

SAFETY DATA SHEET CASING CUTTER HMX

Product Trade Name:

Revision Date: 21-Dec-2012

Revision Number: 6

1. Identification

1.1. Product Identifier

Product Trade Name: CASING CUTTER HMX
Synonyms: None
Chemical Family: Explosive
Internal ID Code: HM005851

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

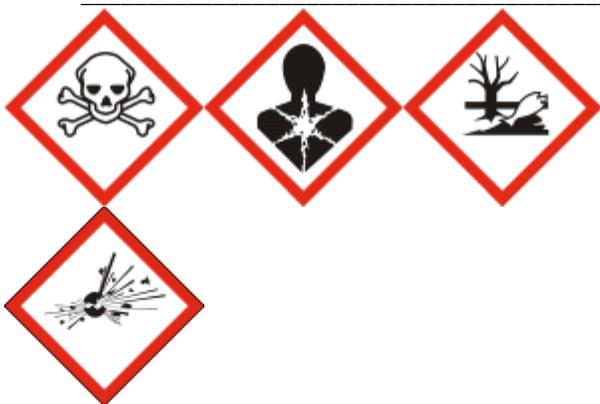
2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Acute Toxicity - Dermal	Category 3 - H311
Carcinogenicity	Category 2 - H351
Reproductive Toxicity	Category 1A - H360
Specific Target Organ Toxicity - (Single Exposure)	Category 1 - H370
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373
Acute Aquatic Toxicity	Category 1 - H400
Chronic Aquatic Toxicity	Category 1 - H410
Explosives.	Division 1.1 - H201

2.2. Label Elements

Hazard Pictograms



Signal Word

Danger

Hazard Statements

H201 - Explosive; mass explosion hazard
 H311 - Toxic in contact with skin
 H351 - Suspected of causing cancer
 H360 - May damage fertility or the unborn child
 H370 - Causes damage to organs
 H373 - May cause damage to organs through prolonged or repeated exposure
 H400 - Very toxic to aquatic life
 H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 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

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
 P312 - Call a POISON CENTER or doctor/physician if you feel unwell
 P362 - Take off contaminated clothing and wash before reuse
 P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician
 P314 - Get medical attention/advice if you feel unwell
 P370 + P380 - In case of fire: Evacuate area
 P391 - Collect spillage
 P372 - Explosion risk in case of fire
 P373 - DO NOT fight fire when fire reaches explosives

Storage

P401 - Store in accordance with local/regional/national/international regulations.
 P405 - Store locked up

Disposal

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

Contains Substances

Cyclotetramethylene tetranitramine (HMX)
 Lead

CAS Number

2691-41-0
 7439-92-1

Copper	7440-50-8
Tungsten	7440-33-7
Iron	7439-89-6
Graphite	7782-42-5
Aluminum	7429-90-5
Corrosion resistant steel	Mixture
Desensitizing wax	Mixture

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	5 - 10%	Acute Tox. 3 (H311) STOT SE 1 (H370) Expl. 1.1 (H201)
Lead	7439-92-1	NF	Carc. 2 (H351) Repr. 1A (H360) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Copper	7440-50-8	NF	Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Flam. Sol. 2 (H228)
Tungsten	7440-33-7	NF	Flam. Sol. 1 (H228) Self-heat. 2 (H252)
Iron	7439-89-6	NF	Flam. Sol. 1 (H228) Self-heat. 1 (H251)
Graphite	7782-42-5	NF	Combustible Dust
Aluminum	7429-90-5	NF	Flam. Sol. 1 (H228) Water-react. 2 (H261) Combustible Dust
Corrosion resistant steel	Mixture	NF	Not classified
Desensitizing wax	Mixture	NF	Not classified

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, move victim to fresh air and seek 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. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Toxic in contact with skin. Potential carcinogen. Potential reproductive hazard. May cause birth defects. 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
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not applicable	Not applicable
Lead	7439-92-1	0.05 mg/M3	TWA: 0.05 mg/m ³
Copper	7440-50-8	1 mg/m ³	TWA: 0.2 mg/m ³
Tungsten	7440-33-7	Not applicable	TWA: 5 mg/m ³ STEL: 10 mg/m ³
Iron	7439-89-6	10 mg/M3	Not applicable
Graphite	7782-42-5	15 mg/M3	TWA: 2 mg/m ³

Aluminum	7429-90-5	15 mg/m ³	TWA: 1 mg/m ³
Corrosion resistant steel	Mixture	Not applicable	Not applicable
Desensitizing wax	Mixture	Not applicable	Not applicable

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

Physical State: Solid **Color:** Metallic
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	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

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.**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.

Toxic in contact with skin. 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.

