multi-chem®
A HALLIBURTON SERVICE

SAFETY DATA SHEET

Product Trade Name: **MC C-6051**

Revision Date: 11-Apr-2016 **Revision Number:** 3

1. Identification

1.1. Product Identifier

Product Trade Name: MC C-6051
Synonyms None
Chemical Family: Blend
Internal ID Code MC000674

1.2 Recommended use and restrictions on use

Application: Corrosion Inhibitor
Uses advised against Consumer use

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier
Multi-Chem Group LLC
424 S Chadbourne St
San Angelo, TX 76903
Phone: 1 325 223 6200
Emergency Phone Number: 1-866-519-4752 (US, Canada, Mexico) or 1-760-476-3962

Halliburton Energy Services
645 - 7th Ave SW Suite 1800
Calgary, AB
T2P 4G8
Canada

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number: 1-866-519-4752 or 1-760-476-3962

2. Hazard(s) Identification

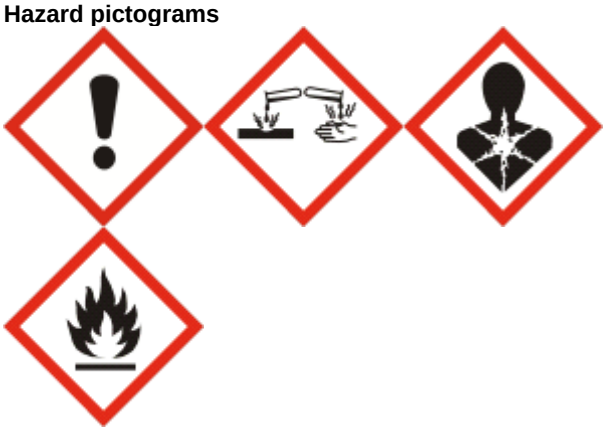
2.1 Classification in accordance with paragraph (d) of §1910.1200

Skin Corrosion / Irritation	Category 2 - H315
Serious Eye Damage/Irritation	Category 1 - H318
Reproductive Toxicity	Category 1B - H360
Specific Target Organ Toxicity - (Single Exposure)	Category 1 - H370
Acute Aquatic Toxicity	Category 2 - H401
Chronic Aquatic Toxicity	Category 3 - H412

Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard pictograms



Signal Word Danger

Hazard Statements

H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H318 - Causes serious eye damage
H360 - May damage fertility or the unborn child
H370 - Causes damage to organs
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233 - Keep container tightly closed
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical/ventilating/lighting/equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
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
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use CO2, dry chemical, or foam

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool
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
Salt of a fatty acid imidazole	Proprietary	5 - 10%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)
Methanol	67-56-1	5 - 10%	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Repr. 1B (H360) STOT SE 1 (H370) Flam. Liq. 2 (H225)
Ethylene glycol monobutyl ether	111-76-2	5 - 10%	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Flam. Liq. 4 (H227)
Isopropanol	67-63-0	1 - 5%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)
Phosphonic Acid Salt	Proprietary	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)

The specific chemical identity of the composition has been withheld as proprietary. 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 15 minutes. Get medical attention.

Ingestion Following ingestion, onset of symptoms may be delayed by 12 to 24 hours. Admission to hospital should be the first priority even if symptoms are absent.

4.2 Most important symptoms/effects, acute and delayed

Causes skin irritation. Causes severe eye irritation which may damage tissue. Potential reproductive hazard. May cause birth defects. May cause damage to internal organs.

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

Notes to Physician Gastric lavage or emesis should be performed as soon as possible to minimize absorption, and is recommended within 4 hours of ingestion. Ethanol may be given intravenously to prevent build-up of toxic effects of methanol metabolites. Visual disturbances and metabolic acidosis may occur and dialysis, preferably hemodialysis may be employed to treat these complications.

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. Remove sources of ignition. Take precautionary measures against static discharges All equipment used when handling the product must be grounded 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. Remove ignition sources and work with non-sparking tools.

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. Remove sources of ignition. Ground and bond containers when transferring from one container to another. 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 cool well ventilated area. Keep from heat, sparks, and open flames.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Salt of a fatty acid imidazole	Proprietary	Not applicable	Not applicable
Methanol	67-56-1	TWA: 200 ppm	TWA: 200 ppm STEL: 250 ppm
Ethylene glycol monobutyl ether	111-76-2	TWA: 50 ppm Skin	TWA: 20 ppm Skin
Isopropanol	67-63-0	TWA: 400 ppm	TWA: 200 ppm STEL: 400 ppm
Phosphonic Acid Salt	Proprietary	Not applicable	Not applicable

8.2 Appropriate engineering controls

Engineering Controls	Ensure adequate ventilation, especially in confined areas Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

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	Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.
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	Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles, Face-shield.
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**	Light Amber to Dark Amber , Clear to Slightly Hazy
Odor:	Pungent	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	5.39-6.39 (10% in 1:1 IPA:H2O)
Freezing Point / Range	<-9.4 °C / <15 °F
Melting Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	43.3 °C / 110 °F (SFCC)
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.9856-1.0106
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 8.21 - 8.42 lb/gal

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
Keep away from heat, sparks and flame.

