

MATERIAL SAFETY DATA SHEET

Product Trade Name: **DCA-31006**

Revision Date: 09-Dec-2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: DCA-31006
Synonyms: None
Chemical Family: Solvent
Application: Solvent

Manufacturer/Supplier: Halliburton Energy Services
P.O. Box 1431
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
n-Methylpyrrolidone	872-50-4	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation.

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.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	199
Flash Point/Range (C):	92
Flash Point Method:	Not Determined
Autoignition Temperature (F):	518
Autoignition Temperature (C):	270
Flammability Limits in Air - Lower (%):	1.3
Flammability Limits in Air - Upper (%):	9.5

Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.
Special Exposure Hazards	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 1, Flammability 2, Reactivity 0
HMIS Ratings:	Health 1, Flammability 2, Physical Hazard 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. 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.
Storage Information	Store away from oxidizers. Store away from reducing agents. Store in a cool well ventilated area. Store locked up. 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. Local exhaust ventilation should be used in areas without good cross ventilation.
Respiratory Protection	<p>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, 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.</p> <p>Organic vapor/acid gas respirator with a dust/mist filter.</p>
Hand Protection	Butyl rubber gloves.
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:	Clear colorless
Odor:	Mild amine
pH:	8.5
Specific Gravity @ 20 C (Water=1):	1.02
Density @ 20 C (lbs./gallon):	8.50
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	395
Boiling Point/Range (C):	201
Freezing Point/Range (F):	-75
Freezing Point/Range (C):	-60
Vapor Pressure @ 20 C (mmHg):	0.29
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	100
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Miscible
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):	99

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. Reducing agents. Violent, explosive reaction with sulfur trioxide, decaborane, silver perchlorate, triethenyl aluminum, and hydrogen in presence of nickel catalyst at temperatures above 200 C.
Hazardous Decomposition Products	Oxides of nitrogen. 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

Inhalation	Causes severe respiratory irritation.
Eye Contact	Causes severe eye irritation which may damage tissue.
Skin Contact	May cause moderate skin irritation.
Ingestion	Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause embryo and fetus toxicity.

LD50 Oral: 7000 mg/kg; (rat)
LD50 Dermal: 8000 mg/kg; (rabbit)

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
n-Methylpyrrolidone	872-50-4	3598 mg/kg (Rat) 3500 mg/kg (Rabbit)	2500 mg/kg (Rat) 2000 mg/kg (Rabbit)	3.1 mg/L (Rat) 4 h

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: EC50: 43 ppm (Abra alba) TLM24: 832 mg/l (Lepomis macrochirus) TLM96: 1072 mg/l (Pimephales promelas)
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
n-Methylpyrrolidone	872-50-4	EC50(72h): >500 mg/L (Desmodesmus subspicatus)	LC50(96h): 832 mg/l (Lepomis macrochirus) LC50(96h): 4000 mg/L (Leuciscus idus) LC50(96h): 1072 mg/L (Pimephales promelas) LC50(96h): 1400 mg/L (Poecilia reticulata)	No information available	EC50(48h): 4897 mg/L (Daphnia magna)

12.2 Persistence and degradability

Readily biodegradable

12.3 Bioaccumulative potential

Does not bioaccumulate

Substances	Log Pow
n-Methylpyrrolidone	-0.46

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

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

Land Transportation

DOT

Not restricted

Canadian TDG

Not restricted

ADR

Not restricted

Air Transportation

ICAO/IATA

Not restricted

Sea Transportation

IMDG

Not restricted

Other Transportation Information

Labels: 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: n-Methylpyrrolidone//872-50-4
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
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	Does not apply.

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 B3 Combustible Liquids
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*****