

# SAFETY DATA SHEET

## BOOSTER PELLETS RDX

**Product Trade Name:****Revision Date:** 18-May-2015**Revision Number:** 6**1. Identification****1.1. Product Identifier**

**Product Trade Name:** BOOSTER PELLETS RDX  
**Synonyms:** None  
**Chemical Family:** Explosive  
**Internal ID Code** HM005846

**1.2 Recommended use and restrictions on use**

**Application:** Explosive Charge  
**Uses Advised Against** No information available

**1.3 Manufacturer's Name and Contact Details**

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

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

**1.4. Emergency telephone number**

**Emergency Telephone Number** (281) 575-5000

**2. Hazard(s) Identification****2.1 Classification in accordance with paragraph (d) of §1910.1200**

Acute Oral Toxicity	Category 3 - H301
Specific Target Organ Toxicity - (Single Exposure)	Category 1 - H370
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373
Acute Aquatic Toxicity	Category 3 - H402
Explosives.	Division 1.4 - H204

**2.2. Label Elements****Hazard Pictograms**

**Signal Word**

Danger

**Hazard Statements**

H204 - Fire or projection hazard  
H301 - Toxic if swallowed  
H370 - Causes damage to organs  
H373 - May cause damage to organs through prolonged or repeated exposure  
H402 - Harmful to aquatic life

**Precautionary Statements****Prevention**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
P240 - Ground/Bond container and receiving equipment  
P250 - Do not subject to grinding/shock/friction  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P273 - Avoid release to the environment  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician  
P330 - Rinse mouth  
P314 - Get medical attention/advice if you feel unwell  
P370 + P380 - In case of fire: Evacuate area  
P372 - Explosion risk in case of fire  
P373 - DO NOT fight fire when fire reaches explosives

**Storage**

P405 - Store locked up  
P420 - Store away from other materials

**Disposal**

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains****Substances**

Cyclotrimethylenetrinitramine (RDX)

**CAS Number**

121-82-4

**2.3 Hazards not otherwise classified**

None known

### 3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Cyclotrimethylenetrinitramine (RDX)	121-82-4	60 - 100%	Acute Tox. 3 (H301) STOT SE 1 (H370) STOT RE 2 (H373) Aquatic Acute 3 (H402) Expl. 1.1 (H201)

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

### 4. First-Aid Measures

#### 4.1. Description of first aid measures

<b>Inhalation</b>	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<b>Eyes</b>	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>Skin</b>	Wash with soap and water. Get medical attention if irritation persists.
<b>Ingestion</b>	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

#### 4.2 Most important symptoms/effects, acute and delayed

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May effect the blood's ability to carry oxygen. Toxic if swallowed. May cause damage to internal organs. Prolonged or repeated exposure may cause damage to organs.

#### 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

Do NOT fight fire. Isolate area and evacuate personnel to a safe area. Guard against intruders. Allow fire to burn itself out.

##### 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

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

#### 5.3 Special protective equipment and precautions for fire-fighters

##### Special Protective Equipment for Fire-Fighters

Not applicable.

### 6. Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Use only competent persons for cleanup.  
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**

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****7.1. Precautions for Safe Handling****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.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

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

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

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

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Not applicable	TWA: 0.5 mg/m <sup>3</sup>

**8.2 Appropriate engineering controls**

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

**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** Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Cloth gloves.

**Skin Protection** Cotton coveralls, undergarments, and socks. Conductive soled shoes.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**9. Physical and Chemical Properties****9.1. Information on basic physical and chemical properties**

<b>Physical State:</b> Solid	<b>Color:</b> Metallic
<b>Odor:</b> Odorless	<b>Odor Threshold:</b> No information available

**Property**

Remarks/ - Method

**Values**

**pH:**

No data available

**Freezing Point/Range**

No information available.

**Melting Point/Range**

No data available

**Boiling Point/Range**

No data available

**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**

Not expected to be reactive.

**10.2. Chemical Stability**

Stable

**10.3. Possibility of Hazardous Reactions**

Will Not Occur

**10.4. Conditions to Avoid**

May detonate with friction, impact, heat, and low level electrical current.

**10.5. Incompatible Materials**

Strong acids. Strong alkalis.

**10.6. Hazardous Decomposition Products**

Shrapnel. Oxides of nitrogen. Metal oxides. 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. 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.
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**11.2 Symptoms related to the physical, chemical and toxicological characteristics****Acute Toxicity****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. May cause damage to the nervous, urinary, and reproductive systems. Nitrogen oxides generated during use are irritating to the respiratory system.

**Eye Contact**  
**Skin Contact**

May cause eye irritation.

