HALLIBURTON

SAFETY DATA SHEET

Product Trade Name: **BaraShield®-632**

Revision Date: 31-Dec-2015 **Revision Number:** 0

1. Identification

1.1. Product Identifier

Product Trade Name: BaraShield®-632
Synonyms: None
Chemical Family: Blend
Internal ID Code HM008242

1.2 Recommended use and restrictions on use

Application: Loss Circulation Material
Uses Advised Against Consumer use

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier
Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 575-5000
Emergency Telephone: 1-866-519-4752 (US, Canada, Mexico) or 1-760-476-3962

Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number 1-866-519-4752 or 1-760-476-3962

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Combustible dust	Combustible dust

2.2. Label Elements

Hazard Pictograms

Signal Word Warning

Hazard Statements

May form combustible dust concentrations in air.

Precautionary Statements

Prevention	None
Response	None
Storage	None
Disposal	None

2.3 Hazards not otherwise classified
None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Carbon	Proprietary	30 - 60%	Combustible Dust
Nut hulls	Proprietary	30 - 60%	Combustible dust

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. 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 Rinse mouth with water many times. Get medical attention if symptoms occur

4.2 Most important symptoms/effects, acute and delayed
No significant hazards expected.

4.3. Indication of any immediate medical attention and special treatment needed
Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media
Suitable Extinguishing Media

Water spray. Carbon dioxide (CO2). Foam. Dry powder

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture
Special Exposure Hazards

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

5.3 Special protective equipment and precautions for fire-fighters
Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Remove sources of ignition. Avoid creating and breathing dust. Ensure adequate ventilation. Use only competent persons for cleanup.
See Section 8 for additional information

6.2. Environmental precautions

None known.

6.3. Methods and material for containment and cleaning up

Cover powder spill with plastic sheet or tarp to minimize spreading
Scoop up and remove.

7. Handling and storage

7.1. Precautions for Safe Handling

Handling Precautions

Avoid contact with eyes, skin, or clothing. Use appropriate protective equipment. Ensure adequate ventilation. Avoid creating or inhaling dust. Avoid dust accumulations. Remove sources of ignition. Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and dark procedures for low oxygen levels should be taken to ensure ample oxygen availability.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from oxidizers. Store in a dry location. Store in a cool well ventilated area. Keep from heat, sparks, and open flames. Product has a shelf life of 60 months.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Carbon	Proprietary	Not applicable	Not applicable
Nut hulls	Proprietary	Not applicable	Not applicable

8.2 Appropriate engineering controls

Engineering Controls A well ventilated area to control dust levels. Localized ventilation should be used to control dust levels.

8.3 Individual protection measures, such as personal protective equipment

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 Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

Skin Protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection	Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles, Face-shield.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Powder and Granules
Color: Brown
Odor: Odorless
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	No data available
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	4200 °C / 7592 °F
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	1 mmHg
Vapor Density	No data available
Specific Gravity	1.75
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

Keep away from heat, sparks and flame.

10.5. Incompatible Materials

Strong acids.

10.6. Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation. Ingestion.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation May cause mild respiratory irritation.

Eye Contact May cause mild eye irritation.

Skin Contact May cause mild skin irritation.

Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Carbon	Proprietary	No data available	No data available	> 0.046 mg/ (Rat) 4h > 0.3 mg/L 4h (similar substance)
Nut hulls	Proprietary	No data available	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Carbon		Non-irritating to the skin
Nut hulls		No information available.

Substances	CAS Number	Eye damage/irritation
Carbon		Non-irritating to the eye
Nut hulls		No data of sufficient quality are available.

Substances	CAS Number	Skin Sensitization
Carbon		No information available
Nut hulls		No information available

Substances	CAS Number	Respiratory Sensitization
Carbon		No information available
Nut hulls		No information available

Substances	CAS Number	Mutagenic Effects
Carbon		In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)
Nut hulls		No information available

Substances	CAS Number	Carcinogenic Effects
Carbon		Did not show carcinogenic effects in animal experiments (similar substances)
Nut hulls		No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity
Carbon		Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Nut hulls		No information available

Substances	CAS Number	STOT - single exposure
Carbon		No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Nut hulls		No data of sufficient quality are available.

Substances	CAS Number	STOT - repeated exposure
Carbon		No significant toxicity observed in animal studies at concentration requiring classification. (similar

		substances)
Nut hulls		No data of sufficient quality are available.

Substances	CAS Number	Aspiration hazard
Carbon		Not applicable
Nut hulls		No information available

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product is not classified as hazardous to the environment.

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Carbon	Proprietary	ErL50 (96h) > 1000 mg/L (Selenastrum capricornutum) NOELR (96h) > 1000 mg/L (Selenastrum capricornutum)	LL50 (96h) > 1000 mg/L (Pimephales promelas)	No information available	EL50 (48h) > 1000 mg/L (Daphnia magna)
Nut hulls	Proprietary	No information available	No information available	No information available	TLM (96h) > 1,000,000 ppm (Mysidopsis bahia)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Carbon	Proprietary	The methods for determining biodegradability are not applicable to inorganic substances.
Nut hulls	Proprietary	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Carbon	Proprietary	No information available
Nut hulls	Proprietary	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Carbon	Proprietary	No information available
Nut hulls	Proprietary	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Dispose of container according to 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
Environmental Hazards: Not applicable

US DOT Bulk
DOT (Bulk) Not applicable

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

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

IATA/ICAO
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: 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.

TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2
Carbon	Proprietary	Not applicable
Nut hulls	Proprietary	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Carbon	Proprietary	Not applicable
Nut hulls	Proprietary	Not applicable

EPA SARA (311,312) Hazard Class
None

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Carbon	Proprietary	Not applicable	Not applicable
Nut hulls	Proprietary	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Carbon	Proprietary	Not applicable
Nut hulls	Proprietary	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.

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

Canadian Regulations

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

16. Other information

Preparation Information

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

Revision Date: 31-Dec-2015

Reason for Revision Initial Release

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 Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour

mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
OSHA
ECHA C&L
www.ChemADVISOR.com/

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End of Safety Data Sheet