

## SAFETY DATA SHEET

### TUNNEL-GEL® SW

Revision Date: 02-Mar-2023

Revision Number: 12

#### 1. Identification

##### Product identifier

Product Name TUNNEL-GEL® SW

##### Other means of identification

Hazardous Material Number: HM006411

##### Recommended use of the chemical and restrictions on use

Recommended Use Viscosifier

##### Supplier details

Halliburton Energy Services  
Av. Amazonas N37-29 y Villalengua Edif.,  
Quito, Ecuador

Halliburton Energy Services  
Carrera 7 No. 71-52, Floor 7, Torre B,  
Bogotá, Colombia

Halliburton Energy Services  
Avenida Principal De Santa Rita Sector  
Punta  
Santa Rita, WES, Venezuela

##### For further information, please contact:

E-mail Address fdunexchem@halliburton.com

##### Emergency Phone number

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Panama: +50 78 387596  
Global Incident Response Access Code: 334305  
Contract Number: 14012

#### 2. Hazards Identification

##### Classification of the hazardous chemical

Carcinogenicity Category 1B - H350

##### Label Elements

##### Hazard Pictograms



Signal Word:

Danger

**Hazard Statements** H350 - May cause cancer

**Precautionary Statements**

**Prevention** P201 - Obtain special instructions before use  
 P202 - Do not handle until all safety precautions have been read and understood  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
**Response** P308 + P313 - IF exposed or concerned: Get medical advice/attention  
**Storage** P405 - Store locked up  
**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

**Substances**

Crystalline silica, quartz

**CAS Number**

14808-60-7

**Other hazards which do not result in classification**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

### 3. Composition/Information on Ingredients

**Product Classification:** Mixture

Substances	CAS Number	PERCENT (w/w)	GHS Classification
Crystalline silica, quartz	14808-60-7	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)

The exact percentage (concentration) of the composition has been withheld as proprietary.

### 4. First Aid Measures

**Description of first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Most important symptoms and effects, both acute and delayed**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically

### 5. Fire-fighting measures

**Suitable extinguishing media**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Physicochemical hazards arising from the chemical**

**Special exposure hazards in a fire**

Not applicable

**Special protective equipment and precautions for fire fighters****Special protective equipment for firefighters**

Not applicable

**6. Accidental Release Measures****Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

See Section 8 for additional information.

**Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**Methods and material for containment and cleaning up**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

**7. Handling and storage****Precautions for safe handling**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 36 months.

**8. Exposure Controls/Personal Protection****Control parameters****Exposure Limits**

Substances	CAS Number	Venezuela	Colombia	Argentina
Crystalline silica, quartz	14808-60-7	TWA: 0.025 mg/m <sup>3</sup>	TWA: 0.025 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>

**Appropriate engineering controls****Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

**Individual protection measures, such as personal protective equipment****Personal Protective Equipment**

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection**

Not normally needed. But if significant exposures are possible then the following respirator is recommended:

Dust/mist respirator. (N95, P2/P3)

Normal work gloves.

**Hand Protection****Skin Protection**

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection**

Wear safety glasses or goggles to protect against exposure.

**Other Precautions**

None known.

**Environmental Exposure Controls**

Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

**Physical State:** Powder  
**Odor:** Odorless

**Color:** Light gray to Tan  
**Odor Threshold:** No information available

#### Property

Remarks/ - Method

#### **pH:**

**Freezing Point / Range**

**Melting Point / Range**

**Pour Point / Range**

**Boiling Point / Range**

**Flash Point**

**Evaporation rate**

**Vapor Pressure**

**Vapor Density**

**Specific Gravity**

**Water Solubility**

**Solubility in other solvents**

**Partition coefficient: n-octanol/water**

**Autoignition Temperature**

**Decomposition Temperature**

**Viscosity**

**Explosive Properties**

**Oxidizing Properties**

#### Values

6.5-8.5

No data available

No data available

No data available

No data available

No data available

No data available

No data available

No data available

No data available

2.4

Partly soluble

No data available

No data available

No data available

No data available

No data available

No information available

No information available

#### Other information

**VOC Content (%)**

No data available

## 10. Stability and Reactivity

### Reactivity

Not expected to be reactive.

### Chemical stability

Stable

### Possibility of hazardous reactions

Will Not Occur

### Conditions to avoid

None anticipated

### Incompatible materials

Hydrofluoric acid.

### Hazardous decomposition products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

### Information on possible routes of exposure

**Principle Route of Exposure** Eye or skin contact, inhalation.

### **Most Important Symptoms/Effects**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica, quartz	14808-60-7	> 15000 mg/kg (human)	No data available	No data available

**Immediate, delayed and chronic health effects from exposure****Inhalation**

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Eye Contact**

May cause mechanical irritation to eye.

