

## SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

### CARTRIDGE ASSEMBLY 1 3/4"

Revision Date: 08-Sep-2011

Revision Number: 7

#### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product Identifier**

**Product Name** CARTRIDGE ASSEMBLY 1 3/4"

**Relevant identified uses of the substance or mixture and uses advised against**

**Recommended Use** Explosive Charge  
**Uses Advised Against** No information available

**Details of the supplier of the safety data sheet**

Halliburton Energy Services  
Halliburton House, Howemoss Place  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

[www.halliburton.com](http://www.halliburton.com)

For further information, please contact

**E-Mail address:** [fdunexchem@halliburton.com](mailto:fdunexchem@halliburton.com)

**Emergency telephone number**

+44 1224 795277 or +1 281 575 5000

**Emergency telephone §45 - (EC)1272/2008**

<b>Europe</b>	<b>112</b>
<b>Denmark</b>	Poison Control Hotline (DK): +45 82 12 12 12
<b>France</b>	ORFILA (FR): + 01 45 42 59 59
<b>Germany</b>	Poison Center Berlin (DE): +49 030 30686 790
<b>Italy</b>	Poison Center, Milan (IT): +39 02 6610 1029
<b>Netherlands</b>	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
<b>Norway</b>	Poisons Information (NO): + 47 22 591300
<b>Poland</b>	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
<b>Spain</b>	Poison Information Service (ES): +34 91 562 04 20
<b>United Kingdom</b>	NHS Direct (UK): +44 0845 46 47

#### 2. HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

**REGULATION (EC) No 1272/2008**

Acute Toxicity - Dermal	Category 3- (H311)
Specific Target Organ Toxicity - (Single Exposure)	Category 1- (H373)
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2- (H373)

<b>2. HAZARDS IDENTIFICATION</b>
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Explosives.

Division 1.4- H204

**Classification according to EU Directives 67/548/EEC or 1999/45/EC***For the full text of the R-phrases mentioned in this Section, see Section 16***Classification** E - Explosive.**Risk Phrases** R2 Risk of explosion by shock, fire, friction, or other sources of ignition.**Label Elements****Hazard Pictograms****Signal Word****Danger****Hazard Statements**

H204 - Fire or projection hazard

H311 - Toxic in contact with skin

H370 - Causes damage to organs

H373 - May cause damage to organs through prolonged or repeated exposure

**Contains****Substances**

Cyclotetramethylenetetranitramine (HMX)

**CAS Number**

2691-41-0

**Precautionary Statements - EU (§28, 1272/2008)**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P250 - Do not subject to grinding/shock/friction

P370 + P380 - In case of fire: Evacuate area

P372 - Explosion risk in case of fire

P373 - DO NOT fight fire when fire reaches explosives

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P312 - Call a POISON CENTER or doctor/physician if you feel unwell

**Other Hazards**

None known

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	EINECS	CAS Number	PERCENT	EEC Classification	EU - CLP Substance Classification	REACH No.
Cyclotetramethylenetetranitramine (HMX)	220-260-0	2691-41-0	60 - 100%	E; R2	Expl. 1.4 (H204) Acute Tox. 3 (H311) STOT SE 1 (H370) STOT RE 2 (H373)	No data available

For the full text of the R-phrases mentioned in this Section, see Section 16

### 4. FIRST AID MEASURES

#### Description of 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.

##### **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.

##### **Skin**

Wash with soap and water. Get medical attention if irritation persists.

##### **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.

#### Most important symptoms and effects, both 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.

#### Indication of any immediate medical attention and special treatment needed

##### **Notes to Physician**

Treat symptomatically

### 5. FIREFIGHTING MEASURES

#### 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.

#### Special 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.

#### Advice for firefighters

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

Not applicable.

### 6. ACCIDENTAL RELEASE MEASURES

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

Use appropriate protective equipment. Use only competent persons for cleanup. See Section 12 for additional information

#### Environmental precautions

Prevent from entering sewers, waterways, or low areas.

