

SAFETY DATA SHEET

Product Trade Name: MC B-8626A

Revision Date: 08-Feb-2018

Revision Number: 1

1. Identification

1.1. Product Identifier

Product Trade Name: MC B-8626A
Synonyms None
Chemical Family: Blend
Internal ID Code MB000656

1.2 Recommended use and restrictions on use

Application: Biocide
Uses advised against Consumer use

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier

Multi-Chem Group LLC
 A Halliburton Energy Services, Inc. Company
 3000 N. Sam Houston Pkwy E., Houston, TX 77032
 Phone: 1-281-871-4000

Halliburton Group Canada
 645 - 7th Ave SW Suite 1800
 Calgary, AB, T2P 4G8, Canada
 Telephone: 1-403-231-9300

Prepared By Chemical Stewardship
 e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number:

Emergency Telephone Number 1-866-519-4752 or 1-760-476-3962 (accessible 24 hours a day / 7 days a week)
 Global Incident Response Access Code: 334305
 Contract Number: 14012

2. Hazards Identification

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

Acute Oral Toxicity	Category 4 - H302
Acute inhalation toxicity - vapor	Category 3 - H331
Skin Corrosion / Irritation	Category 1 - H314
Serious Eye Damage/Irritation	Category 1 - H318
Respiratory Sensitization	Category 1 - H334
Skin Sensitization	Category 1 - H317
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335

Acute Aquatic Toxicity	Category 1 - H400
Chronic Aquatic Toxicity	Category 1 - H410

2.2. Label Elements

Hazard Pictograms



Signal Word:

Danger

Hazard Statements

- H302 - Harmful if swallowed
- H314 - Causes severe skin burns and eye damage
- H317 - May cause an allergic skin reaction
- H318 - Causes serious eye damage
- H331 - Toxic if inhaled
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335 - May cause respiratory irritation
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P271 - Use only outdoors or in a well-ventilated area
- P272 - Contaminated work clothing should not be allowed out of the workplace
- P273 - Avoid release to the environment
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

- P284 - In case of inadequate ventilation wear respiratory protection.
- P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P363 - Wash contaminated clothing before reuse
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P310 - Immediately call a POISON CENTER or doctor/physician
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Storage

- P391 - Collect spillage
- 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

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
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Glutaraldehyde	111-30-8	10 - 30%	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Skin Corr. 1B (H314) Eye Corr. 1 (H318) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)
Didecyltrimethylammonium chloride	7173-51-5	5 - 10%	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5 - 10%	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

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

4. First Aid Measures

4.1. Description of first aid measures

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Seek immediate medical attention/advice.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

Ingestion

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Glutaraldehyde may cause burns that require extended irrigation. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants and antitussives may be of help. Glutaraldehyde may transiently worsen reversible airways obstruction including asthma or reactive airways disease. Treat bronchospasm with inhaled beta-2 agonist and oral or parenteral corticosteroids. Inhalation of vapors may result in skin sensitization. In sensitized individuals, reexposure to very small amounts of vapor, mist, or liquid may cause a severe allergic skin reaction.

If burn is present, treat as any thermal burn, after decontamination.

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

Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering.

5.2 Specific hazards arising from the substance or mixture**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

5.3 Special protective equipment and precautions for fire-fighters**Special protective equipment for firefighters**

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**

Ensure adequate ventilation. Use appropriate protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes and clothing. 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

Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. Handling and storage**7.1. Precautions for safe handling****Handling Precautions**

Do not breathe dust/fume/gas/mist/vapors/spray. Ensure adequate ventilation. Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities**Storage Information**

Store in a well ventilated area.

8. Exposure Controls/Personal Protection**8.1 Occupational Exposure Limits**

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Glutaraldehyde	111-30-8	Not applicable	Ceiling: 0.05 ppm
Didecyldimethylammonium chloride	7173-51-5	Not applicable	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable	Not applicable

8.2 Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas

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 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.

Hand Protection Impervious gloves Manufacturer's directions for use should be observed because of great diversity of types. Oil-resistant gloves.

Skin Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

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	Clear to Slightly Hazy , Colorless
Odor: Fruity	Odor	No information available
	Threshold:	

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	3.5 - 5.5 (Neat)
Freezing Point / Range	-9 °C / 15 °F
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	> 93.3 °C / > 200 °F (SFCC)
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.01 - 1.09 (20 °C/68 °F)
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
Liquid Density	8.42 - 9.09 lbs/gal
Bulk Density	1010 - 1090 kg/m ³

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

None anticipated

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide. Oxides of nitrogen.

