

MATERIAL SAFETY DATA SHEET**Product Trade Name:** CAS-1**Revision Date:** 09-Oct-2014**Revision Number:** 6**SECTION 1. Product and Company Identification****Product Identifier**

Product Trade Name: CAS-1
Synonyms: None
Chemical Family: Blend
Internal ID Code HM005716

Product Use

Application: Anti-sludging Agent

Manufacturer's Name and Contact Details

Name and Address Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

Emergency Telephone Number (281) 575-5000

Prepared By

Chemical Compliance
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SECTION 2. Hazard(s) Identification**WHMIS Classification**

WHMIS Hazard Class B2 Flammable Liquids
D1A Very Toxic Materials
D2A Very Toxic Materials
E Corrosive Material

WHMIS Symbol(s)**Summary of hazards of the product****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.

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
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Alkyl aryl sulfonic acid	Proprietary	60 - 100%	8979	September 30, 2014
Methanol	67-56-1	10 - 30%	Not applicable	Not applicable
Sulfuric acid	7664-93-9	1 - 5%	Not applicable	Not applicable

SECTION 4. First aid measures

Description of first aid measures

Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration (AR), preferably mouth-to-mouth. If breathing is difficult, oxygen should be given by trained personnel. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 30 minutes while holding eyelids open and get medical attention immediately after flushing.

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If breathing has stopped, trained personnel should begin rescue breathing / artificial respiration (AR) immediately. If the heart has stopped, trained personnel should begin CPR immediately. Obtain medical attention immediately. If vomiting occurs naturally, have victim lie on their side, in recovery position, to reduce risk of aspiration, and obtain medical attention immediately.

Most important symptoms and effects, both acute and delayed

May cause eye and skin burns. May cause headache, dizziness, and other central nervous system effects. Potential carcinogen.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

SECTION 5. Fire Fighting Measures

Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance or mixture

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.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Hazardous combustion products

Formaldehyde. Hydrogen sulfide. Oxides of sulfur. Carbon monoxide and carbon dioxide.

SECTION 6. Accidental release measures

Personal precautions and emergency procedures

Protective Equipment

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.

SECTION 7. Handling and Storage

Precautions for safe handling

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. If ventilation is inadequate, vapors can spread from open containers of the controlled product and may flash back, causing a fire, if they contact an ignition source.

Conditions for safe storage and Incompatible materials for storage

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

SECTION 8: Exposure Controls/Personal Protection

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Alkyl aryl sulfonic acid	Proprietary	Not available	Not available
Methanol	67-56-1	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm
Sulfuric acid	7664-93-9	TWA: 0.2 mg/m ³	1 mg/m ³

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area.

Personal Protective Equipment (PPE)**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.

SECTION 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State: Liquid
Odor: Alcohol

Color: Orangish brown
Odor Threshold: No information available

Property
Remarks/ - Method

Values

pH:

1.6 - 2.2

pH Concentration of Solution:

No information available.

Freezing Point/Range

-35 °C

Melting Point/Range

No information available

Boiling Point/Range (C):

> 65 °C

Flash Point/Range (C):

12 °C

Flash Point Method:

PMCC

Autoignition Temperature (C):

465

Flammability Limits in Air - Lower (%):

1

Flammability Limits in Air - Upper (%):

36.5

Evaporation Rate (Butyl Acetate=1):

No information available.

Vapor Pressure @ 20 C (mmHg):

No information available.

Vapor Density (Air=1):	No information available.
Specific Gravity @ 20 C (Water=1):	1.01
Solubility in Water (g/100ml):	Soluble
Solubility in other solvents	No information available.
Partition Coefficient/n-Octanol/Water:	No information available.
Decomposition Temperature (C):	No information available.
Viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available
Other Information	
Molecular Weight (g/mole):	No information available.
VOC Content (%)	No information available

SECTION 10. Stability and Reactivity

Conditions of Reactivity

Conditions to Avoid

Keep away from heat, sparks and flame.

Hazardous Polymerization:

Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong oxidizers. Strong alkalis. Sulfides. Cyanides.

Hazardous Decomposition Products

Formaldehyde. Hydrogen sulfide. Oxides of sulfur. Carbon monoxide and carbon dioxide.

SECTION 11. Toxicological Information

Routes of entry

Eye or skin contact, inhalation.

Information on Toxicological Effects

Acute effects from exposure

Product Information

Inhalation

Under certain conditions of use, some of the product ingredients may cause the following:
Causes severe respiratory burns. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact

May cause eye burns.

Skin Contact

May cause skin burns. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.

Ingestion

May be fatal or cause blindness if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

Chronic effects from exposure

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.

Irritancy of product

Irritation

Corrosive to eyes Corrosive to skin

Sensitization of product
Sensitization

Not confirmed to cause skin or respiratory sensitization.

Mutagenicity

Mutagenic Effects

Not regarded as mutagenic.

Carcinogenicity

Carcinogenic Effects

Contains sulfuric acid, a potential carcinogen.

