multi-chem®
A HALLIBURTON SERVICE

SAFETY DATA SHEET

Product Trade Name: **MC MX 2-3526**

Revision Date: 10-Apr-2020 **Revision Number:** 3

1. Identification

1.1. Product Identifier

Product Trade Name: MC MX 2-3526
Synonyms None
Chemical Family: Blend
Internal ID Code MC001284

1.2 Recommended use and restrictions on use

Application: Iron Sulfide Dissolver / Iron Sulfide Dispersant
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
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 (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 4 - H332
Serious Eye Damage/Irritation	Category 1 - H318
Skin Sensitization	Category 1 - H317
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373
Acute Aquatic Toxicity	Category 2 - H401

Chronic Aquatic Toxicity	Category 2 - H411

2.2. Label Elements

Hazard Pictograms

Signal Word: Danger

Hazard Statements

H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure
H401 - Toxic to aquatic life
H411 - Toxic 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
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

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a POISON CENTER and doctor/physician if you feel unwell.
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
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P391 - Collect spillage

Storage

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
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	10 - 30%	Acute Tox. 4 (H302) Acute Tox. 3 (H331) Eye Corr. 1 (H318) Skin Sens. 1 (H317) Repr. 2 (H361) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Ammonium chloride	12125-02-9	5 - 10%	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) Aquatic Acute 3 (H402)
Isopropanol	67-63-0	1 - 5%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)
Alcohols, C10-16, ethoxylated	68002-97-1	1 - 5%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Aquatic Acute 1 (H400)

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

4. First Aid Measures

4.1. Description of first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

Ingestion Rinse mouth with water many times. Get medical attention, if symptoms occur

4.2 Most important symptoms/effects, acute and delayed

Causes severe eye irritation which may damage tissue. May cause allergic skin reaction. Harmful if swallowed. Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure.

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

Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Use appropriate protective equipment. Ensure adequate ventilation.
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

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
Use appropriate protective equipment. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.
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
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable	TWA: 2 mg/m^3
Ammonium chloride	12125-02-9	Not applicable	TWA: 10 mg/m^3 STEL: 20 mg/m^3
Isopropanol	67-63-0	TWA: 400 ppm TWA: 980 mg/m^3	TWA: 200 ppm STEL: 400 ppm
Alcohols, C10-16, ethoxylated	68002-97-1	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.
Skin Protection	Wear protective clothing appropriate for the work environment.
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 to Light Amber
Odor:	Mild	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	2.64-3.64
Freezing Point / Range	-12 °C / 10 °F
Melting Point / Range	No data available
Pour Point / Range	No data available -12.2- -9.4 °C 10-15 °F
Boiling Point / Range	No data available
Flash Point	Not applicable.
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	1.0759-1.1009 (20 °C/68 °F)
Water Solubility	No data available
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	8.97-9.18 lbs/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
Excessive heat

10.5. Incompatible materials
Strong oxidizers. Contact with alkalis.

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

11. Toxicological Information

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

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

Inhalation Harmful if inhaled. May cause mild respiratory irritation.

Eye Contact Causes serious eye damage

Skin Contact May cause an allergic skin reaction.

Ingestion Harmful if swallowed. May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause liver damage.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	575 mg/kg-bw (rat)	>4084 mg/kg (24 hrs, rabbit)	0.628 mg/L (male rat, aerosol) 0.551 mg/L (female rat, aerosol)
Ammonium chloride	12125-02-9	1220 mg/kg bw (rat)	> 2000 mg/kg (Rat)	No data available
Isopropanol	67-63-0	4700 mg/kg-bw (rat)	12870 mg/kg-bw (rabbit)	72.6 mg/L (Rat, 4h, vapor)
Alcohols, C10-16, ethoxylated	68002-97-1	600 mg/kg (Rat) (similar substances)	> 5200 mg/kg (Rabbit) (similar substances)	No toxicity at saturation (similar substances)

