HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **CAS-1**

Revision Date: 04-Jan-2011

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: CAS-1
Synonyms: None
Chemical Family: Blend
Application: Anti-sludging Agent

Manufacturer/Supplier
Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By
Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Alkyl aryl sulfonic acid	Proprietary	60 - 100%	Not applicable	Not applicable
Sulfuric acid	7664-93-9	0.1 - 5%	0.2 mg/m^3	1 mg/m^3
Methanol	67-56-1	10 - 30%	200 ppm (S)	200 ppm

3. HAZARDS IDENTIFICATION

Hazard Overview
May cause eye, skin, and respiratory burns. May cause headache, dizziness, and other central nervous system effects. May be fatal if swallowed. May cause blindness. Potential carcinogen. Flammable.

4. FIRST AID MEASURES

Inhalation
If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin
In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes
In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion
Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician
Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	54
Flash Point/Range (C):	12
Flash Point Method:	Not Determined
Autoignition Temperature (F):	869
Autoignition Temperature (C):	465
Flammability Limits in Air - Lower (%):	1
Flammability Limits in Air - Upper (%):	36.5

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards May be ignited by heat, sparks or flames. Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 3, Flammability 2, Reactivity 2
HMIS Ratings: Health 3, Flammability 2, Reactivity 2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid breathing vapors. Avoid contact with eyes, skin, or clothing. Ground and bond containers when transferring from one container to another. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from alkalis. Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Organic vapor/acid gas respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Orangish brown

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Characteristic
pH:	1.6 - 2.2
Specific Gravity @ 20 C (Water=1):	1.01
Density @ 20 C (lbs./gallon):	8.41
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	> 149
Boiling Point/Range (C):	> 65
Freezing Point/Range (F):	-31
Freezing Point/Range (C):	-35
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers. Strong alkalis. Sulfides. Cyanides.
Hazardous Decomposition Products	Formaldehyde. Hydrogen sulfide. Oxides of sulfur. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	Causes severe respiratory burns. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin burns. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.
Eye Contact	May cause eye burns.
Ingestion	May be fatal or cause blindness if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage. Contains sulfuric acid, a potential carcinogen.

Other Information None known.

Toxicity Tests

Oral Toxicity: Not determined

Dermal Toxicity: Not determined

Inhalation Toxicity: Not determined

Primary Irritation Effect: Not determined

Carcinogenicity Not determined

Genotoxicity: Not determined

Reproductive / Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined

Persistence/Degradability Not determined

Bio-accumulation Not determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

UN2924,Flammable Liquid, Corrosive, N.O.S.(Contains Methanol, Alkyl Aryl Sulfonic Acid), 3, (8), II, (12 C)
NAERG 132

Canadian TDG
Flammable Liquid, Corrosive, N.O.S.(Contains Methanol, Alkyl Aryl Sulfonic Acid), 3, (8), UN2924, II, (12 C)

ADR

UN2924,Flammable Liquid, Corrosive, N.O.S.(Contains Methanol, Alkyl Aryl Sulfonic Acid), 3, (8), II

Air Transportation

ICAO/IATA

UN2924,Flammable Liquid, Corrosive, N.O.S., 3, (8), II
(Contains Methanol, Alkyl Aryl Sulfonic Acid Solution)

Sea Transportation

IMDG

UN2924,Flammable Liquid, Corrosive, N.O.S.(Contains Methanol, Alkyl Aryl Sulfonic Acid), 3, (8), II, (12 C)
EmS F-E, S-C

Other Shipping Information

Labels: Flammable Liquid
Corrosive

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard
Chronic Health Hazard
Fire Hazard

EPA SARA (313) Chemicals This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372:
Methanol//67-56-1

EPA CERCLA/Superfund Reportable Spill Quantity EPA Reportable Spill Quantity is 1319 Gallons based on Methanol (CAS: 67-56-1).

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:

Ignitability D001
Corrosivity D002

California Proposition 65 The California Proposition 65 regulations apply to this product.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class

B2 Flammable Liquids
D1A Very Toxic Materials
E Corrosive Material

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

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*****END OF MSDS*****