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

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	6490 mg/kg (Rat) 2300 mg/kg (Rat)	5 g/kg (Rat) 630 mg/kg (Rabbit) 982 mg/kg (Rabbit)	No data available
Lead	7439-92-1	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat, 4h, dust)
Copper	7440-50-8	> 2500 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.11 mg/L (Rat) 4h
Tungsten	7440-33-7	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.4 mg/L (Rat, 4h, dust)
Iron	7439-89-6	984000 mg/kg (Rat)	No data available	> 250 mg/m ³ (Rat, 6h)
Graphite	7782-42-5	10,000 mg/kg (Rat) 2,000 mg/kg (Rat)	No data available	>2,000 mg/L (Rat) 4h
Aluminum	7429-90-5	> 5000 mg/kg (Rat) (Similar substance)	> 5000 mg/kg (Rabbit) (Similar substance)	> 2.3 mg/L (Rat, 4 h) (Similar substance)
Corrosion resistant steel	Mixture	No data available	No data available	No data available
Desensitizing wax	Mixture	No data available	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not irritating to skin in rabbits.
Lead	7439-92-1	Non-irritating to the skin (Rabbit)
Copper	7440-50-8	Non-irritating to the skin (Rabbit)

Tungsten	7440-33-7	Non-irritating to the skin (Rabbit)
Iron	7439-89-6	Not irritating to skin in rabbits.
Graphite	7782-42-5	Non-irritating to the skin (Rabbit)
Aluminum	7429-90-5	Non-irritating to the skin (Rabbit) (similar substances)
Corrosion resistant steel	Mixture	Non-irritating to the skin
Desensitizing wax	Mixture	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Non-irritating to rabbit's eye
Lead	7439-92-1	Non-irritating to the eye (Rabbit)
Copper	7440-50-8	Non-irritating to the eye (Rabbit)
Tungsten	7440-33-7	Non-irritating to the eye (Rabbit)
Iron	7439-89-6	Non-irritating to rabbit's eye
Graphite	7782-42-5	Non-irritating to rabbit's eye
Aluminum	7429-90-5	Non-irritating to the eye (Rabbit) (similar substances)
Corrosion resistant steel	Mixture	Non-irritating to the eye
Desensitizing wax	Mixture	Non-irritating to the eye

Substances	CAS Number	Skin Sensitization
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Did not cause sensitization on laboratory animals (guinea pig)
Lead	7439-92-1	Did not cause sensitization on laboratory animals (guinea pig)
Copper	7440-50-8	Did not cause sensitization on laboratory animals (guinea pig)
Tungsten	7440-33-7	Did not cause sensitization on laboratory animals (guinea pig)
Iron	7439-89-6	Did not cause sensitization on laboratory animals (guinea pig)
Graphite	7782-42-5	Did not cause sensitization on laboratory animals
Aluminum	7429-90-5	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Corrosion resistant steel	Mixture	Did not cause sensitization on laboratory animals
Desensitizing wax	Mixture	Did not cause sensitization on laboratory animals (similar substances)

Substances	CAS Number	Respiratory Sensitization
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	No data of sufficient quality are available.
Lead	7439-92-1	No information available
Copper	7440-50-8	No information available
Tungsten	7440-33-7	No information available
Iron	7439-89-6	No information available
Graphite	7782-42-5	No information available
Aluminum	7429-90-5	Did not cause sensitization on laboratory animals (mouse) (similar substances)
Corrosion resistant steel	Mixture	No information available
Desensitizing wax	Mixture	No information available

Substances	CAS Number	Mutagenic Effects
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)
Lead	7439-92-1	Some in vitro tests have shown mutagenic effects. Some in vivo tests have shown mutagenic effects.
Copper	7440-50-8	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Tungsten	7440-33-7	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Iron	7439-89-6	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Graphite	7782-42-5	In vitro tests did not show mutagenic effects
Aluminum	7429-90-5	In vivo tests did not show mutagenic effects. (similar substances)
Corrosion resistant steel	Mixture	Not regarded as mutagenic.
Desensitizing wax	Mixture	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	No information available.
Lead	7439-92-1	This substance is a potential carcinogen.
Copper	7440-50-8	Did not show carcinogenic effects in animal experiments (similar substances)
Tungsten	7440-33-7	Did not show carcinogenic effects in animal experiments
Iron	7439-89-6	Did not show carcinogenic effects in animal experiments
Graphite	7782-42-5	No information available.
Aluminum	7429-90-5	Did not show carcinogenic effects in animal experiments

