HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **DCA-17001**

Revision Date: 23-Sep-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

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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:	DCA-17001
Synonyms:	None
Chemical Family:	Blend
UN Number:	UN1993
Dangerous Goods Class:	3
Subsidiary Risk:	None
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

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

Hazard Overview

May cause eye, skin, and 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

F - Highly Flammable.
T - Toxic.

Risk Phrases

R10 Flammable.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitization by skin contact.
R61 May cause harm to the unborn child.
R20/21/22 Harmful by inhalation, by contact with skin and if swallowed.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin, and if swallowed.

Safety Phrases

S7 Keep container tightly closed.

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.
S36/37 Wear suitable protective clothing and gloves.

HSNO Classification

3.1C Flammable Liquids - Medium hazard
6.1D (Oral) Acutely Toxic Substances
6.1E (Dermal) Acutely Toxic Substances
6.3A Irritating to the skin
8.3A Corrosive to ocular tissue
6.5B Contact sensitisers
6.8B Human reproductive or developmental toxicants
6.9A Toxic to human target organs or systems
9.1A Very ecotoxic in the aquatic environment
9.2A Very ecotoxic in the soil environment
9.3C Harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
Diethylene glycol	111-46-6	30 - 60%	TWA: 23 ppm TWA: 100 mg/m^3	TWA: 23 ppm TWA: 101 mg/m^3	Not applicable
Cinnamaldehyde	104-55-2	30 - 60%	Not applicable	Not applicable	Not applicable
Amine oxides, cocoalkyldimethyl	61788-90-7	10 - 30%	Not applicable	Not applicable	Not applicable
Methanol	67-56-1	10 - 30%	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 Skin
Benzaldehyde	100-52-7	5 - 10%	Not applicable	Not applicable	Not applicable
Alcohols, C12-16, ethoxylated	68551-12-2	1 - 5%	Not applicable	Not applicable	Not applicable
Sodium iodide	7681-82-5	1 - 5%	Not applicable	Not applicable	0.01 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 — 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. Get immediate medical attention.

Notes to Physician — Not Applicable

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide, dry chemical, foam.

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

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. Runoff to sewer may cause fire or explosion hazard.

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. 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 away from oxidizers. Keep from heat, sparks, and open flames. Store in a well ventilated area. Store locked up. Keep container closed when not in use. Product has a shelf life of 60 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	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. Positive pressure self-contained breathing apparatus if methanol is released.
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): Butyl rubber gloves. (>= 0.7 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:	Yellow-orange
Odor:	Cinnamon
pH:	6.85 (10%)
Specific Gravity @ 20 C (Water=1):	1.015
Density @ 20 C (kg/l):	0.979
Bulk Density @ 20 C (kg/M3):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (C):	-21
Pour Point/Range (C):	-0.8
Flash Point/Range (C):	28.9
Flash Point Method:	PMCC
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):	Not Determined
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 (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 Ammonia. Oxides of nitrogen. Hydrocarbons. Carbon monoxide and carbon dioxide.

Additional Guidelines Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure

Acute Toxicity

Product Information Based on the collective toxicity of product ingredients, the mixture should be considered to cause the following:

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

Ingestion 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. May cause liver and kidney damage.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol	111-46-6	12565 - 19600 mg/kg (Rat)	11890 - 13300 mg/kg (Rabbit)	> 4.6 mg/L (Rat) 4h
Cinnamaldehyde	104-55-2	2200 mg/kg (Rat) 340 mg/kg (Guinea pig) 1160 ng/kg (Rat) 1600 mg/kg (Rat)	2000 mg/kg (Rabbit) 2000 mg/kg (Rat) 1260 mg/kg (Rabbit)	QSAR: 68.86 ppm (Rat) 4h 68.88 ppm (Rat) 4h (QSAR)
Amine oxides, cocoalkyldimethyl	61788-90-7	846 - 3873 mg AO/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)
Benzaldehyde	100-52-7	800 mg/kg (Rat) 1375 mg/kg (Rat)	>1250 mg/kg (Rabbit) >20000 mL/kg (Guinea Pig)	LC50: >1 <5 mg/L air (Rat) 4h

Alcohols, C12-16, ethoxylated	68551-12-2	1,400 mg/kg (Rats)	>2000 and < 5000 mg/kg (similar substances)	No data available
Sodium iodide	7681-82-5	4340 mg/kg (Rat) 3118 mg/kg (Rats) (Similar substance)	No data available	LCLo: 50000 mg/m^3 (Mouse) 2h

