

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION			
<b>Product Name</b>	<b>CS-1</b>	<b>Code</b>	3131
<b>Supplier</b>	Trican Well Service L.P. 5825 N. Sam Houston Parkway, Suite 600 Houston, Texas, 77086 For Product Information/MSDS Call: (281) 716-9152 (8:00 AM – 5:00 PM CST, Monday – Friday)		<b>Revision Date</b>
<b>Product Uses</b>	Clay Stabilizer		<b>Supersedes Date</b>
<b>24 Hour Emergency Number</b>	For Chemical Emergency Spill, Leak, Fire, Exposure or Accident Call CHEMTREC Day or Night  Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-527-3887 (collect calls accepted)		<b>Original Creation</b>
			January 9, 2012

SECTION 2. HAZARDS IDENTIFICATION	
<b>Hazard Summary</b>	CAUTION.  Irritating to eyes. May be irritating to skin and respiratory tract with prolonged exposure. May be harmful in contact with skin and eyes and if swallowed. May irritate mouth, throat or stomach. Do not ingest. Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mists. Use only in well-ventilated areas.
<b>OSHA Regulatory Status</b>	This product is considered hazardous under OSHA Hazard Communication Standard 29CFR 1910.1200.
<b>Routes of Exposure</b>	Eyes, skin, inhalation and ingestion.
<b>Potential Acute Health Effects</b>	
<b>Eyes Contact</b>	Do not get in contact with eyes. Contact with eyes may cause eye irritation.
<b>Skin Contact/Absorption</b>	Avoid prolonged contact with skin. Prolonged exposure may cause skin irritation.
<b>Inhalation</b>	Avoid breathing vapors or spray mists. May cause irritation of respiratory tract.
<b>Ingestion</b>	Do not ingest. Ingestion may cause gastrointestinal irritation.
<b>Medical Conditions Aggravated by Exposure</b>	Not available
	<i>See also Toxicological Information (Section 11)</i>
<b>Additional Remarks</b>	None

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS			
<b>Name</b>	<b>CAS #</b>	<b>% (wt)</b>	
Propylene glycol	57-55-6	0-20	
Inorganic salts	Proprietary	0-30	
Surfactant	Proprietary	0-5	
Blend	Proprietary	12-25	

SECTION 4. FIRST AID MEASURES	
<b>Eye Contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. If wearing contact lenses, do NOT delay irrigation by trying to remove lens. If irritation develops and persists, seek medical attention.
<b>Skin Contact</b>	Rinse contaminated areas immediately with plenty of water while removing contaminated clothing. Continue rinsing for at least 15 minutes. For a large splash, flood body under a shower. Seek medical attention if symptoms develop and persist.
<b>Inhalation</b>	Remove person to fresh air. Provide oxygen or artificial respiration if necessary. Seek prompt medical attention if symptoms persist.

<b>Ingestion</b>	Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of material into lungs. If conscious, have person rinse mouth with a small amount of water. Never give anything by mouth to an unconscious person. Seek medical attention if symptoms develop or persist.
<b>Notes to Physician</b>	Treat symptomatically. Keep person under observation.
<b>Additional Remarks</b>	None

### SECTION 5. FIRE FIGHTING MEASURES

<b>Conditions of Flammability</b>	Not expected to be flammable.
<b>Extinguishing Media</b>	Use dry chemical, carbon dioxide, foam or water fog. Do not use solid water stream as it may scatter material and spread the fire. Water spray may be used to cool containers exposed to fire conditions.
<b>Protection of Firefighters</b>	As in any fire, wear full fire fighting gear, including NIOSH-approved positive pressure self-contained breathing apparatus.
<b>Hazardous Combustion Products</b>	Carbon oxides and metal oxides.
<b>Sensitivity to Static Discharge</b>	Not expected.
<b>Additional Remarks</b>	None

### SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Isolate hazard area and restrict access. Try to work upwind of spill. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Shut off leak only if it can be done safely.
<b>Environmental Precautions</b>	Prevent substance from entering natural bodies of water and sewer systems. Spilled product may pose a risk to the aquatic ecosystem if released.
<b>Clean Up Methods</b>	Move containers from spill area. Absorb small spills with an inert material. For large spills, contain with dikes and collect spillage by pumping off or absorbing with noncombustible material (e.g., sand, earth, vermiculite or diatomaceous earth). Place residues in a suitable, covered and properly labeled container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.
<b>Additional Remarks</b>	Waste must be disposed of in accordance with federal, provincial and local environmental control regulations.

### SECTION 7. HANDLING AND STORAGE

<b>Equipment</b>	Locate safety shower and eyewash station in the immediate use area.
<b>Fire Prevention</b>	Keep away from heat, open flames, sparks and other sources of ignition.
<b>Worker Contact</b>	Wear appropriate personal protective equipment. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use only with adequate ventilation. Maintain good personal hygiene. Do not smoke, eat or drink when handling this product. Wash thoroughly after handling product and before eating, drinking or smoking.
<b>Storage Requirements</b>	Store in a cool, dry and well-ventilated area, away from incompatible materials. Keep container tightly closed when not in use. Store in a cool, dry and well ventilated area, away from heat and ignition sources. Keep containers tightly closed. Store out of direct sunlight and on an impermeable floor.
<b>Additional Remarks</b>	None

### SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

<b>Exposure Guidelines / Limits</b>	ACGIH TLV: Not established OSHA PEL: Not established
<b>Exposure Guideline / Limits for Components</b>	
Propylene glycol	AIHA TWA: 10mg/m <sup>3</sup> (8hr) OSHA PEL: TWA Not established
Please consult with local authorities for acceptable local exposure limits since values can vary from jurisdiction to jurisdiction.	
<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations below their respective allowable limits. Ensure that eyewash stations and safety showers are near the work location. For entry into confined spaces (e.g., bulk storage tanks), a proper confined space entry procedure

must be followed, including ventilation and testing of tank.

### Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.

- Respirator** In poorly ventilated areas or emergency situations, use a NIOSH-approved air-purifying mask equipped with organic vapor cartridges.
- Hands** Chemical-resistant gloves, such as butyl rubber, nitrile or neoprene gloves.
- Eyes** Chemical safety goggles and/or face shield if splashing may occur during handling.
- Body** Wear long sleeves and pants of an impervious material to prevent prolonged or repeated skin contact.
- Feet** Steel-toed, chemical-resistant boots.
- Other** Emergency eyewash fountains and safety showers should be in the immediate vicinity of any potential exposure.

### Protective Clothing (Pictograms)



Additional Remarks

None

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear light amber liquid
Odor	Characteristic
Odor Threshold	Not available
Specific Gravity	1.285-1.340
Flashpoint	Not available
Lower Flammable Limit	Not available
Upper Flammable Limit	Not available
Autoignition Temperature	Not available
Vapor Density (air=1)	Not available
Vapor Pressure	Not available
Evaporation Rate	Not available
Boiling Point	Not available
Freezing / Melting Point	Not available
Pour Point	Not available
pH	4.0 – 4.5 (@ 1% aq. Soln)
Viscosity	Not available
Solubility in Water	Soluble
Coefficient of Water/Oil	Not available
Additional Remarks	None

## SECTION 10. STABILITY AND REACTIVITY DATA

Chemical Stability	Stable
Hazardous Polymerization	Will not occur
Sensitivity to Mechanical Impact	No
Incompatible Material	Strong oxidizing agents.
Conditions of Reactivity	Extreme heat, open flames, sparks and any other ignition sources.
Hazardous Decomposition Products	Not available
Additional Remarks	None

## SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity	Not available
Acute Toxicity for Components	
Propylene glycol	LD50 (oral, rat): 21800 mg/kg LD50 (dermal, rabbit): 20800 mg/kg
Effects of Acute Exposure	See Hazards Identification (Section 2)
Effects of Chronic Exposure	Not expected
Irritancy of Product	See Hazards Identification (Section 2)

<b>Skin Sensitization</b>	Not expected
<b>Respiratory Sensitization</b>	Not expected
<b>Carcinogenicity</b>	No components listed as carcinogenic by ACGIH, IARC, OSHA or NTP.
<b>Reproductive Toxicity</b>	Not expected
<b>Teratogenicity &amp; Embryotoxicity</b>	Not expected
<b>Mutagenicity</b>	Not expected
<b>Synergistic Products/Effects</b>	None expected
<b>Additional Remarks</b>	None

### SECTION 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Not available
<b>Aquatic Toxicity for Components</b> Propylene glycol	<b>Freshwater Fish:</b> 96 hr LC50 Pimephales promelas: 54,900 mg/L <b>Water Flea:</b> 48 hr EC50 Daphnia magna: 34,400 mg/L <b>Microtox:</b> 30 min EC50 Photobacterium phosphoreum: 26800 mg/L
<b>Degradability</b>	Not available
<b>Bioaccumulation</b>	Not available
<b>Mobility</b>	Not available
<b>Additional Remarks</b>	Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. May be harmful to aquatic life.

### SECTION 13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal whether it meets RCRA criteria for hazardous waste. Dispose of in accordance with all applicable federal, state and local regulations.

**Additional Remarks** None

### SECTION 14. TRANSPORT INFORMATION

<b>DOT Classification</b>	Shipping Name Not regulated for Transportation	
	Hazard Class (subsidiary class)	
	ID Number	
	Packing Group	
<b>ICAO/IATA</b>	Shipping Name Not regulated for Transportation	
	Hazard Class (subsidiary class)	
	ID Number	
	Packing Group	
<b>IMDG</b>	Shipping Name Not regulated for Transportation	
	Hazard Class (subsidiary class)	
	ID Number	
	Packing Group	
<b>TDG Classification</b>	Shipping Name Not regulated for Transportation	
	Hazard Class (subsidiary class)	
	ID Number	
	Packing Group	
<b>Marine Pollutant</b>		
<b>Emergency Response Guide</b>		
<b>Additional Remarks</b>	None	

**SECTION 15. REGULATORY INFORMATION**

<b>Environmental Protection Agency</b>	<b>Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 302 Extremely Hazardous Substance:</b> No		
	<b>Sections 311 and 312:</b> Acute: Yes Chronic : No Fire: No Pressure: No Reactivity: No		
	<b>Section 313 Reportable Ingredients:</b>		
	<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
	None		
	<b>CERCLA Hazardous Ingredients &amp; Reportable Quantity:</b> None		
<b>TSCA Inventory Status</b>	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory.		
<b>Additional Remarks</b>	None		

**SECTION 16. OTHER INFORMATION**

<b>NFPA Rating</b>	Health: 1 Flammability: 0 Instability: 0 Special: none		
<b>HMIS Rating</b>	Health: 1 Flammability: 0 Reactivity: 0 Other: none <i>0=Insignificant 1 = Slight 2= Moderate 3= High 4 = Extreme * = chronic</i>		
<b>Revisions</b>	New Issue		
<b>Prepared by</b>	Trican Well Service Corporate Health, Safety & Environment Department (281)-716-9369		
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END OF MATERIAL SAFETY DATA SHEET