**Skin Contact**

None known.

**Ingestion**

None known.

**Chronic Effects/Carcinogenicity**

**Silicosis:** Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

**Cancer Status:** The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

This product contains Wyoming bentonite or other sorptive clays. Crystalline silica forms found in this particular clay are limited to quartz. Extreme temperatures that can generate cristobalite or tridymite are not expected to occur under realistic conditions. In addition, all quartz found in sorptive clays are considered "occluded", i.e., strongly coated with an amorphous silica surface (Wendlandt et al., 2007; Hochella and Muryama, 2010; SMI, 2014). Occluded quartz has been experimentally-determined to be relatively non-toxic compared to unoccluded quartz (Geh et al., 2006; Creutzenberg et al., 2008). A lack of health effects found in several studies examining occupational exposure to sorptive clays also suggest that chronic inhalation of sorptive clays is not expected to result in silicosis or cancer (Waxweiler et al., 1988; ACGIH, 1991; USEPA, 1996; IARC, 2005). In light of these findings OSHA has recently exempted Wyoming bentonite and other sorptive clays from the crystalline silica PEL in §1910.1053(a)(1)(iii).

Substances	CAS Number	Skin corrosion/irritation
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Serious eye damage/irritation
Crystalline silica, quartz	14808-60-7	Non-irritating to the eye No information available

Substances	CAS Number	Skin Sensitization
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Crystalline silica, quartz	14808-60-7	No information available.
<b>Substances</b>	<b>CAS Number</b>	<b>Respiratory Sensitization</b>
Crystalline silica, quartz	14808-60-7	No information available
<b>Substances</b>	<b>CAS Number</b>	<b>Mutagenic Effects</b>
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.
<b>Substances</b>	<b>CAS Number</b>	<b>Carcinogenic Effects</b>
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.
<b>Substances</b>	<b>CAS Number</b>	<b>Reproductive toxicity</b>
Crystalline silica, quartz	14808-60-7	No information available
<b>Substances</b>	<b>CAS Number</b>	<b>STOT - single exposure</b>
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.
<b>Substances</b>	<b>CAS Number</b>	<b>STOT - repeated exposure</b>
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
<b>Substances</b>	<b>CAS Number</b>	<b>Aspiration hazard</b>
Crystalline silica, quartz	14808-60-7	No information available

## 12. Ecological Information

### Ecotoxicity

#### 12.1. Toxicity

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Crystalline silica, quartz	14808-60-7	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	No information available	LL50(24 h)>10000 mg/L (Daphnia magna)

#### Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

#### Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Crystalline silica, quartz	14808-60-7	No information available

#### Mobility in soil

Substances	CAS Number	Mobility
Crystalline silica, quartz	14808-60-7	No information available

#### Other adverse effects

##### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

#### Disposal methods

##### Disposal methods

##### Contaminated Packaging

Bury in a licensed landfill according to federal, state, and local regulations.

Follow all applicable national or local regulations.

## 14. Transport Information

### Transportation Information

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

### IMDG/IMO

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

### IATA/ICAO

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

### Special precautions for user

None

## 15. Regulatory Information

### International Agreements

<b>Montreal Protocol - Ozone Depleting Substances:</b>	Does not apply.
<b>Stockholm Convention - Persistent Organic Pollutants:</b>	Does not apply
<b>Rotterdam Convention - Prior Informed Consent:</b>	Does not apply.
<b>Basel Convention - Hazardous Waste:</b>	Does not apply.

**NFPA Ratings:** Health 0, Flammability 0, Reactivity 0  
**HMIS Ratings:** Health 0\*, Flammability 0, Physical Hazard 0

## 16. Other Information

**Revision Date:** 02-Mar-2023

### **Revision Note**

Update to Format

SDS sections updated:

2

### **Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

NZ CCID

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

bw – body weight

CAS – Chemical Abstracts Service

EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%

EEC – European Economic Community

ErC50 – Effective Concentration growth rate 50%

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IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
LC50 – Lethal Concentration 50%  
LD50 – Lethal Dose 50%  
LL0 – Lethal Loading 0%  
LL50 – Lethal Loading 50%  
MARPOL – International Convention for the Prevention of Pollution from Ships  
mg/kg – milligram/kilogram  
mg/L – milligram/liter  
NIOSH – National Institute for Occupational Safety and Health  
NOEC – No Observed Effect Concentration  
NTP – National Toxicology Program  
OEL – Occupational Exposure Limit  
PBT – Persistent Bioaccumulative and Toxic  
PC – Chemical Product category  
PEL – Permissible Exposure Limit  
ppm – parts per million  
PROC – Process category  
STEL – Short Term Exposure Limit  
h - hour  
d - day

**Disclaimer Statement**

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**End of Safety Data Sheet**