

SAFETY DATA SHEET

MAX-YIELD TCM

Product Trade Name:

Revision Date: 22-Jun-2018

Revision Number: 1

1. Identification

1.1. Product Identifier

Product Trade Name: MAX-YIELD TCM
Synonyms: None
Chemical Family: Graphite
Internal ID Code: HM008846

1.2 Recommended use and restrictions on use

Application: Lost Circulation Material
Uses advised against: No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier

Baroid Industrial Drilling Products
Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4613 or 1-877-379-7412

Baroid Industrial Drilling Products
645 - 7th Ave SW Suite 1800
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
Global Incident Response Access Code: 334305
Contract Number: 14012

2. Hazards 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	P280 - Wear protective gloves/protective clothing/eye protection/face protection
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
Graphite	7782-42-5	60 - 100%	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 information available

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 fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering.

5.2 Specific hazards arising from the substance or mixture**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

5.3 Special protective equipment and precautions for fire-fighters**Special protective equipment for firefighters**

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

Ensure adequate ventilation. Use appropriate protective equipment. Remove sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. See Section 8 for additional information.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Remove ignition sources and work with non-sparking tools. Scoop up and remove.

7. Handling and storage**7.1. Precautions for safe handling****Handling Precautions**

Ensure adequate ventilation. Use appropriate protective equipment. Remove sources of ignition. Ground and bond containers when transferring from one container to another.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities**Storage Information**

Store in a cool well ventilated area. Keep from heat, sparks, and open flames.

8. Exposure Controls/Personal Protection**8.1 Occupational Exposure Limits**

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Graphite	7782-42-5	TWA: 15 mg/m ³ TWA: 5 mg/m ³	TWA: 2 mg/m ³

8.2 Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas

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 If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

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 protective clothing appropriate for the work environment.

Eye Protection Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles, Face-shield.

Other Precautions None known.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Powder	Color	Gray to black
Odor: Odorless	Odor	No information available
	Threshold:	

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	No data available
Freezing Point / Range	No data available
Melting Point / Range	3652-3697 °C / 6605-6686 °F
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	No data available
Vapor Density	No data available
Specific Gravity	No data available
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
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10. Stability and Reactivity**10.1. Reactivity**

May form combustible dust concentrations in air.

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 oxidizers. Strong acids. Strong alkalis.

10.6. Hazardous decomposition products

Carbon oxides.

11. Toxicological Information**11.1 Information on likely routes of exposure**

Principle Route of Exposure Ingestion. Skin contact. Eye contact. Inhalation.

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
Graphite	7782-42-5	10,000 mg/kg (Rat) 2,000 mg/kg (Rat)	No data available	> 2,000 mg/L (Rat, 4h)

Substances	CAS Number	Skin corrosion/irritation
Graphite	7782-42-5	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Serious eye damage/irritation
Graphite	7782-42-5	Non-irritating to rabbit's eye

Substances	CAS Number	Skin Sensitization
Graphite	7782-42-5	Did not cause sensitization on laboratory animals

Substances	CAS Number	Respiratory Sensitization
Graphite	7782-42-5	No information available

Substances	CAS Number	Mutagenic Effects
Graphite	7782-42-5	In vitro tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Graphite	7782-42-5	No information available

Substances	CAS Number	Reproductive toxicity
Graphite	7782-42-5	Animal testing did not show any effects on fertility.

Substances	CAS Number	STOT - single exposure
Graphite	7782-42-5	May cause disorder and damage to the Lungs

Substances	CAS Number	STOT - repeated exposure
Graphite	7782-42-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Graphite	7782-42-5	No information available

12. Ecological Information**12.1. Toxicity****Ecotoxicity effects**

Product is not classified as hazardous to the environment.

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Graphite	7782-42-5	EC50 (72h) >100 mg/L (Pseudokirchnerella subcapitata)	LC50 (96h) > 100 mg/L (Danio rerio)	EC50 (3h) > 1012.5 mg/L (Activated sludge)	EC50 (48h) >100 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Graphite	7782-42-5	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Graphite	7782-42-5	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Graphite	7782-42-5	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations**13.1. Waste treatment methods**

Disposal methods Disposal should be made in accordance with 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
Environmental Hazards: 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
Graphite	7782-42-5	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Graphite	7782-42-5	Not applicable

EPA SARA (311,312) Hazard Class

Combustible dust

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Graphite	7782-42-5	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Graphite	7782-42-5	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

Substances	CAS Number	California Proposition 65
Graphite	7782-42-5	Not applicable

U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Graphite	7782-42-5	Present	Present	Present

Canadian Regulations

Canadian Domestic Substances List (DSL) 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:

22-Jun-2018

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 used in the safety data sheet

bw – body weight

CAS – Chemical Abstracts Service

d - day

EC50 – Effective Concentration 50%

ErC50 – Effective Concentration growth rate 50%

h - hour

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL50 – Lethal Loading 50%

mg/kg – milligram/kilogram

mg/L – milligram/liter

mg/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

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

w/w - weight/weight

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

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End of Safety Data Sheet