

MATERIAL SAFETY DATA SHEET

Product Trade Name: AS-5 ANTI-SLUDGING AGENT

Revision Date: 07-Jan-2015

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: AS-5 ANTI-SLUDGING AGENT
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
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Dodecylbenzene sulfonic acid	27176-87-0	60 - 100%	Not applicable	Not applicable
Isopropanol	67-63-0	10 - 30%	TWA: 200 ppm STEL: 400 ppm	400 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 harmful if swallowed. May be absorbed through the skin. May cause allergic skin reaction. Repeated overexposure may cause liver and kidney effects. 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.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	95
Flash Point/Range (C):	35
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

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

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

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 3, Reactivity 0
HMIS Ratings: Health 3, Flammability 3, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.

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

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

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

Storage Information Store in a well ventilated area. Keep container closed when not in use. Store away from alkalis. Store away from oxidizers. Keep from heat, sparks, and open flames. Product has a shelf life of 24 months. Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor/acid gas respirator with a dust/mist filter.
Hand Protection	Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.4 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.
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:	Dark brown
Odor:	Alcohol
pH:	1
Specific Gravity @ 20 C (Water=1):	1.03
Density @ 20 C (lbs./gallon):	8.58
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	36
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 (centistokes):	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.

Hazardous Decomposition Products

Oxides of sulfur. Carbon monoxide and carbon dioxide.

Additional Guidelines

Not Applicable

11. TOXICOLOGICAL INFORMATION**Principle Route of Exposure**

Eye or skin contact, inhalation.

Symptoms related to exposure**Acute Toxicity****Product Information****Inhalation**

Under certain conditions of use, some of the product ingredients may cause the following:
Causes severe respiratory irritation. 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

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

Ingestion

Causes burns of the mouth, throat and stomach. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic Effects/Carcinogenicity

Repeated overexposure may cause liver and kidney effects.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dodecylbenzene sulfonic acid	27176-87-0	500 mg/kg (Rat)	No data available	No data available
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12800 mg/kg (Rat) 12870 mg/kg (Rabbit) 16.4 mL/kg (Rabbit) 6280 mg/kg (Rabbit)	72.6 mg/L (Rat) 4h >10000 ppm (Rat) 6h

12. ECOLOGICAL INFORMATION**Ecotoxicological Information****Ecotoxicity Product****Acute Fish Toxicity:** Not determined**Acute Crustaceans Toxicity:** Not determined**Acute Algae Toxicity:** Not determined**Ecotoxicity Substance**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Dodecylbenzene sulfonic acid	27176-87-0	EC50(72h): 29 mg/L (Pseudokirchneriella subcapitata)	LC50(96h): 10.8 mg/L (Oncorhynchus mykiss) LC50(96h): 3.5 - 10 mg/L (Brachydanio rerio) LC50(96h): 1 mg/L (Gadus morhua)	LC50: 0.9 mg/L (Microcystis)	EC50(48h): 5.88 mg/L (Daphnia magna)

Isopropanol	67-63-0	EC50(72h): > 1000 mg/l(Desmodesmus subspicatus) EC50(7d): 1800 mg/L (mean extinction value) (Scenedesmus quadricauda)	LC50(96h): 9640 mg/l (Pimephales promelas) LC50(7d): 7060 mg/L (Poecilia reticulata)	TT(16h): 1050 mg/L (Pseudomonas putida)	EC50(48h): 13299 mg/l (Daphnia magna) EC50(24h): > 10000 mg/L (Daphnia magna)
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12.2. Persistence and degradability

Product is biodegradable

Substances	CAS Number	Persistence and Degradability
Dodecylbenzene sulfonic acid	27176-87-0	No information available
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)

12.3. Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Dodecylbenzene sulfonic acid	27176-87-0	No information available
Isopropanol	67-63-0	0.05 @ 25°C

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Isopropanol	Not PBT/vPvB

12.6. Other adverse effects

13. DISPOSAL CONSIDERATIONS

Disposal Method

Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging

Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. TRANSPORT INFORMATION

US DOT

UN Number: UN2924
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S. (Contains Isopropanol, Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 3
Subsidiary Hazard: (8)
Packing Group: III
NAERG: NAERG 132

US DOT Bulk

DOT (Bulk) Not applicable

Canadian TDG ul0

UN Number: UN2924
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S. (Contains Isopropanol, Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 3
Subsidiary Hazard: (8)

Packing Group: III

IMDG/IMO

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

IATA/ICAO

UN Number: UN2924
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S. (Contains Isopropanol, Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 3
Subsidiary Hazard: (8)
Packing Group: III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

Special Precautions for User: None

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: Isopropanol//67-63-0

EPA CERCLA/Superfund Reportable Spill Quantity EPA Reportable Spill Quantity is 155 Gallons based on Dodecylbenzene sulfonic acid (CAS: 27176-87-0).

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 All components listed do not apply to the California Proposition 65 Regulation.

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 or are exempt.

WHMIS Hazard Class
B2 Flammable Liquids
E Corrosive Material
D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS

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.

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