HALLIBURTON

SAFETY DATA SHEET

Product Trade Name: **ANHIB II INHIBITOR**

Revision Date: 17-Apr-2015 **Revision Number:** 13

1. Identification

1.1. Product Identifier

Product Trade Name: ANHIB II INHIBITOR
Synonyms: None
Chemical Family: Blend
Internal ID Code HM000066

1.2 Recommended use and restrictions on use

Application: Corrosion Inhibitor
Uses Advised Against No information available

1.3 Manufacturer's Name and Contact Details

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

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

1.4. Emergency telephone number

Emergency Telephone Number (281) 575-5000

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Serious Eye Damage / Eye Irritation	Category 1 - H318
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Acute Aquatic Toxicity	Acute 3 - H402
Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard Pictograms

Signal Word Danger

Hazard Statements

H226 - Flammable liquid and vapor
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H402 - Harmful to aquatic life

Precautionary Statements

Prevention

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233 - Keep container tightly closed
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical/ventilating/lighting/equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use water spray for extinction

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	CAS Number
Ammonium bisulfite	10192-30-0
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4
Trimethylammonium chloride	593-81-7
Sodium phosphate, tribasic	7601-54-9
Isopropanol	67-63-0

2.3 Hazards not otherwise classified
None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Ammonium bisulfite	10192-30-0	10 - 30%	Eye Irrit. 2A (H319) STOT SE 3 (H335) Aquatic Acute 3 (H402)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	10 - 30%	Eye Corr. 1 (H318)
Trimethylammonium chloride	593-81-7	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2B (H320)
Sodium phosphate, tribasic	7601-54-9	1 - 5%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) STOT SE 3 (H335)
Isopropanol	67-63-0	5 - 10%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. Description of first aid measures
Inhalation If inhaled, move victim to fresh air and seek medical attention.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt 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.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed
Causes severe eye irritation which may damage tissue. May cause respiratory irritation.

4.3. Indication of any immediate medical attention and special treatment needed
Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media
Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture
Special Exposure Hazards

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

5.3 Special protective equipment and precautions for fire-fighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment.
See Section 8 for additional information

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
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

7.1. Precautions for Safe Handling
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.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store away from oxidizers. Store in a cool well ventilated area. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Ammonium bisulfite	10192-30-0	Not applicable	Not applicable
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	Not applicable	Not applicable
Trimethylammonium chloride	593-81-7	Not applicable	Not applicable
Sodium phosphate, tribasic	7601-54-9	Not applicable	Not applicable
Isopropanol	67-63-0	TWA: 400 ppm	TWA: 200 ppm STEL: 400 ppm

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

8.3 Individual protection measures, such as personal protective equipment
Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Organic vapor respirator.
In high concentrations, supplied air respirator or a self-contained breathing apparatus.

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

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color:**	Red
Odor:	Pungent	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	4.5 – 5.2
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	23 °C / 74 °F PMCC
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	89 mmHg @ 20C
Vapor Density	No data available
Specific Gravity	1.16
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid
Keep away from heat, sparks and flame.

10.5. Incompatible Materials
Strong oxidizers.

10.6. Hazardous Decomposition Products
Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

11. Toxicological Information

11.1 Information on likely routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics
Acute Toxicity

Inhalation May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact Causes severe eye irritation which may damage tissue.

Skin Contact May cause skin irritation.

Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea. Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium bisulfite	10192-30-0	11200 mg/kg 2610 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rat) (similar substance)	> 5.5 mg/L (Rat) 4h (similar substance)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No data available	No data available	No data available
Trimethylammonium chloride	593-81-7	3090 mg/kg (Rat)	> 5000 mg/kg (Rat) (similar substance)	No data available
Sodium phosphate, tribasic	7601-54-9	2000 mg/kg (Rat)	2 mg/kg (Rabbit) > 2000 mg/kg (Rat) (similar substance)	2.16 mg/L (Rat) 1h > 0.83 mg/L (Rat) (similar substance)
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12,800 mg/kg (Rat) 12,870 mg/kg (Rabbit) 6280 mg/kg (Rabbit)	72.6 mg/L (Rat) 4h > 10,000 mg/L (Rat) 6h

Substances	CAS Number	Skin corrosion/irritation
Ammonium bisulfite	10192-30-0	Not irritating to skin in rabbits.
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No data of sufficient quality are available.
Trimethylammonium chloride	593-81-7	Causes skin irritation.
Sodium phosphate, tribasic	7601-54-9	Causes moderate skin irritation. (Rabbit)
Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Ammonium bisulfite	10192-30-0	Eye, rabbit: Causes mild eye irritation. (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	May cause moderate to severe eye irritation.
Trimethylammonium chloride	593-81-7	Causes eye irritation
Sodium phosphate, tribasic	7601-54-9	Causes severe eye irritation which may damage tissue.
Isopropanol	67-63-0	Causes severe eye irritation. (Rabbit)

Substances	CAS Number	Skin Sensitization
Ammonium bisulfite	10192-30-0	Did not cause sensitization on laboratory animals (mouse) (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	Not regarded as a sensitizer. (similar substances)
Sodium phosphate, tribasic	7601-54-9	Did not cause sensitization on laboratory animals (similar substances)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Ammonium bisulfite	10192-30-0	No information available
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	No information available
Sodium phosphate, tribasic	7601-54-9	No information available
Isopropanol	67-63-0	No information available

