

MATERIAL SAFETY DATA SHEET

Product Trade Name: CleanBreak CRE

Revision Date: 25-Nov-2013

Revision Number: 5

1. Product and Company Identification

Product Identifier

Product Trade Name: CleanBreak CRE
Synonyms: None
Chemical Family: Blend
Internal ID Code: HM007086

Product Use

Application: Breaker

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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2. Hazard(s) Identification

WHMIS Classification

WHMIS Hazard Class: D2A Very Toxic Materials

WHMIS Symbol(s)Summary of hazards of the productHazard Overview

May cause allergic respiratory reaction. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Filing Date
Hemicellulase enzyme	9012-54-8	1 - 5%	Not applicable	Not applicable

4. First aid measures

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

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin

Wash with soap and water. Remove contaminated clothing and launder before reuse.

Ingestion

Do not induce vomiting. Drink two glasses of water. Call a physician.

Most important symptoms and effects, both acute and delayed

May cause mild eye, skin, and respiratory irritation. May cause sensitization by inhalation of enzyme dust.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Treat symptomatically

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**

Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

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

Carbon monoxide and carbon dioxide.

6. Accidental release measures

Personal precautions and emergency procedures**Protective Equipment**

Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures

None known.

Procedure for Cleaning / Absorption

Scoop up and remove.

7. Handling and Storage

Precautions for safe handling

Avoid creating or inhaling dust.

Conditions for safe storage and incompatible materials for storage

Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 18 months.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Hemicellulase enzyme	9012-54-8	Not applicable	Not applicable

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area.

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

Not normally needed. But if significant exposures are possible then the following respirator is recommended:

Dust/mist respirator. (N95, P2/P3)

Hand Protection

Impervious rubber gloves.

Skin Protection

Normal work coveralls.

Eye Protection

Safety glasses.

Other Precautions

None known.

9. Physical and Chemical Properties

Information on basic physical and chemical properties**Physical State:** Powder**Color:** Off white to tan**Odor:** Detergent**Odor Threshold:** No information availablePropertyRemarks/ - MethodValues**pH:**

3.8-8.0 (1%)

pH Concentration of Solution:

No information available.

Freezing Point/Range

202 °C

Melting Point/Range

No information available

Boiling Point/Range (C):

No information available.

Flash Point/Range (C):

No information available.

Flash Point Method:

Not Determined

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):

0.79

Solubility in Water (g/100ml):

Disperses

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

10. Stability and Reactivity

Conditions of Reactivity**Conditions to Avoid**

None anticipated

Hazardous Polymerization:

Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong alkalis. Moisture.

Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

Routes of entry

Eye or skin contact, inhalation.

Information on Toxicological Effects

Acute effects from exposure

Inhalation

May cause allergic respiratory reaction.

Eye Contact

May cause mechanical irritation to eye.

Skin Contact

Prolonged or repeated contact may cause skin irritation.

Ingestion

In normal industrial use, ingestion is not considered a probable route of exposure.

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

Non-irritating to the skin Non-irritating to the eye

Sensitization of product

Sensitization

May cause sensitization by inhalation

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
Hemicellulase enzyme	9012-54-8	> 2000 mg/kg (Rat) (Similar substance) > 10000 mg/kg (Rat) > 8000 mg/kg (Mouse)	No data available	> 3.5 mg/L (Rat) 4h >4.86 mg/L (Rat) 4h

12. Ecological Information

Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity for Invertebrates
Hemicellulase enzyme	9012-54-8	EC50(72h) >= 100 mg/L Total Organic Solids (Pseudokirchnerella subcapitata)	LC50(96h): >= 100 mg/L Total Organic Solids (Oncorhynchus mykiss)	No information available	EC50: > 39.5 mg/L (Daphnia magna) EC50(48h) >= 100 mg/L Total Organic Solids (Daphnia magna)

Persistence and Degradability

Readily biodegradable

Bioaccumulation potential

Does not bioaccumulate

Substances	Log Pow
Hemicellulase enzyme	-2.95 (Similar substance)

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

13. Disposal Considerations

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

Canadian TDG

UN Number: Not restricted.
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable

IATA/ICAO

UN Number: Not restricted.
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable

IMDG/IMO

UN Number: Not restricted.
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable

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

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

D2A Very Toxic Materials

WHMIS Symbol(s)**US Regulations****US TSCA Inventory**

All components listed on inventory or are exempt.

16. Other Information**Preparation Information****Prepared By**

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e-mail: fdunexchem@halliburton.com

Revision Date:

25-Nov-2013

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 datawww.ChemADVISOR.com/**Disclaimer Statement**

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