

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:** CHARGE 2 1/8 DYNA-STAR RDX - C2120420

**Revision Date:** 04-Jan-2011

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** CHARGE 2 1/8 DYNA-STAR RDX - C2120420  
**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           |
|-------------------------------------|------------|---------|------------------------|------------------------|
| Tin                                 | 7440-31-5  | 1 - 5%  | 2 mg/m <sup>3</sup>    | 2 mg/m <sup>3</sup>    |
| Tungsten                            | 7440-33-7  | 5 - 10% | 5 mg/m <sup>3</sup>    | Not applicable         |
| Graphite                            | 7782-42-5  | 0 - 1%  | 2 mg/m <sup>3</sup>    | 15 mg/m <sup>3</sup>   |
| Cyclotrimethylenetrinitramine (RDX) | 121-82-4   | 0-10    | 0.5 mg/m <sup>3</sup>  | Not applicable         |
| Iron                                | 7439-89-6  | NF      | Not applicable         | 10 mg/m <sup>3</sup>   |
| Lead                                | 7439-92-1  | NF      | 0.05 mg/m <sup>3</sup> | 0.05 mg/m <sup>3</sup> |
| Aluminum                            | 7429-90-5  | NF      | 10 mg/m <sup>3</sup>   | 15 mg/m <sup>3</sup>   |
| Corrosion resistant steel           | Mixture    | NF      | Not applicable         | Not applicable         |
| Desensitizing wax                   | Mixture    | NF      | Not applicable         | Not applicable         |
| Copper                              | 7440-50-8  | 5 - 10% | 1 mg/m <sup>3</sup>    | 1 mg/m <sup>3</sup>    |

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** Explosive. May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. 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** Get medical attention if irritation persists.

**Eyes** Under normal conditions, first aid procedures are not required. 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.

|                           |                                                                                                                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ingestion</b>          | Under normal conditions, first aid procedures are not required. 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. |
| <b>Notes to Physician</b> | Treat symptomatically.                                                                                                                                                                                                     |

## 5. FIRE FIGHTING MEASURES

|                                                |                |
|------------------------------------------------|----------------|
| <b>Flash Point/Range (F):</b>                  | Not Determined |
| <b>Flash Point/Range (C):</b>                  | Not Determined |
| <b>Flash Point Method:</b>                     | Not Determined |
| <b>Autoignition Temperature (F):</b>           | Not Determined |
| <b>Autoignition Temperature (C):</b>           | Not Determined |
| <b>Flammability Limits in Air - Lower (%):</b> | Not Determined |
| <b>Flammability Limits in Air - Upper (%):</b> | Not Determined |

**Fire Extinguishing Media** None. Do NOT fight fire. Isolate area and evacuate personnel to a safe area. Guard against intruders. Allow fire to burn itself out.

**Special Exposure Hazards** May detonate with impact or on heating. May explode and throw fragments 1 mile or more in fire. Evacuate all persons, including emergency responders.

**Special Protective Equipment for Fire-Fighters** Not applicable.

**NFPA Ratings:** Health 1, Flammability 3, Reactivity 4  
**HMIS Ratings:** Health 1, Flammability 3, Reactivity 4

## 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. Remove ignition sources and work with non-sparking tools.

## 7. HANDLING AND STORAGE

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

**Storage Information** Store only in ATF approved magazines. Keep away from friction, impact, and heat.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| <b>Engineering Controls</b>   | Use in a well ventilated area.                                      |
| <b>Respiratory Protection</b> | Dust/mist respirator. (95%)                                         |
| <b>Hand Protection</b>        | Cloth gloves.                                                       |
| <b>Skin Protection</b>        | Cotton coveralls, undergarments, and socks. Conductive soled shoes. |
| <b>Eye Protection</b>         | Wear safety glasses or goggles to protect against exposure.         |
| <b>Other Precautions</b>      | None known.                                                         |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                             |                |
|---------------------------------------------|----------------|
| Physical State:                             | Solid          |
| Color:                                      | Metallic       |
| Odor:                                       | Odorless       |
| pH:                                         | Not Determined |
| 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):              | 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 acids. Strong alkalis.                                                   |
| Hazardous Decomposition Products     | Shrapnel. Oxides of nitrogen. Metal oxides. Carbon monoxide and carbon dioxide. |
| Additional Guidelines                | Not Applicable                                                                  |

## 11. TOXICOLOGICAL INFORMATION

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Principle Route of Exposure | Product does not present exposures health hazards during normal handling and use. However, this product is an explosive material and uncontrolled detonation may cause severe physical injury including death. 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 effects to the blood and blood system. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.<br>May cause damage to the nervous, urinary, and reproductive systems. Nitrogen oxides generated during use are irritating to the respiratory system.                                                         |
| Skin Contact                | May be absorbed through the skin and contribute to the symptoms listed under ingestion. Nitrogen oxides generated during use are skin irritants.                                                                                                                                                                                                                                                                                           |

|                                               |                                                                                                                                                                                           |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                            | May cause eye irritation.                                                                                                                                                                 |
| <b>Ingestion</b>                              | May cause abdominal pain, vomiting, nausea, and diarrhea.                                                                                                                                 |
| <b>Aggravated Medical Conditions</b>          | None known.                                                                                                                                                                               |
| <b>Chronic Effects/Carcinogenicity</b>        | Prolonged or repeated exposure may cause blood forming system, nervous, urinary tract and reproductive system damage. Prolonged or repeated exposure may cause embryo and fetus toxicity. |
| <b>Other Information</b>                      | None known.                                                                                                                                                                               |
| <b>Toxicity Tests</b>                         |                                                                                                                                                                                           |
| <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> | Do NOT reuse container. Store only in ATF approved magazines.                     |

## 14. TRANSPORT INFORMATION

### Land Transportation

DOT

UN0440,Charges, Shaped, 1.4D, II  
EX-9007085 EX-9007086  
NAERG 114

#### Canadian TDG

Charges, Shaped, 1.4D, UN0440, II  
EX-9007085 EX-9007086

#### ADR

UN0440,Charges, Shaped, 1.4D, II  
EX-9007085 EX-9007086

### Air Transportation

#### ICAO/IATA

UN0440,Charges, Shaped, 1.4D, II  
EX-9007085 EX-9007086

### Sea Transportation

#### IMDG

UN0440,Charges, Shaped, 1.4D, II  
EX-9007085 EX-9007086  
EmS F-B, S-X

### Other Transportation Information

Labels: Explosive 1.4D

## 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                   | Acute Health Hazard<br>Fire Hazard<br>Sudden Release of Pressure Hazard                                                                                                                                                          |
| EPA SARA (313) Chemicals                          | This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372:<br>Lead//7439-92-1<br>Copper//7440-50-8<br>Aluminum//7429-90-5 |
| EPA CERCLA/Superfund Reportable Spill Quantity    | EPA Reportable Spill Quantity is 400 Pounds based on Lead (CAS: 7439-92-1).                                                                                                                                                      |

|                                                |                                                                                                                                         |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <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:<br><br>Reactivity D003 |
| <b>California Proposition 65</b>               | The California Proposition 65 regulations apply to this product.                                                                        |
| <b>MA Right-to-Know Law</b>                    | One or more components listed.                                                                                                          |
| <b>NJ Right-to-Know Law</b>                    | One or more components listed.                                                                                                          |
| <b>PA Right-to-Know Law</b>                    | One or more components listed.                                                                                                          |
| <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\*\*\***