**

ACGIH	American Conference Of Governmental Industrial Hygienists
°C	Degrees Celsius
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
°F	Degrees Fahrenheit
g/cm ³	Grams Per Cubic Centimeter

List of abbreviations

IBC Code	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
IDLH	Immediately Dangerous To Life or Health
Lb/ft ³	Pounds Per Cubic Foot
MARPOL	Marine Pollution -- International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
UN	United Nations
VOC	Volatile Organic Compound
vPvB	Very Persistent and Very Bioaccumulative
%	Percent

SDS Revisions

SDS prepared on 14 September 2018

Disclaimer

This SDS has been prepared in accordance with the Hazard Communication Rule 29 CFR 1910.1200. Information herein is based on data considered to be accurate as of the date prepared. No warranty or representation, express or implied, is made as to the accuracy or completeness of this data and safety information. No responsibility can be assumed for any damage or injury resulting from abnormal use, failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.