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Inhalation. Skin contact. Ingestion. Eye contact.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation

May cause respiratory irritation. Toxic if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled

Eye Contact

Causes serious eye damage.

Skin Contact

Causes severe burns. May cause an allergic skin reaction.

Ingestion

Harmful if swallowed. Causes burns 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
Glutaraldehyde	111-30-8	50 mg/kg (Guinea Pig)	560 µL/kg (Rabbit)	0.28-0.5 mg/L (Rat) 4h
Didecyltrimethylammonium chloride	7173-51-5	329 mg/kg-bw (rat)	2930 mg/kg-bw (rabbit)	No data available
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	304.5 mg/kg (rat) 426 mg/kg (rat)	930 mg/kg (rat) 919 mg/kg (mouse)	No data available

Substances	CAS Number	Skin corrosion/irritation
Glutaraldehyde	111-30-8	Causes severe skin irritation with tissue destruction. (Rabbit)
Didecyltrimethylammonium chloride	7173-51-5	Skin, rabbit: Causes severe skin irritation with tissue destruction. Causes burns
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Causes severe irritation and or burns

Substances	CAS Number	Serious eye damage/irritation
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Glutaraldehyde	111-30-8	Causes severe eye irritation which may damage tissue. (Rabbit)
Didecyldimethylammonium chloride	7173-51-5	Corrosive to eyes Causes severe irritation and or burns Eye, rabbit:
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Causes severe eye irritation which may damage tissue.

Substances	CAS Number	Skin Sensitization
Glutaraldehyde	111-30-8	Skin sensitizer in guinea pig.
Didecyldimethylammonium chloride	7173-51-5	Did not cause sensitization on laboratory animals (guinea pig)
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Glutaraldehyde	111-30-8	May cause sensitization by inhalation
Didecyldimethylammonium chloride	7173-51-5	No information available
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	No information available

Substances	CAS Number	Mutagenic Effects
Glutaraldehyde	111-30-8	In vivo tests did not show mutagenic effects.
Didecyldimethylammonium chloride	7173-51-5	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects.
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Glutaraldehyde	111-30-8	Did not show carcinogenic effects in animal experiments
Didecyldimethylammonium chloride	7173-51-5	Did not show carcinogenic effects in animal experiments
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Glutaraldehyde	111-30-8	Not a confirmed teratogen or embryotoxin.
Didecyldimethylammonium chloride	7173-51-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Glutaraldehyde	111-30-8	No information available
Didecyldimethylammonium chloride	7173-51-5	May cause respiratory irritation.
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	No information available May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Glutaraldehyde	111-30-8	May cause disorder and damage to the Kidney
Didecyldimethylammonium chloride	7173-51-5	No data of sufficient quality are available. Not applicable due to corrosivity of the substance.
Quaternary ammonium	68424-85-1	No significant toxicity observed in animal studies at concentration requiring classification.

compounds, benzyl-C12-16-alkyldimethyl, chlorides		
Substances	CAS Number	Aspiration hazard
Glutaraldehyde	111-30-8	Not applicable
Didecyldimethylammonium chloride	7173-51-5	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable

12. Ecological Information

12.1. Toxicity

Ecotoxicity effects

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Glutaraldehyde	111-30-8	EC50(72h): 0.61 mg/L (Desmodesmus subspicatus) EC50(72h): 0.5 mg/L (Skeletonema costatum)	LC50(96h): 10 mg/L (Lepomis macrochirus) NOEC(97d): 1.6 mg/L (Oncorhynchus mykiss) LC50(96h): 3.5 mg/L (Oncorhynchus mykiss) LC50(96h): 60 mg/L (Scophthalmus maximus)	EC50 (17h) 6.65 mg/L (Pseudomonas putida)	EC50(48h): 0.35 mg/L (Daphnia magna) EC50(48h): 0.7 mg/L (Acartia tonsa) NOEC(21d): 0.13 mg/L (Daphnia magna) EC50(48h): 0.1 mg/L (Acartia tonsa)
Didecyldimethylammonium chloride	7173-51-5	ErC50 (96 h) =0.053 mg/L (Pseudokirchnerella subcapitata)	LC50 (96 h) =0.97 mg/L (Danio rerio)	EC50 (3h) 17.95 mg/L (Activated sludge)	EC50 (48 h) =0.057 mg/L (Daphnia magna) NOEC (21 d) =0.021 mg/L (Daphnia magna)
Quaternary ammonium compounds, benzyl-C12-16-alkyldi methyl, chlorides	68424-85-1	EC50(96 h)=0.03 mg/L (Pseudokirchneriella subcapitata)	LC50(96 h)=0.28 mg/L (Pimephales promelas)	No information available	EC50(48 h)=0.016 mg/L (Daphnia magna) NOEC(21 d)=0.00415 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Glutaraldehyde	111-30-8	Readily biodegradable (75% @ 28d)
Didecyldimethylammonium chloride	7173-51-5	Readily biodegradable (69% @ 28d)
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	(88.9% in 28 days (OECD 301B)% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Glutaraldehyde	111-30-8	-0.36
Didecyldimethylammonium chloride	7173-51-5	-0.41 BCF = 2.1
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	0.04

