

MATERIAL SAFETY DATA SHEET**Product Trade Name:** Clayfix II Plus**Revision Date:** 05-Sep-2014**Revision Number:** 12**SECTION 1. Product and Company Identification****Product Identifier**

Product Trade Name: Clayfix II Plus
Synonyms: None
Chemical Family: Organic Salt
Internal ID Code: HM006534

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
D2B Toxic Materials

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

Hazard Overview May cause eye, skin, and respiratory irritation. May be fatal if swallowed.

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
Alkylated quaternary chloride	Proprietary	60 - 100%	8934	August 11, 2014

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 immediately.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If breathing has stopped, trained personnel should begin rescue breathing / artificial respiration (AR) immediately. If the heart has stopped, trained personnel should begin CPR immediately. Obtain medical attention immediately.

Most important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory irritation. 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**

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

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. Store locked up. 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

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area.

Personal Protective Equipment (PPE)**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.

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
Odor: Mild amine

Color: Colorless
Odor Threshold: No information available

Property

Remarks/ - Method

Values**pH:**

4- 9

pH Concentration of Solution:

No information available.

Freezing Point/Range

-40 °C

Melting Point/Range

No information available

Boiling Point/Range (C):

100 °C

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):

1.035

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):
VOC Content (%)

No information available.
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

Routes of entry

Eye or skin contact, inhalation. Ingestion.

Information on Toxicological Effects

Acute effects from exposure

Product Information

Inhalation

Eye Contact

Skin Contact

Ingestion

Under certain conditions of use, some of the product ingredients may cause the following:

May cause respiratory irritation.

Causes eye irritation.

May cause skin irritation. Harmful if absorbed through the skin.

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

Irritating to eyes and skin

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
Alkylated quaternary chloride	Proprietary	50 mg/kg (Rat)	> 200 - 1000 mg/kg (Rabbit)	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

Persistence and Degradability

No information available

Bioaccumulation potential

No information available

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. 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.

SECTION 14. Transport Information

Canadian TDG u10

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/ICAO

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
D2B Toxic Materials

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: 05-Sep-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/

NZ CCID

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