Reproductive toxicity

Reproductive Toxicity

This product does not contain any known or suspected reproductive hazards

Teratogenicity/embryotoxicity

Teratogenic

Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.

Toxicologically synergistic material**Methanol:** In animals, high concentrations can increase the toxicity of other chemicals, particularly liver toxins like carbon tetrachloride. Ethanol significantly decreases the toxicity, because it competes for the same metabolic enzymes.**Acute Toxicity**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Alkyl aryl sulfonic acid	Proprietary	500 mg/kg (Rat) 650 mg/kg (Rat) 1260 mg/kg (Rat)	No data available	No data available
Methanol	67-56-1	> 1187 - 2769 mg/kg (Rat) 3000 mg/kg (Monkey) 300 mg/kg (Human)	15800 mg/kg (Rabbit) 393 mg/kg (Primate)	87.5 mg/L (Rat) 6h vapour 128.2 mg/L (Rat) 4h vapour 83.2 mg/L (Rat) 4 h 64000 ppm (Rat) 4 h 10 mg/L (Human)
Sulfuric acid	7664-93-9	2140 mg/kg (Rat)	No data available	347 ppm (Rat) 1 h 510 mg/m ³ (Rat) 2 h 295 mg/m ³ (Rat) 4h 375 mg/m ³ (Rat) 4h 160 mg/m ³ (Mouse) 4h 15 mg/m ³ (Guinea pig) 4h 9 mg/m ³ (Guinea pig) 4h

SECTION 12. Ecological Information**Toxicity**

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Alkyl aryl sulfonic acid	Proprietary	No information available	No information available	No information available	No information available
Methanol	67-56-1	EC50(96h): ca. 22000 mg/L (Pseudokirchnerella subcapitata, Growth rate)	LC50: 28200 mg/l (Pimephales promelas) LC50(96h): 12700 – 15400 mg/L (Lepomis macrochirus) 200 hr NOEC for % Embryo-cardiovascular for stage 2 = 15800 mg/L	IC50(3h): > 1000 mg/L (activated sludge)	EC50(96h): 18260 mg/L (Daphnia magna) NOEC(21d): 122 mg/L (Daphnia magna, Reproduction)

Sulfuric acid	7664-93-9	EC50(72h): > 100 mg/L (growth rate) (Desmodesmus subspicatus)	LC50: >500 mg/l (Brachydanio rerio) LC50(96h) > 16 and < 28 mg/L (Lepomis macrochirus) NOEC(65d): 0.025 mg/L (fry growth) (Jordanella floridae) NOEC(chronic): 0.31 mg/L (larval development) (Salvelinus fontinalis)	NOEC(21d): 6.61 pH (total bacteria) NOEC(37d): ca. 26 g/L (activated sludge, respiration rate) (Similar substance)	EC50(48h): 29 mg/L (Daphnia magna) EC50(48h): > 100 mg/L (Daphnia magna) NOEL(chronic): 0.15 mg/L (mortality) (Tanytarsus dissimilis)
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Persistence and Degradability

No information available

Bioaccumulation potential

No information available

Substances	Log Pow
Methanol	-0.77 BCF 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)

Mobility in soil

No information available

Results of PBT and vPvB assessment

No information available.

Substances	PBT and vPvB assessment
Methanol	Not PBT/vPvB
Sulfuric acid	Not PBT/vPvB

Other adverse effects**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

SECTION 13. Disposal Considerations
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Disposal Method

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

SECTION 14. Transport Information
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Canadian TDG u10

UN Number:	UN2924
UN Proper Shipping Name:	Flammable Liquid, Corrosive, N.O.S. (Contains Methanol, Alkyl Aryl Sulfonic Acid)
Transport Hazard Class(es):	3
Subsidiary Hazard:	(8)
Packing Group:	II
EMS:	EmS F-E, S-C

IATA/ICAO

UN Number:	UN2924
UN Proper Shipping Name:	Flammable Liquid, Corrosive, N.O.S. (Contains Methanol, Alkyl Aryl Sulfonic Acid)
Transport Hazard Class(es):	3
Subsidiary Hazard:	(8)
Packing Group:	II

IMDG/IMO

UN Number: UN2924
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S. (Contains Methanol, Alkyl Aryl Sulfonic Acid)
Transport Hazard Class(es): 3
Subsidiary Hazard: (8)
Packing Group: II
EMS: EmS F-E, S-C

Special Precautions for User: None

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

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

SECTION 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Regulations**Canadian DSL Inventory**

All components listed on inventory or are exempt.

WHMIS Hazard Class

B2 Flammable Liquids
D1A Very Toxic Materials
D2A Very Toxic Materials
E Corrosive Material

WHMIS Symbol(s)**US Regulations****US TSCA Inventory**

All components listed on inventory or are exempt.

SECTION 16. Other Information**Preparation Information****Prepared By**

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Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date:

09-Oct-2014

Not applicable

Additional information

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

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

Key or legend to abbreviations and acronyms

WHMIS: Workplace Hazardous Materials Information System

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

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