May be absorbed through the skin and contribute to the symptoms listed under ingestion. Nitrogen oxides generated during use are skin irritants.

**Ingestion**

Toxic if swallowed. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** 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.

**11.3 Toxicity data****Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclotrimethylenetrinitramine (RDX)	121-82-4	100 mg/kg (Rat) 187 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	No data available

Substances	CAS Number	Skin corrosion/irritation
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Not irritating to skin in rabbits.

Substances	CAS Number	Eye damage/irritation
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Non-irritating to rabbit's eye

Substances	CAS Number	Skin Sensitization
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Cyclotrimethylenetrinitramine (RDX)	121-82-4	No information available

Substances	CAS Number	Mutagenic Effects
Cyclotrimethylenetrinitramine (RDX)	121-82-4	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Cyclotrimethylenetrinitramine (RDX)	121-82-4	No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Cyclotrimethylenetrinitramine (RDX)	121-82-4	May cause disorder and damage to the Central Nervous System (CNS)

Substances	CAS Number	STOT - repeated exposure
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Causes damage to organs through prolonged or repeated exposure if swallowed: Central Nervous System (CNS)

Substances	CAS Number	Aspiration hazard
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Not applicable

**12. Ecological Information****12.1. Toxicity**

**Ecotoxicity Effects****Product Ecotoxicity Data**

No data available

**Substance Ecotoxicity Data**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Cyclotrimethylenetrinitramine (RDX)	121-82-4	EC50 (96h) 36.7 mg/L (Pseudokircheriella subcapitata)	LC50 (96h) 11.14-14.97 mg/L (Pimephales promelas) NOEC (28d) 1.4 mg/L (Pimephales promelas)	NOEC (12wk) 6143 mg/kg (Soil dwelling bacteria)	EC50 (56d) 3.7 mg/kg (Eisenia fetida) EC50 (48h) >17 mg/L (Ceriodaphnia dubia) LOEC (7d) 6.01 mg/L (Ceriodaphnia dubia)

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Cyclotrimethylenetrinitramine (RDX)	121-82-4	Readily biodegradable (69% @ 10d)

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Cyclotrimethylenetrinitramine (RDX)	121-82-4	0.87

**12.4. Mobility in soil**

Substances	CAS Number	Mobility
Cyclotrimethylenetrinitramine (RDX)	121-82-4	KOC = 42-167

**12.5 Other adverse effects**

No information available

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

<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****US DOT**

<b>UN Number:</b>	UN0349
<b>UN Proper Shipping Name:</b>	Articles, Explosive, N.O.S., (Pressed Desensitized Pellets of RDX)
<b>Transport Hazard Class(es):</b>	1.4S
<b>Packing Group:</b>	II
<b>EX Number:</b>	EX-8312569
<b>Environmental Hazards:</b>	Not applicable
<b>NAERG:</b>	NAERG 114

**US DOT Bulk**

<b>DOT (Bulk)</b>	Not applicable
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**Canadian TDG**

**UN Number:** UN0349  
**UN Proper Shipping Name:** Articles, Explosive, N.O.S., (Pressed Desensitized Pellets of RDX)  
**Transport Hazard Class(es):** 1.4S  
**Packing Group:** II  
**EX Number:** EX-8312569  
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number:** UN0349  
**UN Proper Shipping Name:** Articles, Explosive, N.O.S., (Pressed Desensitized Pellets of RDX)  
**Transport Hazard Class(es):** 1.4S  
**Packing Group:** II  
**EX Number:** EX-8312569  
**Environmental Hazards:** Not applicable  
**EMS:** EmS F-B, S-X

**IATA/ICAO**

**UN Number:** UN0349  
**UN Proper Shipping Name:** Articles, Explosive, N.O.S., (Pressed Desensitized Pellets of RDX)  
**Transport Hazard Class(es):** 1.4S  
**Packing Group:** II  
**EX Number:** EX-8312569  
**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

<b>15. Regulatory Information</b>
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**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>	Sudden Release of Pressure Hazard Acute Health Hazard Chronic Health Hazard Fire 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.



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<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.

## Canadian Regulations

<b>Canadian DSL Inventory</b>	All components listed on inventory or are exempt.
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## 16. Other information

### Preparation Information

<b>Prepared By</b>	Chemical Stewardship Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com
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**Revision Date:** 18-May-2015

**Reason for Revision** Update to Format  
SECTION:  
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### 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<sup>3</sup> - milligram/cubic meter  
mm - millimeter  
mmHg - millimeter mercury  
w/w - weight/weight  
d - day

**Key literature references and sources for data**

OSHA

ECHA C&amp;L

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**End of Safety Data Sheet**