#### 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.

#### Reference to other sections

See Section 12 for additional information.

## 7. HANDLING AND STORAGE

**Precautions for Safe Handling**

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

**Conditions for safe storage, including any incompatibilities**

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

**Specific End Use(s)**

**Exposure Scenario** No information available

**Other Guidelines** No information available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

Substances	EU	UK OEL	Netherlands	France OEL	Germany MAK/TRK
Cyclotetramethylenetetra nitramine (HMX)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Substances	Italy	Poland	Hungary	Czech Republic	Denmark
Cyclotetramethylenetetra nitramine (HMX)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)** No information available.

**Exposure controls**

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

**Personal protective equipment**

**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.

**Environmental Exposure Controls** No information available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

**Physical State:** Solid

**Color:** Metallic

**Odor:** Odorless

**Odor Threshold:** No information available

Property

Values

Remarks/ Method

**pH:** No data available

**Melting Point/Range** No data available

**Freezing Point/Range (C):** No data available

**Boiling Point/Range** No data available

**Flash Point** 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

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Explosive Properties** No information available  
**Oxidizing Properties** No information available  
**Other information**  
**VOC Content (%)** No data available

**10. STABILITY AND REACTIVITY**

**Reactivity**  
 Not applicable  
**Chemical Stability**  
 Stable  
**Possibility of Hazardous Reactions**  
 Will Not Occur  
**Conditions to Avoid**  
 May detonate with friction, impact, heat, and low level electrical current.  
**Incompatible Materials**  
 Strong acids. Strong alkalis.  
**Hazardous Decomposition Products**  
 Shrapnel. Oxides of nitrogen. Metal oxides. Carbon monoxide and carbon dioxide.

**11. TOXICOLOGICAL INFORMATION**

**Information on Toxicological Effects**

**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** May cause eye irritation.  
**Skin Contact** May be absorbed through the skin and contribute to the symptoms listed under ingestion. Nitrogen oxides generated during use are skin irritants.  
**Ingestion** 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. Prolonged or repeated exposure may cause liver damage.

Substances	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclotetramethylenetetranitramine (HMX)	LD50: 6490 mg/kg	LD50:630 mg/kg	No data available

**12. ECOLOGICAL INFORMATION**

**Toxicity**  
**Ecotoxicity Effects**

Substances	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Cyclotetramethylenetetranitramine (HMX)	No information available	LC50: 8.8-26 mg/L (Pimephales promelas)	No information available	No information available

**Persistence and degradability**

No information available

**Bioaccumulative potential**

No information available

**Mobility in soil**

No information available

**Results of PBT and vPvB assessment**

No information available.

**Other adverse effects****Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Disposal Method**

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

**Contaminated Packaging**

Do NOT reuse container. Store only in ATF approved magazines.

**14. TRANSPORT INFORMATION****IMDG/IMO**

**UN Number:** UN0349,  
**UN Proper Shipping Name:** Articles, Explosive, N.O.S., (Pressed Desensitized Pellets of HMX)  
**Transport Hazard Class(es):** , 1.4S  
**Packing Group:** , II  
**EMS:** EmS F-B, S-X

**RID**

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

**ADR**

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

**IATA/ICAO**

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

**Special Precautions for User**

None

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****International Inventories****EINECS Inventory**

This product, and all its components, complies with EINECS

**15. REGULATORY INFORMATION**

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

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**Germany, Water Endangering Classes (WGK)** Not determined.

**Chemical Safety Assessment**

No information available

**16. OTHER INFORMATION****Full text of R-phrases referred to under Sections 2 and 3**

R2 Risk of explosion by shock, fire, friction, or other sources of ignition.

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Revision Date:** 08-Sep-2011

**Revision Note** Not applicable

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**Disclaimer Statement**

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**End of Safety Data Sheet**