12.4. Mobility in soil

Substances	CAS Number	Mobility
Glutaraldehyde	111-30-8	Potential for mobility in soil is high (Koc between 50 and 150). Given its very low Henry's constant (3.3E-08 atm*m ³ /mole; 25 °C Measured), volatilization from natural bodies of water or moist soil is not expected to be an

		important fate process.
Didecyldimethylammonium chloride	7173-51-5	KOC = >667
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations**13.1. Waste treatment methods**

Disposal methods Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Dispose of container according to national or local regulations.

14. Transport Information**US DOT**

UN Number UN2922
UN proper shipping name: Corrosive Liquid, Toxic, N.O.S. (Contains Glutaraldehyde, Quaternary ammonium compound)
Transport Hazard Class(es): 8 (6.1)
Packing Group: III
Environmental Hazards: Marine Pollutant
NAERG: NAERG 154

Canadian TDG

UN Number UN2922
UN proper shipping name: Corrosive Liquid, Toxic, N.O.S. (Contains Glutaraldehyde, Quaternary ammonium compound)
Transport Hazard Class(es): 8 (6.1)
Packing Group: III
Environmental Hazards: Marine Pollutant

IMDG/IMO

UN Number UN2922
UN proper shipping name: Corrosive Liquid, Toxic, N.O.S. (Contains Glutaraldehyde, Quaternary ammonium compound)
Transport Hazard Class(es): 8 (6.1)
Packing Group: III
Environmental Hazards: Marine Pollutant
EMS: EmS F-A, S-B

IATA/ICAO

UN Number UN2922
UN proper shipping name: Corrosive Liquid, Toxic, N.O.S. (Contains Glutaraldehyde, Quaternary ammonium compound)
Transport Hazard Class(es): 8 (6.1)
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.

TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2	TSCA Section 5(E) Consent Orders
Glutaraldehyde	111-30-8	Not applicable	Not applicable
Didecyldimethylammonium chloride	7173-51-5	Not applicable	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Glutaraldehyde	111-30-8	Not applicable
Didecyldimethylammonium chloride	7173-51-5	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable

EPA SARA (311,312) Hazard Class

Acute toxicity (any route of exposure)

Skin Corrosion or Irritation

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Specific target organ toxicity (single or repeated exposure)

EPA SARA (313) Chemicals:

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Glutaraldehyde	111-30-8	Not applicable	Not applicable
Didecyldimethylammonium chloride	7173-51-5	Not applicable	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Glutaraldehyde	111-30-8	Not applicable
Didecyldimethylammonium chloride	7173-51-5	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	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.
Corrosivity D002

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal Word:

DANGER

Hazard Statements

HARMFUL IF SWALLOWED

Harmful if inhaled

Harmful if absorbed through skin.

Causes serious eye damage

May cause an allergic skin reaction

California Proposition 65

Substances	CAS Number	California Proposition 65
Glutaraldehyde	111-30-8	Not applicable

Didecyldimethylammonium chloride	7173-51-5	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable

U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Glutaraldehyde	111-30-8	Present	Present	Present
Didecyldimethylammonium chloride	7173-51-5	Not applicable	Not applicable	Not applicable
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	Not applicable	Not applicable	Not applicable

Canadian Regulations

Canadian Domestic Substances List (DSL) All components listed on inventory or are exempt.

16. Other information**Preparation Information**

Prepared By Chemical Stewardship
e-mail: fdunexchem@halliburton.com

Revision Date: 08-Feb-2018

Reason for Revision SDS sections updated:
2
8
9
11
15

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.

NFPA Ratings: Health 3, Flammability 1, Reactivity 0
HMIS Ratings: Health 3*, Flammability 1, Physical Hazard 0, PPE: X

Key or legend to abbreviations and acronyms used in the safety data sheet

bw – body weight
CAS – Chemical Abstracts Service
d - day
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
h - hour
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
mg/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
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
w/w - weight/weight

Key literature references and sources for data

OSHA
ECHA C&L
www.ChemADVISOR.com/

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End of Safety Data Sheet