

MATERIAL SAFETY DATA SHEET

Product Trade Name: CleanBreak E

Revision Date: 25-Nov-2013

Revision Number: 4

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Trade Name: CleanBreak E
Synonyms: None
Chemical Family: Polysaccharide
Internal ID Code: HM007084

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 product****Hazard Overview**

May cause allergic respiratory reaction. May cause mild eye, skin, and respiratory irritation. 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. Get medical attention if irritation persists.

Ingestion

Under normal conditions, first aid procedures are not required.

Most important symptoms and effects, both acute and delayed

May cause mild eye, skin, and respiratory irritation. May cause allergic respiratory reaction.

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

Treat symptomatically

5. FIRE FIGHTING MEASURES

Extinguishing media**Suitable Extinguishing Media**

All standard fire fighting media

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

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption

Scoop up and remove.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid creating or inhaling dust. Slippery when wet.

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)**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

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

Wear safety glasses or goggles to protect against exposure.

Other Precautions

None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State: Powder

Color: White to Tan

Odor: Characteristic

Odor Threshold: No information available

PropertyValuesRemarks/ - Method**pH:**

3.8-8 (1%)

pH Concentration of Solution:

No information available.

Freezing Point/Range

No information available.

Melting Point/Range

No information available

Boiling Point/Range (C):

No information available.

Flash Point/Range (C):

No information available.

Flash Point Method:

No information available.

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):

No information available.

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 oxidizers.

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

<u>Inhalation</u>	May cause allergic respiratory reaction. May cause mild respiratory irritation.
<u>Eye Contact</u>	May cause mild eye irritation.
<u>Skin Contact</u>	None known.
<u>Ingestion</u>	None known

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) > 10000 mg/kg (Rat) > 8000 mg/kg (Mouse)	No data available	> 3.5 mg/L (Rat) 4h

12. ECOLOGICAL INFORMATION**Toxicity****Ecotoxicity Effects**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Hemicellulase enzyme	9012-54-8	No information available	No information available	No information available	EC50: > 39.5 mg/L (Daphnia magna)

Persistence and Degradability

Readily biodegradable

Bioaccumulation potential

Does not bioaccumulate

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

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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 data

www.ChemADVISOR.com/

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END OF MSDS