HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **HAI-202**

Revision Date: 12-Mar-2014

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Statement of Hazardous Nature Hazardous according to the criteria of NOHSC, Dangerous Goods according to the criteria of ADG.

Manufacturer/Supplier

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

Product Emergency Telephone
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

Fire, Police & Ambulance - Emergency Telephone
Australia: 000
Papua New Guinea: 000
New Zealand: 111

Identification of Substances or Preparation

Product Trade Name:	HAI-202
Synonyms:	None
Chemical Family:	Blend
UN Number:	, UN2924
Dangerous Goods Class:	3
Subsidiary Risk:	8
Hazchem Code:	2WE
Poisons Schedule:	None Allocated
Application:	Corrosion Inhibitor

Prepared By

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

2. HAZARDS IDENTIFICATION

Hazard Overview May cause eye and skin burns. May cause respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be fatal if swallowed. May cause blindness. May be absorbed through the skin. Repeated overexposure may cause liver and kidney effects. Flammable.

Classification

C - Corrosive.
F - Highly Flammable.
Xn - Harmful.

Risk Phrases

R11 Highly flammable.
R34 Causes burns.
R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases

S16 Keep away from sources of ignition - No Smoking.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45 In case of accident or if you feel unwell, seek medical advice immediately.

S51 Use only in well ventilated areas.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

HSNO Classification

Not Determined

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
Formic acid	64-18-6	10 - 30%	TWA: 5 ppm TWA: 9.4 mg/m^3 STEL: 10 ppm STEL: 19 mg/m^3	STEL: 10 ppm STEL: 19 mg/m^3 TWA: 5 ppm TWA: 9.4 mg/m^3	TWA: 5 ppm STEL: 10 ppm
Methyl formate	107-31-3	1 - 5%	TWA: 100 ppm TWA: 246 mg/m^3 STEL: 150 ppm STEL: 368 mg/m^3	STEL: 150 ppm STEL: 368 mg/m^3 TWA: 100 ppm TWA: 246 mg/m^3	TWA: 100 ppm STEL: 150 ppm
Methanol	67-56-1	1 - 5%	TWA: 200 ppm TWA: 262 mg/m^3 STEL: 250 ppm STEL: 328 mg/m^3	STEL: 250 ppm STEL: 328 mg/m^3 TWA: 200 ppm TWA: 262 mg/m^3	TWA: 200 ppm STEL: 250 ppm

Non-Hazardous Substance to Total of 100%

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

Check for and remove contact lenses if present. 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. Administer 2-3 tablespoons of activated charcoal. Burnt toast can be used if charcoal is unavailable. Obtain medical assistance immediately.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

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

Extinguishing media which must not be used for safety reasons
None known.

Special Exposure Hazards Decomposition in fire may produce toxic gases. Reaction with steel and certain other metals generates flammable hydrogen gas. Do not allow runoff to enter waterways.

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

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. 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 away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Keep from heat, sparks, and open flames. Product has a shelf life of 6 months.

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 Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Positive pressure self-contained breathing apparatus if methanol is released.
Organic vapor respirators have a short service life.

Hand Protection Impervious rubber gloves. Neoprene gloves. Nitrile gloves. Butyl rubber gloves. Vinyl gloves.

Skin Protection Full protective chemical resistant clothing.

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:	Amber
Odor:	Pungent
pH:	2.48
Specific Gravity @ 20 C (Water=1):	1.076
Density @ 20 C (kg/l):	1.03
Bulk Density @ 20 C (kg/M3):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (C):	-15
Pour Point/Range (C):	Not Determined
Flash Point/Range (C):	9
Flash Point Method:	SETA CC
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (g/m^3):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (g/m^3):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined
Vapor Pressure @ 20 C (mmHg):	246.6 - 301.4
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Disperses
Solubility in Solvents (g/100ml):	Not Determined
VOCs (g/l):	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
Decomposition Temperature (C):	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.