Substances	CAS Number	Skin corrosion/irritation
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	No data of sufficient quality are available.
Ammonium chloride	12125-02-9	Non-irritating to the skin (Rabbit)
Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)
Alcohols, C10-16, ethoxylated	68002-97-1	Causes moderate skin irritation. (Rabbit) (similar substances)

Substances	CAS Number	Serious eye damage/irritation
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Causes severe eye irritation
Ammonium chloride	12125-02-9	Causes moderate eye irritation (Rabbit)
Isopropanol	67-63-0	Causes moderate eye irritation (Rabbit)
Alcohols, C10-16, ethoxylated	68002-97-1	Causes serious eye damage (Rabbit) (similar substances)

Substances	CAS Number	Skin Sensitization
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Shown to be strong sensitizer in animal (guinea pig) studies.
Ammonium chloride	12125-02-9	Did not cause sensitization on laboratory animals (guinea pig)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)
Alcohols, C10-16,	68002-97-1	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)

ethoxylated		

Substances	CAS Number	Respiratory Sensitization
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	No information available
Ammonium chloride	12125-02-9	No information available
Isopropanol	67-63-0	No information available
Alcohols, C10-16, ethoxylated	68002-97-1	No information available

Substances	CAS Number	Mutagenic Effects
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	While some in vitro tests were positive and/or equivocal, in vivo results were negative. (similar substances)
Ammonium chloride	12125-02-9	In vitro tests have shown mutagenic effects ; and in vivo
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.
Alcohols, C10-16, ethoxylated	68002-97-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)

Substances	CAS Number	Carcinogenic Effects
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not regarded as carcinogenic.
Ammonium chloride	12125-02-9	Did not show carcinogenic effects in animal experiments
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments
Alcohols, C10-16, ethoxylated	68002-97-1	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	CAS Number	Reproductive toxicity
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Adverse developmental effects were only observed at maternally toxic doses.
Ammonium chloride	12125-02-9	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Isopropanol	67-63-0	Animal testing did not show any effects on fertility.
Alcohols, C10-16, ethoxylated	68002-97-1	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

Substances	CAS Number	STOT - single exposure
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	No data of sufficient quality are available.
Ammonium chloride	12125-02-9	No information available
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.
Alcohols, C10-16, ethoxylated	68002-97-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	STOT - repeated exposure
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	May cause disorder and damage to the (Liver) No data of sufficient quality are available.
Ammonium chloride	12125-02-9	No significant toxicity observed in animal studies at concentration requiring classification.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Alcohols, C10-16, ethoxylated	68002-97-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable
Ammonium chloride	12125-02-9	Not applicable
Isopropanol	67-63-0	Not applicable
Alcohols, C10-16, ethoxylated	68002-97-1	No adverse health effects are expected from swallowing. (similar substances)

