

MATERIAL SAFETY DATA SHEET**Product Trade Name:** CLAYFIX-II MATERIAL**Revision Date:** 20-Aug-2014**Revision Number:** 17**SECTION 1. Product and Company Identification****Product Identifier**

Product Trade Name: CLAYFIX-II MATERIAL
Synonyms: None
Chemical Family: Organic Salt
Internal ID Code: HM000370

Product Use

Application: Clay Control

Manufacturer's Name and Contact Details

Name and Address Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

Emergency Telephone Number (281) 575-5000

Prepared By

Chemical Compliance
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SECTION 2. Hazard(s) Identification**WHMIS Classification**

WHMIS Hazard Class D1B Toxic Materials
E Corrosive Material

WHMIS Symbol(s)**Summary of hazards of the product**

Hazard Overview May cause eye burns. May be fatal if swallowed. May be absorbed through the skin.

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
Alkylated quaternary chloride	Proprietary	30 - 60%	8935	August 11, 2014
Potassium hydroxide	1310-58-3	0.1 - 1%	Not applicable	Not applicable

SECTION 4. First aid measures

Description of first aid measures

Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration (AR), preferably mouth-to-mouth. If breathing is difficult, oxygen should be given by trained personnel. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Get medical attention.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 30 minutes while holding eyelids open and get medical attention immediately after flushing.

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.

Ingestion

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration.

Most important symptoms and effects, both acute and delayed

May cause eye burns. May be fatal if swallowed. May be absorbed through the skin.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

SECTION 5. Fire Fighting Measures

Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Hazardous combustion products

Chlorine. Hydrogen chloride. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

SECTION 6. Accidental release measures

Personal precautions and emergency procedures

Protective Equipment

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.

SECTION 7. Handling and Storage

Precautions for safe handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Do NOT consume food, drink, or tobacco in contaminated areas. Wash hands after use. Launder contaminated clothing before reuse.

Conditions for safe storage and Incompatible materials for storage

Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 24 months.

SECTION 8: Exposure Controls/Personal Protection

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Alkylated quaternary chloride	Proprietary	Not available	Not available
Potassium hydroxide	1310-58-3	2 mg/m ³	Not available

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area.

Personal Protective Equipment (PPE)**Respiratory Protection**

Organic vapor/acid gas respirator with a dust/mist filter.

Hand Protection

Impervious 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.

SECTION 9. Physical and Chemical Properties
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Information on basic physical and chemical properties

Physical State: Liquid

Color: Clear light amber

Odor: Mild amine

Odor Threshold: No information available

PropertyValues

Remarks/ - Method

pH:

4- 9

pH Concentration of Solution:

No information available.

Freezing Point/Range

No information available.

Melting Point/Range

No information available

Boiling Point/Range (C):

100

Flash Point/Range (C):

> 93 °C

Flash Point Method:

PMCC

Autoignition Temperature (C):

No information available.

Flammability Limits in Air - Lower (%):

No information available.

Flammability Limits in Air - Upper (%):

No information available.

Evaporation Rate (Butyl Acetate=1):

No information available.

Vapor Pressure @ 20 C (mmHg):

No information available.

Vapor Density (Air=1):

No information available.

Specific Gravity @ 20 C (Water=1):

1.0153

Solubility in Water (g/100ml):

Soluble

Solubility in other solvents

No information available.

Partition Coefficient/n-Octanol/Water:

No information available.

Decomposition Temperature (C):

No information available

Viscosity

No information available

Explosive Properties

No information available

Oxidizing Properties

No information available

Other Information

Molecular Weight (g/mole):

No information available.

VOC Content (%)

No information available

SECTION 10. Stability and Reactivity

Conditions of Reactivity**Conditions to Avoid****Hazardous Polymerization:**

None anticipated
Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong oxidizers.

Hazardous Decomposition Products

Chlorine. Hydrogen chloride. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

SECTION 11. Toxicological Information
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Routes of entry

Eye or skin contact, inhalation. Ingestion.

Information on Toxicological Effects**Acute effects from exposure**

Inhalation	May cause respiratory irritation.
Eye Contact	May cause eye burns.
Skin Contact	May cause skin irritation.
Ingestion	May be fatal if swallowed.

Chronic effects from exposure**Chronic Effects/Carcinogenicity**

No data available to indicate product or components present at greater than 1% are chronic health hazards.

Irritancy of product**Irritation**

Corrosive to eyes

Sensitization of product**Sensitization**

Not confirmed to cause skin or respiratory sensitization.

Mutagenicity**Mutagenic Effects**

Not regarded as mutagenic.

Carcinogenicity**Carcinogenic Effects**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, or OSHA.

Reproductive toxicity**Reproductive Toxicity**

This product does not contain any known or suspected reproductive hazards

Teratogenicity/embryotoxicity**Teratogenic**

Not a confirmed teratogen or embryotoxin.

Toxicologically synergistic material Not available**Acute Toxicity**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Alkylated quaternary chloride	Proprietary	50 mg/kg (Rat)	> 200 - 1000 mg/kg (Rabbit)	No data available
Potassium hydroxide	1310-58-3	214 mg/kg (Rat) 273 mg/kg (Rat) 333 - 388 mg/kg Rat)	No data available	No data available

SECTION 12. Ecological Information

Toxicity Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Alkylated quaternary chloride	Proprietary	No information available	LC50: 431 - 495 mg/L (Pimephales promelas)	No information available	No information available
Potassium hydroxide	1310-58-3	No information available	LC50(96h): 80 mg/L (Gambusia affinis) (TLm) Lethal Concentration(24h): 56 mg/L (Lepomis macrochirus) NOEC(24h): 28 mg/L (Lepomis macrochirus)	EC50(15m): 22 mg/L (Photobacterium phosphoreum)	TLM96: 251,200 ppm (Mysidopsis bahia) EC100(2d): > 10 mg/L (Dreissena polymorpha)

Persistence and Degradability

No information available

Bioaccumulation potential

No information available

Substances	Log Pow
Potassium hydroxide	0.65 - 0.83

Mobility in soil

No information available

Results of PBT and vPvB assessment

No information available.

Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13. Disposal Considerations

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

SECTION 14. Transport Information

Canadian TDG uI0

UN Number: UN2810
 UN Proper Shipping Name: Toxic Liquid, Organic, N.O.S. (Contains Tetramethylammonium Chloride)
 Transport Hazard Class(es): 6.1
 Packing Group: III

EMS: EmS F-A, S-A

IATA/CAO

UN Number: UN2810
UN Proper Shipping Name: Toxic Liquid, Organic, N.O.S. (Contains Tetramethylammonium Chloride)
Transport Hazard Class(es): 6.1
Packing Group: III

IMDG/IMO

UN Number: UN2810
UN Proper Shipping Name: Toxic Liquid, Organic, N.O.S. (Contains Tetramethylammonium Chloride)
Transport Hazard Class(es): 6.1
Packing Group: III
EMS: EmS F-A, S-A

Special Precautions for User: None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

SECTION 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

WHMIS Hazard Class

D1B Toxic Materials
E Corrosive Material

WHMIS Symbol(s)**US Regulations**

US TSCA Inventory All components listed on inventory or are exempt.

SECTION 16. Other Information

Preparation Information

Prepared By Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 20-Aug-2014

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.

Key or legend to abbreviations and acronyms

WHMIS: Workplace Hazardous Materials Information System

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

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