Substances	CAS Number	Mutagenic Effects
Ammonium bisulfite	10192-30-0	Did not show mutagenic effects in animal experiments (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	In vitro tests did not show mutagenic effects (similar substances)
Sodium phosphate, tribasic	7601-54-9	Not regarded as mutagenic. In vitro tests did not show mutagenic effects (similar substances)
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Ammonium bisulfite	10192-30-0	Did not show carcinogenic or teratogenic effects in animal experiments (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available.
Trimethylammonium chloride	593-81-7	No information available.
Sodium phosphate, tribasic	7601-54-9	No information available.
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Ammonium bisulfite	10192-30-0	Animal testing did not show any effects on fertility. (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	No data of sufficient quality are available.
Sodium phosphate, tribasic	7601-54-9	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility. (similar substances)
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - single exposure
Ammonium bisulfite	10192-30-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	No significant toxicity observed in animal studies at concentration requiring classification.

Sodium phosphate, tribasic	7601-54-9	May cause disorder and damage to the Respiratory system.
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.

Substances	CAS Number	STOT - repeated exposure
Ammonium bisulfite	10192-30-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	No data of sufficient quality are available.
Sodium phosphate, tribasic	7601-54-9	No significant toxicity observed in animal studies at concentration requiring classification.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Ammonium bisulfite	10192-30-0	Not applicable
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	Not applicable
Trimethylammonium chloride	593-81-7	Not applicable
Sodium phosphate, tribasic	7601-54-9	Not applicable
Isopropanol	67-63-0	Not applicable

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Ammonium bisulfite	10192-30-0	ErC50 (72h) 43.8 mg/L (Desmodesmus subspicatus) (similar substance)	LC50 5000 mg/L (Lepomis macrochirus) LC50 (96h) 681.2 mg/L (Danio rerio) (similar substance) LC50 (96h) 316 mg/L (Leuciscus idus) (similar substance) NOEC (34d) => 316 mg/L (Danio rerio) (similar substance)	EC50 (17h) 410 mg/L (Pseudomonas putida) (similar substance) EC50 (17h) 65 mg/L (Pseudomonas putida) (similar substance)	EC50 (48h) >1000 mg/L (Daphnia magna) EC50 (48 hr) 89 mg/L (Daphnia magna) (similar substance) NOEC (21d) > 10 mg/L (Daphnia magna) (reproduction) (similar substance)
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available	No information available	No information available	No information available
Trimethylammonium chloride	593-81-7	EC50 (96h) 150 mg/L (Desmodesmus subspicatus) (similar substance)	EC50 (48h) 610 mg/L (Leuciscius idus) (similar substance) LC50 (48h) 1000 mg/L (Oryzias latipes) (similar substance)	No information available	EC50 (48h) 140 mg/L (Daphnia magna) (similar substance)
Sodium phosphate, tribasic	7601-54-9	EC50 (72h) > 100 mg/L (Desmodesmus subspicatus)	LC50 (96h) > 100 mg/L (Oncorhynchus mykiss)	NOEC (3h) > 1000 mg/L (Activated sludge)	EC50 (48h) > 100 mg/L (Daphnia magna)

Isopropanol	67-63-0	EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (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) 13,299 mg/L (Daphnia magna) EC50 (24h) > 10,000 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Ammonium bisulfite	10192-30-0	The methods for determining biodegradability are not applicable to inorganic substances.
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	(92% @ 14d) (similar substance)
Sodium phosphate, tribasic	7601-54-9	No information available
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Ammonium bisulfite	10192-30-0	No information available
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	-2.73
Sodium phosphate, tribasic	7601-54-9	No information available
Isopropanol	67-63-0	0.05

12.4. Mobility in soil

Substances	CAS Number	Mobility
Ammonium bisulfite	10192-30-0	No information available
3-(Tridecyloxy)-2-hydroxypropyltrimethylammonium, chloride	68334-55-4	No information available
Trimethylammonium chloride	593-81-7	No information available
Sodium phosphate, tribasic	7601-54-9	No information available
Isopropanol	67-63-0	KOC = 1.5

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

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

US DOT

UN Number: UN1993

UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Isopropanol)

Transport Hazard Class(es): 3

Packing Group: III

Environmental Hazards: Not applicable

NAERG: NAERG 128

US DOT Bulk

DOT (Bulk)	Not applicable

Canadian TDG

UN Number:	UN1993
UN Proper Shipping Name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number:	UN1993
UN Proper Shipping Name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable
EMS:	EmS F-E, S-E

IATA/ICAO

UN Number:	UN1993
UN Proper Shipping Name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
Special Precautions for User: None

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 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 1921 Gallons based on Ammonium bisulfite (CAS: 10192-30-0).
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
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	Product contains one or more components not listed on the inventory.

16. Other information

Preparation Information

Prepared By	Chemical Stewardship Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com
Revision Date:	17-Apr-2015
Reason for Revision	Update to Format SECTION: 2

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 Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

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End of Safety Data Sheet