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
Diethylene glycol	111-46-6	TGK(8d): 2700 mg/L (Scenedesmus quadricauda)	LC50: 75200 mg/L (Pimephales promelas)	EC20(30m): > 1995 mg/L (domestic activated sludge)	EC50: 84000 mg/L (Daphnia magna) EC50: >10000 mg/L (Daphnia magna)
Cinnamaldehyde	104-55-2	EC50: 0.13 mg/L (Chlorella vulgaris) 80 h minimum inhibitory concentration (QSAR): 0.15 mmol/L (Chlorella vulgaris)	(QSAR) LC50(47h): 122 mg/L (Cyprinus carpio)	(QSAR) IC50(48h): 131.2 mg/L (Tetrahymena pyriformis)	(QSAR) LC50(48h): 107 mg/L (Daphnia magna)
Amine oxides, cocoalkyldimethyl	61788-90-7	ErC50(72h): 0.29 mg/L (Selenastrum capricornutum)	LC50(96h): 1.0 – 3.4 mg/L (Brachydanio rerio) LC50(96h): 13.0 (Salmo gairdneri)	EC50(3h): 240 mg/L (Pseudomonas putida)	EC50(48h): 2.9 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)
Benzaldehyde	100-52-7	NOEC (8d): 20 mg/L (Microcystis aeruginosa) NOEC(8d): 132 mg/L	LC50: 10.6-11.8 mg/L (Oncorhynchus mykiss) LC50(96h): 12.4 mg/L (Pimephales promelas) LC50 (96h): 11.2 mg/L (Salmo gairdneri) LC50(96h): 13.8 mg/L (Carassius auratus) LC50(96h): 5.39 mg/L (Ictalurus punctatus) LC50(96h): 1.07 mg/L (Lepomis macrochirus)	IC50(3h): 740 mg/L	EC50: 50 mg/L (Daphnia magna)
Alcohols, C12-16, ethoxylated	68551-12-2	(similar substance) EC50(72h): 0.5 mg/L (Scenedesmus subspicatus) (similar substance) EC50(72h): 0.85 mg/L (Selenastrum capricornutum)	(similar substance) LC50(96h): 1.2 – 6.4 (Brachydanio rerio)	(similar substance) EC0(30m): >10000 mg/L (Pseudomonas putida)	(similar substance) EC50(48h): 0.5 – 1.9 mg/L
Sodium iodide	7681-82-5	7 d Tox threshold: 2370 mg/L (Scenedesmus quadricauda, biomass) EC50(72h): 2588.7 mg/L (Skeletonema costatum)	LC50(96h): 3780 mg/L (Oncorhynchus mykiss) LC50(96h): > 100 mg/L (Scopthalmus maximus)	No information available	EC50(48h): 1.27 mg/L (Daphnia magna) EC50(48h): 575 mg/L (Acartia tonsa)

12.2. Persistence and degradability

No data is available on the product itself

Substances	CAS Number	Persistence and Degradability
Diethylene glycol	111-46-6	Readily biodegradable (90-100% @ 28d)
Cinnamaldehyde	104-55-2	Predicted to be readily biodegradable.
Amine oxides, cocoalkyldimethyl	61788-90-7	Readily biodegradable (93% ThO2)
Methanol	67-56-1	Readily biodegradable (95-97% @ 20d)
Benzaldehyde	100-52-7	Readily biodegradable (>=95% @ 28d)
Alcohols, C12-16, ethoxylated	68551-12-2	Expected to be readily biodegradable (similar substances)
Sodium iodide	7681-82-5	Not applicable

12.3. Bioaccumulative potential

No data is available on the product itself

Substances	CAS Number	Log Pow
Diethylene glycol	111-46-6	BCF: 100 (Leuciscus idus melanotus)
Cinnamaldehyde	104-55-2	1.83 BCF: 8 (Calculated)
Amine oxides, cocoalkyldimethyl	61788-90-7	No information available
Methanol	67-56-1	-0.77 BCF 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)
Benzaldehyde	100-52-7	No information available
Alcohols, C12-16, ethoxylated	68551-12-2	No information available
Sodium iodide	7681-82-5	-1.301

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

No information available.

Substances	PBT and vPvB assessment
Methanol	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 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

Australia Dangerous Goods

UN Number: UN1993
UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Methanol, Aldehydes)
Transport Hazard Class(es): 3
Packing Group: III

IMDG/IMO

UN Number: UN1993
UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Methanol, Aldehydes)
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 Methanol, Aldehydes)
Transport Hazard Class(es): 3
Packing Group: III

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

15. REGULATORY INFORMATION

Chemical Inventories

Australian AICS Inventory	All components listed on inventory or are exempt.
New Zealand Inventory of Chemicals	All components listed on inventory or are exempt.
US TSCA Inventory	All components listed on inventory or are exempt.
EINECS Inventory	This product, and all its components, complies with EINECS
Classification	F - Highly Flammable. T - Toxic.
Risk Phrases	R10 Flammable. R38 Irritating to skin. R41 Risk of serious damage to eyes. R43 May cause sensitization by skin contact. R61 May cause harm to the unborn child. R20/21/22 Harmful by inhalation, by contact with skin and if swallowed. R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin, and if swallowed.
Safety Phrases	S7 Keep container tightly closed. 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. S36/37 Wear suitable protective clothing and gloves.

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

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

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