HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **HII-500M CORROSION INHIBITOR INTENSIFIER**

Revision Date: 10-Aug-2015

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: HII-500M CORROSION INHIBITOR INTENSIFIER
Synonyms: None
Chemical Family: Blend
Application: Intensifier

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

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Antimonate salt	Proprietary	30 - 60%	0.5 mg/m^3	0.5 mg/M3
Ethylene glycol	107-21-1	30 - 60%	Ceiling: 100 mg/m^3 (aerosol only)	Ceiling: 50 ppm

3. HAZARDS IDENTIFICATION

Hazard Overview
May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation
If inhaled, move victim to fresh air and seek medical attention.

Skin
In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

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. Give nothing by mouth. Obtain immediate medical attention.

Notes to Physician
Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	> 200
Flash Point/Range (C):	> 93
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	3.2
Flammability Limits in Air - Upper (%):	Not Determined

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

Special Exposure Hazards Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases.

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

NFPA Ratings: Health 2, Flammability 0, Reactivity 0
HMIS Ratings: Health 2, Flammability 0, Reactivity 0

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. Neutralize to pH of 6-8. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

Storage Information Store away from acids. Store in a cool, dry location. Keep container closed when not in use. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

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 with a dust/mist filter. (A2P2/P3)

Hand Protection Chemical-resistant protective gloves (EN 374) Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 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 Normal work coveralls.

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

Other Precautions None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Light yellow
Odor:	Odorless
pH:	11
Specific Gravity @ 20 C (Water=1):	1.42
Density @ 20 C (lbs./gallon):	11.8286
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	> 212 **Min:** > 212
Boiling Point/Range (C):	>100 **Min:** > 100
Freezing Point/Range (F):	16-19
Freezing Point/Range (C):	-7 - -9
Vapor Pressure @ 20 C (mmHg):	< 20
Vapor Density (Air=1):	>1
Percent Volatiles:	69
Evaporation Rate (Butyl Acetate=1):	< 1
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 Temperature over 200 F (93 C).

Incompatibility (Materials to Avoid) Strong acids. Prolonged contact with aluminum.

Hazardous Decomposition Products Carbon monoxide and carbon dioxide. Metal oxides.

Additional Guidelines Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation. Ingestion.

Sympotoms related to exposure

Acute Toxicity

Product Information

Inhalation Under certain conditions of use, some of the product ingredients may cause the following: Vapors given off by heated product may be harmful. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact May cause mild eye irritation.

Skin Contact May cause mild skin irritation. May be absorbed through the skin and contribute to the symptoms listed under ingestion.

Ingestion Harmful if swallowed. May cause abdominal pain, vomiting, nausea, and diarrhea. May cause liver and kidney damage. May affect the heart and cardiovascular system. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

Chronic Effects/Carcinogenicity May cause birth defects. Prolonged or repeated exposure may also cause heart and lung damage. Prolonged or repeated exposure may cause liver, kidney and blood effects.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Antimonate salt	Proprietary	No data available	No data available	No data available
Ethylene glycol	107-21-1	4000 mg/kg (Rat) 7712 mg/kg (Rat) > 10000 mg/kg (Rat) 1670 mg/kg (Cat) 1400 – 1600 mg/kg (Human)	9530 µL/kg (Rabbit) > 3500 mg/kg (Mouse)	> 2.5 mg/L (Rat) 6h (saturated concentration)

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
Antimonate salt	Proprietary	No information available	No information available	No information available	No information available
Ethylene glycol	107-21-1	EC50 6500 - 13000 mg/L (Pseudokirchneriella subcapitata) TGK (8d) > 10000 mg/L (Scenedesmus quadricauda)	LC50 41000 mg/L (Oncorhynchus mykiss) LC50 (96h) 72860 mg/L (Pimephales promelas) NOEC (7d) 15380 mg/L (mortality) (Pimephales promelas)	TTC (16h) > 10000 mg/L (Pseudomonas putida) EC20 (30 m) > 1995 mg/L (activated sludge, domestic) (similar substance)	EC50 46300 mg/L (Daphnia magna) EC50 (48h) >100 mg/L (Daphnia magna) NOEC (7d) 8590 mg/L (reproduction) (Ceriodaphnia dubia)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Antimonate salt	Proprietary	No information available
Ethylene glycol	107-21-1	Readily biodegradable (100% @ 10d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Antimonate salt	Proprietary	No information available
Ethylene glycol	107-21-1	-1.36

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

No information available.

Substances	PBT and vPvB assessment
Ethylene glycol	Not PBT/vPvB

12.6. Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging Follow all applicable national or local regulations. 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: UN3082
UN Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Antimonate Salt)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant

US DOT Bulk

DOT (Bulk) Not applicable

Canadian TDG

UN Number: UN3082
UN Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Antimonate Salt)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant

IMDG/IMO

UN Number: UN3082
UN Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Antimonate Salt)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant
EMS: EmS F-A, S-F

IATA/ICAO

UN Number: UN3082
UN Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Antimonate Salt)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant

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 Chronic Health 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: Ethylene Glycol//107-21-1 Antimony and Compounds//29638-69-5
EPA CERCLA/Superfund Reportable Spill Quantity	EPA Reportable Spill Quantity is 20000 Pounds based on Ethylene glycol (CAS: 107-21-1).
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
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 or are exempt.
WHMIS Hazard Class	D1B Toxic Materials D2A Very 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 Stewardship at 1-580-251-4335.
Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

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