

MATERIAL SAFETY DATA SHEET

Product Trade Name: CleanBreak E

Revision Date: 07-Jan-2015

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: CleanBreak E
Synonyms: None
Chemical Family: Polysaccharide
Application: Breaker

Manufacturer/Supplier Halliburton Energy Services
P.O. Box 1431
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Emergency Telephone: (281) 575-5000

Prepared By Chemical Compliance
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Hemicellulase enzyme	9012-54-8	1 - 5%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

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.

4. FIRST AID MEASURES

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

Skin Wash with soap and water. Get medical attention if irritation persists.

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

Ingestion Under normal conditions, first aid procedures are not required.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined Min: > 200
Flash Point/Range (C):	Not Determined Min: > 93
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media All standard firefighting media.

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.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 1, Flammability 1, Reactivity 0
HMIS Ratings: Health 1, Flammability 1, Physical Hazard 0 , PPE: X

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures 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

Handling Precautions Avoid creating or inhaling dust. Slippery when wet.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

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

Physical State:	Powder
Color:	White to Tan
Odor:	Characteristic
pH:	3.8-8 (1%)
Specific Gravity @ 20 C (Water=1):	Not Determined
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Disperses
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure

Acute Toxicity

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

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

Toxicology data for the components

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) > 2880 mg/kg (Rat)	No data available	> 3.5 mg/L (Rat) 4h > 4.86 mg/L (Rat) 4h

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Hemicellulase enzyme	9012-54-8	EC50(72h) >= 100 mg/L Total Organic Solids (Pseudokirchnerella subcapitata) EC50(72h): > 52.1 mg/L (Biomass) (Pseudokirchnerella subcapitata)	LC50(96h): >= 100 mg/L Total Organic Solids (Oncorhynchus mykiss) LC50(96h): > 52.1 mg/L (Oncorhynchus mykiss)	No information available	EC50(48h): > 39.5 mg/L (Daphnia magna) EC50(48h): >= 100 mg/L Total Organic Solids (Daphnia magna) EC50(48h): > 52.1 mg/L (mobility) (Daphnia magna)

12.2. Persistence and degradability

Readily biodegradable

Substances	CAS Number	Persistence and Degradability
Hemicellulase enzyme	9012-54-8	Readily biodegradable (129% @ 28d)

12.3. Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Hemicellulase enzyme	9012-54-8	-2.95 (Similar substance)

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

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

US DOT

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

<u>US DOT Bulk</u>	
DOT (Bulk)	Not applicable

<u>Canadian TDG ul0</u>	
UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable

<u>IMDG/IMO</u>	
UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable

<u>IATA/ICAO</u>	
UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable

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.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	None
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	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	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

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

WHMIS Hazard Class D2A Very Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS

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.

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