Corrosion resistant steel	Mixture	Not regarded as carcinogenic.
Desensitizing wax	Mixture	Not regarded as carcinogenic.
Substances	CAS Number	Reproductive toxicity
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Lead	7439-92-1	Prolonged or repeated exposure may cause embryo and fetus toxicity. Prolonged or repeated exposure may cause reproductive system damage.
Copper	7440-50-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Tungsten	7440-33-7	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Iron	7439-89-6	No information available
Graphite	7782-42-5	Animal testing did not show any effects on fertility.
Aluminum	7429-90-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Corrosion resistant steel	Mixture	No information available
Desensitizing wax	Mixture	No information available

Substances	CAS Number	STOT - single exposure
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	May cause disorder and damage to the Central Nervous System (CNS)
Lead	7439-92-1	No significant toxicity observed in animal studies at concentration requiring classification.
Copper	7440-50-8	No significant toxicity observed in animal studies at concentration requiring classification.
Tungsten	7440-33-7	No significant toxicity observed in animal studies at concentration requiring classification.
Iron	7439-89-6	No significant toxicity observed in animal studies at concentration requiring classification.
Graphite	7782-42-5	May cause disorder and damage to the Lungs
Aluminum	7429-90-5	No significant toxicity observed in animal studies at concentration requiring classification.
Corrosion resistant steel	Mixture	No significant toxicity observed in animal studies at concentration requiring classification.
Desensitizing wax	Mixture	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	No significant toxicity observed in animal studies at concentration requiring classification.
Lead	7439-92-1	Causes damage to organs through prolonged or repeated exposure: Central Nervous System (CNS) (Blood) (Kidney)
Copper	7440-50-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Tungsten	7440-33-7	No significant toxicity observed in animal studies at concentration requiring classification.
Iron	7439-89-6	No significant toxicity observed in animal studies at concentration requiring classification.
Graphite	7782-42-5	No significant toxicity observed in animal studies at concentration requiring classification.
Aluminum	7429-90-5	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Corrosion resistant steel	Mixture	No significant toxicity observed in animal studies at concentration requiring classification.
Desensitizing wax	Mixture	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not applicable
Lead	7439-92-1	Not applicable
Copper	7440-50-8	Not applicable
Tungsten	7440-33-7	Not applicable
Iron	7439-89-6	Not applicable
Graphite	7782-42-5	No information available
Aluminum	7429-90-5	Not applicable
Corrosion resistant steel	Mixture	Not applicable
Desensitizing wax	Mixture	Not applicable

12. Ecological Information

12.1. Toxicity Ecotoxicity Effects

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	EC50 (96h) > 22 umol/L (Scenedesmus capricornutum)	LC50 8.8-26 mg/L (Pimephales promelas) LC50 (96h) >15 mg/L (Pimephales promelas) LC50 (96h) > 32 mg/L (Lepomis macrochirus) NOEC (32d) > 3.3 mg/L (Pimephales promelas)	No information available	EC50 (48h) > 15 mg/L (Daphnia magna) NOEC (28d) > 3.9 mg/L (Daphnia magna)
Lead	7439-92-1	EC10(48h): 0.083 mg/L (Chlamydomonas reinhardtii)	LC50(96h): 0.107 - 1.17 mg/L (Oncorhynchus mykiss) LC50(96h): 0.1077 mg/L (Pimephales promelas) NOEC(30d): 0.2415 mg/L (Oncorhynchus mykiss)	No information available	LC50(48h): 0.596 mg/L (Ceriodaphnia dubia)
Copper	7440-50-8	EC50 (72h) 0.0238 mg/L (Skeletonema costatum) (similar substance) NOEC (10d) 0.022 mg/L (Chlamydomonas reinhardtii) (similar substance)	LC50 (96h) 0.094 mg/L (Oncorhynchus mykiss) (similar substance) NOEC (45d) 0.011 mg/L (Oncorhynchus mykiss) (similar substance)	EC50 (10d) 0.025 mg/L (sewage, domestic) (similar substance)	EC50 (48h) 0.0409 mg/L (Daphnia magna) (similar substance) NOEC (10d) 0.017 mg/L (Chironomus repair) (similar substance)
Tungsten	7440-33-7	EC50(72h): > 17.7 mg/L (Pseudokirchnerella subcapitata) (similar substance)	LC50(96h): > 200 mg/L (Danio rerio) (similar substance) NOEC(38d): > 10 mg/L (Danio rerio) (similar substance)	EC50(30m): > 1000 mg/L (activated sludge, domestic) (similar substance)	EC50(48h): > 183 mg/L (Daphnia magna) (similar substance) NOEC(21d): > 100 mg/L (Daphnia magna) (similar substance)
Iron	7439-89-6	No information available	LC50(96h): > 10000 mg/L (Danio rerio) NOEC(21d): 0.52 mg/L (Cyprinus carpio)	No information available	No information available
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)
Aluminum	7429-90-5	EC50(72h): 6919.83 mg/L (Skeletonema costatum)	LC50(96h): >10000 mg/L (Scophthalmus maximus)	No information available	LC50(48h): 190 mg/L (Arcatia tonsa)
Corrosion resistant steel	Mixture	No information available	No information available	No information available	No information available
Desensitizing wax	Mixture	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not readily biodegradable (2% @ 29d)
Lead	7439-92-1	The methods for determining biodegradability are not applicable to inorganic substances.
Copper	7440-50-8	The methods for determining biodegradability are not applicable to inorganic substances.
Tungsten	7440-33-7	The methods for determining biodegradability are not applicable to inorganic substances.
Iron	7439-89-6	The methods for determining biodegradability are not applicable to inorganic substances.
Graphite	7782-42-5	No information available
Aluminum	7429-90-5	The methods for determining biodegradability are not applicable to inorganic substances.
Corrosion resistant steel	Mixture	The methods for determining biodegradability are not applicable to inorganic substances.
Desensitizing wax	Mixture	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
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Cyclotetramethylene tetranitramine (HMX)	2691-41-0	0.165
Lead	7439-92-1	No information available
Copper	7440-50-8	No information available
Tungsten	7440-33-7	No information available
Iron	7439-89-6	No information available
Graphite	7782-42-5	No information available
Aluminum	7429-90-5	No information available
Corrosion resistant steel	Mixture	No information available
Desensitizing wax	Mixture	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	No information available.
Lead	7439-92-1	No information available
Copper	7440-50-8	No information available
Tungsten	7440-33-7	No information available
Iron	7439-89-6	No information available
Graphite	7782-42-5	No information available
Aluminum	7429-90-5	No information available
Corrosion resistant steel	Mixture	No information available
Desensitizing wax	Mixture	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. 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