10.5. Incompatible materials
Strong oxidizers. Strong acids. Strong alkalis.

10.6. Hazardous decomposition products
Carbon oxides. Oxides of nitrogen. Oxides of phosphorus.

11. Toxicological Information

11.1 Information on likely routes of exposure
Principle Route of Exposure Ingestion. Skin contact. Eye contact. Inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics
Acute Toxicity

Inhalation May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Eye Contact Causes serious eye damage.
Skin Contact Causes skin irritation.
Ingestion Ingestion of this product may cause blindness due to the presence of methanol.

Chronic Effects/Carcinogenicity May cause birth defects. Contains known or suspected reproductive toxins.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Salt of a fatty acid imidazole	Proprietary	2000 < LD50 < 5000 mg/kg (rat) (similar substance)	>2000 mg/kg (rabbit)	No data available
Methanol	67-56-1	300 mg/kg-bw (human) < 790 to 13,000 mg/kg (rat)	1000 mg/kg-bw (human) 17,100 mg/kg (rabbit)	10 mg/L (human, vapor, 4h)
Ethylene glycol monobutyl ether	111-76-2	1414 mg/kg-bw (guinea pig)	>2000 mg/kg (Rabbit)	No data available
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12,800 mg/kg (Rat) 12,870 mg/kg (Rabbit) 6280 mg/kg (Rabbit)	72.6 mg/L (Rat) 4h > 10,000 mg/L (Rat) 6h
Phosphonic Acid Salt	Proprietary	No data available	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Salt of a fatty acid imidazole	Proprietary	May cause moderate skin irritation.
Methanol	67-56-1	Non-irritating to the skin (Rabbit)
Ethylene glycol monobutyl ether	111-76-2	Causes moderate skin irritation. (Rabbit)

Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)
Phosphonic Acid Salt	Proprietary	May cause moderate skin irritation.

Substances	CAS Number	Serious eye damage/irritation
Salt of a fatty acid imidazole	Proprietary	Causes severe eye irritation which may damage tissue. (Rabbit) (similar substances)
Methanol	67-56-1	Non-irritating to the eye (Rabbit)
Ethylene glycol monobutyl ether	111-76-2	Causes moderate eye irritation (Rabbit)
Isopropanol	67-63-0	Causes moderate eye irritation (Rabbit)
Phosphonic Acid Salt	Proprietary	May cause moderate eye irritation.

Substances	CAS Number	Skin Sensitization
Salt of a fatty acid imidazole	Proprietary	No data of sufficient quality are available.
Methanol	67-56-1	Did not cause sensitization on laboratory animals (guinea pig)
Ethylene glycol monobutyl ether	111-76-2	Did not cause sensitization on laboratory animals (guinea pig)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	Respiratory Sensitization
Salt of a fatty acid imidazole	Proprietary	No information available
Methanol	67-56-1	No information available
Ethylene glycol monobutyl ether	111-76-2	No information available
Isopropanol	67-63-0	No information available
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	Mutagenic Effects
Salt of a fatty acid imidazole	Proprietary	In vitro tests did not show mutagenic effects (similar substances)
Methanol	67-56-1	The weight of evidence from available in vitro and in vivo studies indicates that this substance is not expected to be mutagenic.
Ethylene glycol monobutyl ether	111-76-2	In vivo tests did not show mutagenic effects.
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	Carcinogenic Effects
Salt of a fatty acid imidazole	Proprietary	No information available
Methanol	67-56-1	No data of sufficient quality are available.
Ethylene glycol monobutyl ether	111-76-2	Not regarded as carcinogenic.
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	Reproductive toxicity
Salt of a fatty acid imidazole	Proprietary	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Methanol	67-56-1	Experiments have shown reproductive toxicity effects on laboratory animals
Ethylene glycol monobutyl ether	111-76-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	STOT - single exposure
Salt of a fatty acid imidazole	Proprietary	May cause respiratory irritation.
Methanol	67-56-1	May cause disorder and damage to the Central Nervous System (CNS)
Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	STOT - repeated exposure
Salt of a fatty acid imidazole	Proprietary	No data of sufficient quality are available.
Methanol	67-56-1	No data of sufficient quality are available.
Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.

Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Phosphonic Acid Salt	Proprietary	No information available

Substances	CAS Number	Aspiration hazard
Salt of a fatty acid imidazole	Proprietary	Not applicable
Methanol	67-56-1	Not applicable
Ethylene glycol monobutyl ether	111-76-2	No adverse health effects are expected from swallowing. Not applicable
Isopropanol	67-63-0	Not applicable
Phosphonic Acid Salt	Proprietary	No information available

12. Ecological Information

12.1. Toxicity

Ecotoxicity effects

Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Salt of a fatty acid imidazole	Proprietary	No information available	LC50 (96h) 0.4 mg/L (Oncorhynchus mykiss) (similar substance)	No information available	EC50 (48h) 0.098 mg/L (Daphnia magna) (similar substance) NOEC (21d) 0.279 mg/L (Daphnia magna) (similar substance)
Methanol	67-56-1	EC50 (96 h) =22000 mg/L (Pseudokirchnerella subcapitata) NOEC (8 d) =8000 mg/L (Scenedesmus quadricauda)	LC50 (96 h) =15400 mg/L (Lepomis macrochirus) EC50 (200 h) =14536 mg/L (Oryzias latipes)	IC50 (3h) > 1000 mg/L (activated sludge)	EC50 (96 h) =18260 mg/L (Dapnia magna) NOEC (21 d) =208 mg/L (Dapnia magna)
Ethylene glycol monobutyl ether	111-76-2	EC50 (72 h) =1840 mg/L (Pseudokirchneriella subcapitata)	LC50 (96 h) =1474 mg/L (Oncorhynchus mykiss) NOAEC (21 d) >100 mg/L (Danio rerio)	No information available	EC50 (48 h) =1800 mg/L (Daphnia magna) EC50 (21 d) =297 mg/L (Daphnia magna)
Isopropanol	67-63-0	EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (Scenedesmus quadricauda)	LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata)	TT (16h) 1050 mg/L (Pseudomonas putida)	EC50 (48h) 13,299 mg/L (Daphnia magna) EC50 (24h) > 10,000 mg/L (Daphnia magna)
Phosphonic Acid Salt	Proprietary	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Salt of a fatty acid imidazole	Proprietary	No information available
Methanol	67-56-1	(95-97% @ 20d)
Ethylene glycol monobutyl ether	111-76-2	Readily biodegradable (75-88% @ 28d)
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)
Phosphonic Acid Salt	Proprietary	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Salt of a fatty acid imidazole	Proprietary	No information available
Methanol	67-56-1	-0.77 BCF = 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)
Ethylene glycol monobutyl ether	111-76-2	LogPow 0.81

Isopropanol	67-63-0	0.05
Phosphonic Acid Salt	Proprietary	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Salt of a fatty acid imidazole	Proprietary	No information available
Methanol	67-56-1	No information available
Ethylene glycol monobutyl ether	111-76-2	No information available
Isopropanol	67-63-0	KOC = 1.5
Phosphonic Acid Salt	Proprietary	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 UN1993
UN proper shipping name: Flammable Liquid, N.O.S. (Contains Methanol, Isopropanol)
Transport Hazard Class(es): 3
Packing Group: III
Environmental Hazards Not applicable
NAERG: NAERG 128

Canadian TDG

UN Number Not Applicable
UN proper shipping name: Not approved for transport in Canada
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards Not applicable

Not approved for transport in Canada

IMDG/IMO

UN Number UN1993
UN proper shipping name: Flammable Liquid, N.O.S. (Contains Methanol, Isopropanol)
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, Isopropanol)
Transport Hazard Class(es): 3
Packing Group: III
Environmental Hazards Not applicable

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
Salt of a fatty acid imidazole	Proprietary	Not applicable
Methanol	67-56-1	Not applicable
Ethylene glycol monobutyl ether	111-76-2	Not applicable
Isopropanol	67-63-0	Not applicable
Phosphonic Acid Salt	Proprietary	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Salt of a fatty acid imidazole	Proprietary	Not applicable
Methanol	67-56-1	Not applicable
Ethylene glycol monobutyl ether	111-76-2	Not applicable
Isopropanol	67-63-0	Not applicable
Phosphonic Acid Salt	Proprietary	Not applicable

EPA SARA (311,312) Hazard Class

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Salt of a fatty acid imidazole	Proprietary	Not applicable	Not applicable
Methanol	67-56-1	1.0%	Not applicable
Ethylene glycol monobutyl ether	111-76-2	1.0%	Not applicable
Isopropanol	67-63-0	1.0%	Not applicable
Phosphonic Acid Salt	Proprietary	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Salt of a fatty acid imidazole	Proprietary	Not applicable
Methanol	67-56-1	5000 lb 2270 kg
Ethylene glycol monobutyl ether	111-76-2	Not applicable
Isopropanol	67-63-0	Not applicable
Phosphonic Acid Salt	Proprietary	Not applicable

EPA RCRA Hazardous Waste Classification

Ignitability D001

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.

NFPA Ratings: Health 2, Flammability 2, Reactivity 0

HMIS Ratings: Health 2*, Flammability 2, Physical Hazard 0 , PPE: X

Canadian Regulations

Canadian Domestic Substances List (DSL) Product contains one or more components not listed on the inventory.

16. Other information

Preparation Information

Prepared By
Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

Revision Date: 11-Apr-2016

Reason for Revision Update to Format

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.

Key or legend to abbreviations and acronyms used in the safety data sheet
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
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
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

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End of Safety Data Sheet