

MATERIAL SAFETY DATA SHEET**Product Trade Name: BC-200**

Revision Date: 20-Feb-2014

Revision Number: 16

1. Product and Company Identification**Product Identifier**

Product Trade Name: BC-200
Synonyms: None
Chemical Family: Blend
Internal ID Code: HM000111

Product Use**Application:** Crosslinker**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
 Telephone: 1-580-251-4335
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2. Hazard(s) Identification**WHMIS Classification**

WHMIS Hazard Class B3 Combustible Liquids
 D2A Very Toxic Materials
 D2B Toxic Materials

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

Hazard Overview May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Potential carcinogen. Combustible

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Filing Date
Diesel	68476-34-6	30 - 60%	Not applicable	Not applicable
Sodium carbonate	497-19-8	5 - 10%	Not applicable	Not applicable

Naphthalene	91-20-3	0.1 - 1%	Not applicable	Not applicable
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4. First aid measures

Description of first aid measures

Inhalation	If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.
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	Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Most important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.

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

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

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. Wear self-contained breathing apparatus in enclosed areas.

Environmental Precautionary Measures

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and Storage

Precautions for safe handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Conditions for safe storage and Incompatible materials for storage

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 6 months.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Diesel	68476-34-6	TWA: 100 mg/m ³	Not applicable
Sodium carbonate	497-19-8	Not applicable	Not applicable
Naphthalene	91-20-3	TWA: 10 ppm STEL: 15 ppm	10 ppm

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

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

Organic vapor respirator with a dust/mist filter. (A2P2/P3)

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.

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

Physical State: Liquid

Color: Tan

Odor: Diesel

Odor Threshold: No information available

Property

Remarks/ - Method

Values**pH:**

No information available.

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. °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):

1

Specific Gravity @ 20 C (Water=1):

1.20

Solubility in Water (g/100ml):

Insoluble

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

Hazardous Polymerization:

Keep away from heat, sparks and flame.
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

Inhalation

May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact

May cause eye irritation

Skin Contact

May cause skin irritation. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.

Ingestion

Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic effects from exposure

Chronic Effects/Carcinogenicity

Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals.

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

Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals.

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
Diesel	68476-34-6	No data available	No data available	No data available
Sodium carbonate	497-19-8	4090 mg/kg (Rat) 2800 mg/kg (Rat)	2210 mg/kg (Mouse) > 2000 mg/kg (Rabbit)	LC50: 2.3 mg/L (Rat) 2h
Naphthalene	91-20-3	490 mg/kg (Rat)	2500 mg/kg (Rat) 20 g/kg (Rabbit) 1120 mg/kg (Rabbit)	340 mg/m ³ (Rat) 1 h

12. Ecological Information

Toxicity**Ecotoxicity Effects**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity for Invertebrates
Diesel	68476-34-6	No information available	LC50: 35 mg/l (Pimephales promelas)	No information available	No information available
Sodium carbonate	497-19-8	EC50: 242 mg/L (Nitzschia)	TLM24: 385 mg/l (Lepomis macrochirus) LC50: 310-1220 mg/L (Pimephales promelas) LC50(96h): 300 mg/L (Lepomis macrochirus)	No information available	EC50: 265 mg/L (Daphnia magna) EC50(48h): 200 – 227 mg/L (Ceriodaphnia sp.)
Naphthalene	91-20-3	EC50(72h): 0.4 mg/L (Skeletonema costatum)	LC50(96h) 6.08 mg/L (Pimephales promelas) LC50(96h): 1.2 mg/L (Oncorhynchus gorbuscha) LC50(96h): 1.6 mg/L (Oncorhynchus mykiss) NOEC(40d): 0.37 mg/L (Oncorhynchus kisutch) NOEC(30d): < 0.85 mg/L Pimephales promelas)	No information available	EC50(48h): 2.16 mg/L (Daphnia magna)

Persistence and Degradability

No information available

Bioaccumulation potential

No information available

Substances	Log Pow
Sodium carbonate	0
Naphthalene	3.28

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** Disposal should be made in accordance with 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	B3 Combustible Liquids D2A Very Toxic Materials D2B Toxic Materials
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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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Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date:

20-Feb-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/

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END OF MSDS