US DOT

UN Number: UN0059
UN Proper Shipping Name: Charges, Shaped
Transport Hazard Class(es): 1.1D
Packing Group: II
EX Number: EX-1986050112 EX-8908242
Environmental Hazards: Not applicable
NAERG: NAERG 112

US DOT Bulk

DOT (Bulk) Not applicable

Canadian TDG

UN Number: UN0059
UN Proper Shipping Name: Charges, Shaped
Transport Hazard Class(es): 1.1D
Packing Group: II
EX Number: EX-1986050112 EX-8908242
Environmental Hazards: Not applicable

IMDG/IMO

UN Number: UN0059
UN Proper Shipping Name: Charges, Shaped
Transport Hazard Class(es): 1.1D

Packing Group: II
EX Number: EX-1986050112 EX-8908242
Environmental Hazards: Not applicable
EMS: EmS F-B, S-X

IATA/ICAO

UN Number: UN0059
UN Proper Shipping Name: Charges, Shaped
Transport Hazard Class(es): 1.1D
Packing Group: II
EX Number: EX-1986050112 EX-8908242
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.

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not applicable
Lead	7439-92-1	Not applicable
Copper	7440-50-8	Not applicable
Tungsten	7440-33-7	Not applicable
Iron	7439-89-6	Not applicable
Graphite	7782-42-5	Not applicable
Aluminum	7429-90-5	Not applicable
Corrosion resistant steel	Mixture	Not applicable
Desensitizing wax	Mixture	Not applicable

EPA SARA (311,312) Hazard Class

Acute Health Hazard
 Chronic Health Hazard
 Fire Hazard
 Sudden Release of Pressure Hazard

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not applicable	Not applicable
Lead	7439-92-1	0.1%	Not applicable
Copper	7440-50-8	1.0%	Not applicable
Tungsten	7440-33-7	Not applicable	Not applicable
Iron	7439-89-6	Not applicable	Not applicable
Graphite	7782-42-5	Not applicable	Not applicable
Aluminum	7429-90-5	1.0%	Not applicable
Corrosion resistant steel	Mixture	Not applicable	Not applicable
Desensitizing wax	Mixture	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Cyclotetramethylene tetranitramine (HMX)	2691-41-0	Not applicable
Lead	7439-92-1	10 lb 4.54 kg
Copper	7440-50-8	5000 lb

		2270 kg
Tungsten	7440-33-7	Not applicable
Iron	7439-89-6	Not applicable
Graphite	7782-42-5	Not applicable
Aluminum	7429-90-5	Not applicable
Corrosion resistant steel	Mixture	Not applicable
Desensitizing wax	Mixture	Not applicable

EPA RCRA Hazardous Waste Classification

If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:

Reactivity D003

California Proposition 65 The California Proposition 65 regulations apply to this product.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

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

16. Other information**Preparation Information**

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

Revision Date: 21-Dec-2012

Reason for Revision SDS sections updated:
2

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/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

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End of Safety Data Sheet