

## MATERIAL SAFETY DATA SHEET

Product Trade Name: **CARTRIDGE, 2 1/2 SHORTY - PC25082023**

Revision Date: 03-Jan-2012

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: CARTRIDGE, 2 1/2 SHORTY - PC25082023

Synonyms: None

Chemical Family: Explosive

Application: Explosive Charge

Manufacturer/Supplier: Halliburton Energy Services  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Titanium potassium perchlorate	Mixture	Unknown	Not applicable	Not applicable

### 3. HAZARDS IDENTIFICATION

Hazard Overview: Explosive. May cause eye, skin, and respiratory irritation. May effect the blood's ability to carry oxygen. May be harmful if swallowed.

### 4. 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.

**Skin**: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Destroy or properly dispose of contaminated shoes.

**Eyes**: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion**: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician**: Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	400
Autoignition Temperature (C):	204
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** Flammable solid, may detonate under adverse conditions. Oxidizer. May ignite combustibles. Sprinkler and/or deluge systems recommended for bulk storage areas.

**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 3

**HMS Ratings:** Health 1, Flammability 1, Reactivity 3

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Use only competent persons for cleanup.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Do NOT consume food, drink, or tobacco in contaminated areas. Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash hands after use. Launder contaminated clothing before reuse.

**Storage Information** Keep away from friction, impact, and heat. Store away from combustibles.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area.

**Respiratory Protection** Dust/mist respirator. (95%)

**Hand Protection** Cloth gloves.

**Skin Protection** Cotton coveralls, undergarments, and socks. Conductive soled shoes. Anti-static clothing.

**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

**Physical State:** Solid  
**Color:** Gray to black

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Odorless
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.04
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):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	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	May detonate with friction, impact, heat, and low level electrical current.
Incompatibility (Materials to Avoid)	Strong alkalis. Strong acids. Combustible materials. Organic matter. Reducing agents.
Hazardous Decomposition Products	Oxides of nitrogen. Chlorine. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation. All explosives are dangerous and must be handles carefully and used following approved safety procedures under the direction of competent, experience persons in accordance with all applicable regulations and ordinances.
Inhalation	May cause respiratory irritation. May cause blood disorders including prolonged weakness and fatigue.
Skin Contact	May cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	May reduce the blood's ability to transport oxygen (methemalobinemia).
Aggravated Medical Conditions	Blood disorders. Eye ailments.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	

<b>Oral Toxicity:</b>	Not determined
<b>Dermal Toxicity:</b>	Not determined
<b>Inhalation Toxicity:</b>	Not determined
<b>Primary Irritation Effect:</b>	Not determined
<b>Carcinogenicity</b>	Not determined
<b>Genotoxicity:</b>	Not determined
<b>Reproductive / Developmental Toxicity:</b>	Not determined

## 12. ECOLOGICAL INFORMATION

<b>Mobility (Water/Soil/Air)</b>	Not determined
<b>Persistence/Degradability</b>	Not applicable
<b>Bio-accumulation</b>	Not determined

### Ecotoxicological Information

<b>Acute Fish Toxicity:</b>	Not determined
<b>Acute Crustaceans Toxicity:</b>	Not determined
<b>Acute Algae Toxicity:</b>	Not determined

<b>Chemical Fate Information</b>	Not determined
<b>Other Information</b>	Not applicable

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal Method</b>	Disposal should be made in accordance with federal, state, and local regulations.
<b>Contaminated Packaging</b>	Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

#### DOT

UN0323, Cartridges, Power Device, 1.4S, II  
EX-8312289  
NAERG 114

#### Canadian TDG

Cartridges, Power Device, 1.4S, UN0323, II  
EX-8312289

#### ADR

UN0323, Cartridges, Power Device, 1.4S, II  
EX-8312289

## Air Transportation

### ICAO/IATA

UN0323, Cartridges, Power Device, 1.4S, II  
EX-8312289

## Sea Transportation

### IMDG

UN0323, Cartridges, Power Device, 1.4S, II  
EX-8312289  
EmS F-B, S-X

## Other Transportation Information

Labels: Explosive 1.4S

## 15. REGULATORY INFORMATION

### US Regulations

<b>US TSCA Inventory</b>	All components listed on inventory or are exempt.
<b>EPA SARA Title III Extremely Hazardous Substances</b>	Not applicable
<b>EPA SARA (311,312) Hazard Class</b>	Acute Health Hazard Fire Hazard Reactive Hazard
<b>EPA SARA (313) Chemicals</b>	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
<b>EPA CERCLA/Superfund Reportable Spill Quantity</b>	Not applicable.
<b>EPA RCRA Hazardous Waste Classification</b>	If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:  Reactivity D003
<b>California Proposition 65</b>	All components listed do not apply to the California Proposition 65 Regulation.
<b>MA Right-to-Know Law</b>	Does not apply.
<b>NJ Right-to-Know Law</b>	Does not apply.
<b>PA Right-to-Know Law</b>	Does not apply.
<b>Canadian Regulations</b>	
<b>Canadian DSL Inventory</b>	All components listed on inventory or are exempt.
<b>WHMIS Hazard Class</b>	F Dangerously Reactive Material

## 16. OTHER INFORMATION

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

Not applicable

### Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

### Disclaimer Statement

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