FLUID TECHNOLOGY SERVICE

INTERNATIONAL, L.L.C.

SHALESTOP-S
SAFETY DATA SHEET

Version 1.0
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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifier — ShaleStop-S

Recommended use — Not available
Recommended restrictions — None known

1.2 Manufacturer

Company name — Fluid Technology Service International, LLC
Address — P.O. Box 1702
Scott, LA 70583
Phone — 1 (877) 503-5843
Website — www.fluidtechnologyservice.com

1.3 Emergency Contact

Chemtrek (24 Hours) — 1 (800) 424-9300

SECTION 2: HAZARD IDENTIFICATION

2.1 Physical hazards — Not classified
Health hazards — Carcinogenicity Category 1A
Environmental hazards — Not classified
OSHA defined hazards — Not classified

2.2 Label elements

Hazard symbol

Signal word — Danger
Hazard statement — May cause cancer.

2.3 Precautionary statement

Prevention — Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.
Response — If exposed or concerned: Get medical advice/attention.
Storage — Store locked up.
Disposal — Dispose of contents/container in accordance with local/regional/national/international regulations.

2.4 Hazard(s) not otherwise classified (HNOC) — None known

2.5 Supplemental information — None

SECTION 3: COMPOSITION / INFORMATION OF INGREDIENTS

3.1 Mixtures

Chemical Name	Common name and synonyms	CAS Number	%
Sulfonated Asphalt, sodium salt	ShaleStop-S	68201-32-1	≥99
Crystalline Silica		14808-60-7	0 - 1

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

SECTION 4: FIRST AID MEASURES

4.1	**Inhalation**	Move to fresh air. Call a physician if symptoms develop or persist.
	Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
	Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
	Ingestion	Rinse mouth. Get medical attention if symptoms occur.
4.2	**Most important symptoms, effects, acute and delayed**	Dusts may irritate the respiratory tract, skin and eyes.
4.3	**Indication of immediate medical attention and special treatment needed**	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
4.4	**General information**	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5: FIRE FIGHTING MEASURES

5.1	**Suitable extinguishing media**	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
	Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
5.2	**Specific hazards arising from the chemical**	During fire, gases hazardous to health may be formed.
5.3	**Special protective equipment and precautions for firefighters**	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
5.4	**Firefighting equipment/instructions**	Use water spray to cool unopened containers.
	Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
5.5	**General fire hazards**	No unusual fire or explosion hazards noted.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
6.2 Methods and materials for containment and cleaning up	Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
6.3 Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
7.2 Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Occupational exposure limits

No exposure limits noted for ingredient(s).

8.2 Biological limit values

No biological exposure limits noted for the ingredient(s).

8.3 Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

8.4 Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

8.5 Individual protection measures

Eye/face protection

Chemical respirator with organic vapor cartridge, full face piece, dust and mist filter.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Use of an impervious apron is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full face piece, dust and mist filter.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

8.6 General hygiene considerations

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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance	Powder
Physical state	Solid
Form	Powder
Color	Dark brown to Black
Odor	Earthy Mild
Odor threshold	Not available
pH	Not available
Melting point/freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	
Flammability limit-lower (%)	Not available
Flammability limit-upper (%)	Not available
Explosive limit-lower (%)	Not available
Explosive limit-upper (%)	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	Not available
Solubility(ies)	
Solubility (water)	Not available
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

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	No dangerous reaction known under conditions of normal use.
10.4 Conditions to avoid	Contact with incompatible materials.
10.5 Incompatible materials	Strong oxidizing agents.
10.6 Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	**Information on likely routes of exposure**	
	Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
	Skin contact	Dust or powder may irritate the skin.
	Eye contact	Dust may irritate the eyes.
	Ingestion	Expected to be a low ingestion hazard.
11.2	**Symptoms related to the physical, chemical and toxicological characteristics**	Dusts may irritate the respiratory tract, skin and eyes.
11.3	**Information on toxicological effects**	
	Acute toxicity	Not available
	Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
	Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
	Respiratory sensitization	Not a respiratory sensitizer.
	Skin sensitization	This product is not expected to cause skin sensitization.
11.4	**Germ cell mutagenicity**	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
11.5	**Carcinogenicity**	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity	Crystalline Silica (CAS 14808-60-7) 1 Carcinogenic to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed
US. National Toxicology Program (NTP) Report on Carcinogens	Crystalline Silica (CAS 14808-60-7) Known To Be Human Carcinogen.

11.6 Reproductive toxicity — This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure	Not classified
Specific target organ toxicity - repeated exposure	Not classified

11.7 Aspiration hazard — Not an aspiration hazard.

11.8 Chronic effects — Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity — The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2 Persistence and degradability — No data is available on the degradability of this product.

12.3 Bioaccumulative potential — No data available.

12.4 Mobility in soil — No data available.

12.5 Other adverse effects — No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: DISPOSABLE CONSIDERATIONS

13.1 Disposal instructions — 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.

13.2 Local disposal regulations — Dispose in accordance with all applicable regulations.

13.3 Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
13.4 Waste from residues/unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
13.5 Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: TRANSPORT INFORMATION

14.1 DOT	Not regulated as dangerous goods.
14.2 IATA	Not regulated as dangerous goods.
14.3 IMDG	Not regulated as dangerous goods.
14.4 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 US Federal regulations	One or more components are not listed on TSCA. This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List or are exempt.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
SARA 304 Emergency release notification	Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard Categories	**Immediate Hazard:** No **Delayed Hazard:** Yes **Fire Hazard:** No **Pressure Hazard:** No **Reactivity Hazard:** No
SARA 302 Extremely hazardous substance	Not listed

SARA 311/312 Hazardous chemical	No
SARA 313 (TRI reporting)	Not regulated
Other federal regulations	
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated
Safe Drinking Water Act (SDWA)	Not regulated
US state regulations	
US California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)	Not listed
US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))	Crystalline Silica (CAS 14808-60-7)
US Massachusetts RTK – Substance List	Crystalline Silica (CAS 14808-60-7)
US New Jersey Worker and Community Right-to-Know Act	Crystalline Silica (CAS 14808-60-7)
US Pennsylvania Worker and Community Right-to-Know Law	Crystalline Silica (CAS 14808-60-7)
US Rhode Island RTK	Crystalline Silica (CAS 14808-60-7)
US California Proposition 65	WARNING: This product contains a chemical known to the State of California to cause cancer.
US - California Proposition 65 - CRT: Listed date/Carcinogenic substance	US - California Proposition 65 - CRT: Listed date/Carcinogenic substance Listed: October 1, 1988

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: OTHER INFORMATION

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. All information and recommendations concerning this product is based on tests and data believed to be reliable, however, it is the user's responsibility to determine the safety, toxicity and suitability for the user's own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular conditions exist or because of applicable laws or government regulations.