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

Additional Guidelines Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure
Acute Toxicity

Inhalation Causes severe respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Excessive inhalation may produce symptoms similar to ingestion.

Eye Contact May cause eye burns.

Skin Contact Causes severe burns. 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 be fatal or cause blindness if swallowed. 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 Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage. Prolonged, excessive exposure may cause erosion of the teeth. May cause birth defects.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Formic acid	64-18-6	730 mg/kg (Rat)	> 2000 mg/kg (Rat) (Similar substance)	7.4 mg/L (Rat) 4h vapour 15 mg/L (Rat) 15m
Methyl formate	107-31-3	475 mg/kg (Rat) 1500 mg/kg (Rat)	> 5000 mg/kg (Rabbit) > 4000 mg/kg (Rat)	> 5.2 mg/L (Rat) 4 h vapour
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) 4h vapour 128.2 mg/L (Rat) 4h vapour 83.2 mg/L (Rat) 4 h 64000 ppm (Rat) 4 h 10 mg/L (Human)

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
Formic acid	64-18-6	EC50: 25 mg/L (Desmodesmus subspicatus) EC50(72h): 1240 mg/L (growth rate) (Pseudokirchnerella subcapitata) (Similar substance)	LC50(96h): 175 mg/L (Lepomis Macrochirus) LC50(96h): 323 mg/L (Danio rerio) (Similar substance) LC50(96h): 1720 mg/L (Scophthalmus maximus) (Similar substance) LC50(96h): 3500 mg/L (Oncorhynchus mykiss)	NOEC(13d): 72 mg/L (activated sludge, domestic)	EC50(48h): 120 mg/L (Daphnia magna) EC50(48h): 540 mg/L (Daphnia magna) EC50(48h): 365 mg/L (Daphnia magna) (Similar substance) LC50(96h): 1308 mg/L (Crangon crangon) (Similar substance) NOEC(21d): >= 100 mg/L (Daphnia magna)
Methyl formate	107-31-3	EC50(72h): 1079 mg/L (growth rate) (Scenedesmus subspicatus)	LC50(96h): 103 mg/L (Danio rerio) LC50(96h): ca. 115 mg/L (Leuciscus idus)	EC50(17h) > 10000 mg/L (Pseudomonas putida)	EC50(48 h) > 500 mg/L (Daphnia magna)
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)

12.2 Persistence and degradability

No information available

Substances	Persistence and Degradability
Formic acid	Readily biodegradable (100 @ 14d)
Methyl formate	Readily biodegradable (93% @ 28d)
Methanol	Readily biodegradable (95-97% @ 20d)

12.3 Bioaccumulative potential

No information available

Substances	Log Pow
Formic acid	-2.1
Methanol	-0.77 BCF 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

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

ADR

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

Air Transportation

ICAO/IATA

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

Sea Transportation

IMDG

UN2924, Flammable Liquid, Corrosive, N.O.S (Contains Methanol, Formic Acid) , 3 , (8) , II , (8.9 C)
EmS F-E, S-C

Other Transportation Information

Labels: Flammable Liquid
Corrosive

15. REGULATORY INFORMATION

Chemical Inventories

Australian AICS Inventory	Product contains one or more components not listed on inventory.
New Zealand Inventory of Chemicals	This product does not comply with NZIOC
US TSCA Inventory	All components listed on inventory or are exempt.
EINECS Inventory	This product, and all its components, complies with EINECS
Classification	C - Corrosive. F - Highly Flammable. Xn - Harmful.
Risk Phrases	R11 Highly flammable. R34 Causes burns. R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
Safety Phrases	S16 Keep away from sources of ignition - No Smoking. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 In case of accident or if you feel unwell, seek medical advice immediately. S51 Use only in well ventilated areas. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Section 7. Handling and Storage

Contact

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

New Zealand National Poisons Centre
0800 764 766

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.
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*****