12. Ecological Information

12.1. Toxicity

Ecotoxicity effects

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
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	EC50(72 h)=0.47 mg/L (Skeletonema costatum)	LC50(96 h)=94 mg/L (Oncorhynchus mykiss) LC50(96 h)=97 mg/L (Lepomis macrochirus)	No information available	LC50(48 h)=0.39 mg/L (Acartia tonsa) EC50(48 h)=15 mg/L (Daphnia magna)
Ammonium chloride	12125-02-9	EC50 (5d) 1300 mg/L (Chlorella vulgaris)	LC50 (96h) 34.6 mg/L (Oncorhynchus mykiss) NOEC (28d) 11.8 mg/L (Pimephales promelas)	EC50 (0.5h) 1618 mg/L (activated sludge, domestic)	LC50 (96h) > 100 mg/L (Gammarus fasciatus) EC10 (70d) 0.66 mg/L (Hyalella azteka)
Isopropanol	67-63-0	EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (meanextinction value)(Scenedesmus quadricauda)	LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata)	TT (16h) 1050 mg/L (Pseudomonas putida)	EC50 (48 h)=2285 mg/L (Daphnia sp.) EC50 (24h) > 10,000 mg/L (Daphnia magna)
Alcohols, C10-16, ethoxylated	68002-97-1	EC50 (48h) 0.7 mg/L (Skeletonema costatum) EC50 (72h) 1.1 mg/L (Scenedesmus subspicatus)	LC50 (96h) 1.6 mg/L (Pimephales promelas) LC50 (96h) 3 mg/L (Brachydanio rerio) LC50 (96h) 0.8mg/L (Cyprinus carpio)	No information available	EC50 (48h) 0.2 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Inherently biodegradable (> 20%)
Ammonium chloride	12125-02-9	The methods for determining biodegradability are not applicable to inorganic substances.
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)
Alcohols, C10-16, ethoxylated	68002-97-1	Readily biodegradable (84% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Log Pow= -9.8
Ammonium chloride	12125-02-9	No information available
Isopropanol	67-63-0	LogPow < 4.5
Alcohols, C10-16, ethoxylated	68002-97-1	Not Bioaccumulative

12.4. Mobility in soil

Substances	CAS Number	Mobility
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	No information available
Ammonium chloride	12125-02-9	No information available
Isopropanol	67-63-0	No information available
Alcohols, C10-16, ethoxylated	68002-97-1	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 Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number UN3082
UN proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Phosphonium Salts, Ethoxylated alcohols)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant
NAERG: NAERG 171
Not Restricted when shipped in containers less than 119 gallons as authorized by 49 CFR 173.150(e)(1) and 49 CFR 173.150(f)(2).

Canadian TDG

UN Number UN3082
UN proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Phosphonium Salts, Ethoxylated alcohols)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant

IMDG/IMO

UN Number UN3082
UN proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Phosphonium Salts, Ethoxylated alcohols)
Transport Hazard Class(es): 9
Packing Group: III
Environmental Hazards: Marine Pollutant
EMS: EmS F-A, S-F

IATA/ICAO

UN Number UN3082
UN proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Phosphonium Salts, Ethoxylated alcohols)
Transport Hazard Class(es): 9
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	TSCA Section 5(E) Consent

		Rules - S5A2	Orders
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable	Not applicable
Ammonium chloride	12125-02-9	Not applicable	Not applicable
Isopropanol	67-63-0	Not applicable	Not applicable
Alcohols, C10-16, ethoxylated	68002-97-1	Not applicable	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable
Ammonium chloride	12125-02-9	Not applicable
Isopropanol	67-63-0	Not applicable
Alcohols, C10-16, ethoxylated	68002-97-1	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
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable	Not applicable
Ammonium chloride	12125-02-9	1.0%	Not applicable
Isopropanol	67-63-0	1.0%	Not applicable
Alcohols, C10-16, ethoxylated	68002-97-1	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable
Ammonium chloride	12125-02-9	5000 lb 2270 kg
Isopropanol	67-63-0	Not applicable
Alcohols, C10-16, ethoxylated	68002-97-1	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.

California Proposition 65

Substances	CAS Number	California Proposition 65
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable
Ammonium chloride	12125-02-9	Not applicable
Isopropanol	67-63-0	Not applicable
Alcohols, C10-16, ethoxylated	68002-97-1	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
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1)	55566-30-8	Not applicable	Present	Not applicable
Ammonium chloride	12125-02-9	Present	Present	Environmental hazard
Isopropanol	67-63-0	Present	Present	Environmental hazard
Alcohols, C10-16, ethoxylated	68002-97-1	Not applicable	Not applicable	Not applicable

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

Canadian Regulations

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

16. Other information

Preparation Information

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

Revision Date: 10-Apr-2020

Reason for Revision
SDS sections updated:
2
3
4
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.

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/m^3 - 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
www.ChemADVISOR.com/

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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 Safety Data Sheet