

SAFETY DATA SHEET

Product Trade Name: 3 3/8 FIRINGHEAD ASSY TDF (HLS)

Revision Date: 12-Mar-2012

Revision Number: 7

1. Identification

1.1. Product Identifier

Product Trade Name: 3 3/8 FIRINGHEAD ASSY TDF (HLS)
Synonyms: None
Chemical Family: Explosive
Internal ID Code HM001473

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 4 - H302
Acute Inhalation Toxicity - Vapors	Category 4 - H332
Serious Eye Damage / Eye Irritation	Category 2 - H319
Reproductive Toxicity	Category 1A - H360
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373
Acute Aquatic Toxicity	Category 1 - H400
Chronic Aquatic Toxicity	Category 1 - H410
Explosives.	Division 1.4 - H204

2.2. Label Elements

Hazard Pictograms

**Signal Word**

Danger

Hazard Statements

H204 - Fire or projection hazard
 H302 - Harmful if swallowed
 H319 - Causes serious eye irritation
 H332 - Harmful if inhaled
 H360 - May damage fertility or the unborn child
 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
 P261 - Avoid breathing 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
 P271 - Use only outdoors or in a well-ventilated area
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 P330 - Rinse mouth
 P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
 P312 - Call a POISON CENTER or doctor/physician if you feel unwell
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P337 + P313 - If eye irritation persists: Get medical advice/attention
 P308 + P313 - IF exposed or concerned: Get medical advice/attention
 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
 P391 - Collect spillage

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**

2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)
 A-1A gasless ignition powder
 Hexanitrostilbene (HNS)
 Lead azide
 Tungsten delay powder, a pyrotechnic delay mix
 Titanium hydroxide
 Potassium perchlorate

CAS Number

38082-89-2
 Mixture
 20062-22-0
 13424-46-9
 Mixture
 20338-08-3
 7778-74-7

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	NF	Expl. 1.1 (H201)
A-1A gasless ignition powder	Mixture	NF	Expl. 1.1 (H201) Eye Irrit. 2 (H319)
Hexanitrostilbene (HNS)	20062-22-0	NF	Expl. 1.1 (H201)
Lead azide	13424-46-9	NF	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Repr. 1 (H360) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Expl. Unstable explosive (H200)
Tungsten delay powder, a pyrotechnic delay mix	Mixture	NF	Flam. Sol. 1 (H228)
Titanium hydroxide	20338-08-3	1 - 5%	Not classified
Potassium perchlorate	7778-74-7	1 - 5%	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) STOT RE 2 (H373) Ox. Sol. 1 (H271)

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

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.

Skin

Get medical attention if irritation persists.

Ingestion

Under normal conditions, first aid procedures are not required. Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Causes eye irritation Harmful if swallowed. Harmful if inhaled. Potential reproductive hazard. May cause birth defects. 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**

None. Contains both oxidizer and fuel and cannot be readily extinguished. Fire fighting should be limited to preventing the spread of other fires.

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**

Oxidizer. May ignite combustibles. Delayed devices which may cook-off several hours after fire is out. Delayed column cannot be extinguished externally. Sprinkler and/or deluge systems recommended for bulk storage areas.

5.3 Special protective equipment and precautions for fire-fighters**Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

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. Scoop up and remove.

7. Handling and storage**7.1. Precautions for Safe Handling****Handling Precautions**

Wash hands after use. Launder contaminated clothing before reuse. Only allow trained personnel to handle product.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

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

Keep away from friction, impact, and heat. Observe storage compatibility groups and explosive limits.

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

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	Not applicable	Not applicable
A-1A gasless ignition powder	Mixture	Not applicable	Not applicable
Hexanitrostilbene (HNS)	20062-22-0	Not applicable	Not applicable

Lead azide	13424-46-9	0.05 mg/M3	0.05 mg/m ³
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Not applicable	5 mg/m ³
Titanium hydroxide	20338-08-3	Not applicable	Not applicable
Potassium perchlorate	7778-74-7	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** Handle remotely when possible.**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:**PropertyValuesRemarks/ - Method**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 oxidizers. Strong acids.

10.6. Hazardous Decomposition Products

Shrapnel. Toxic fumes. Carbon monoxide and carbon dioxide. Oxides of nitrogen.

11. Toxicological Information**11.1 Information on likely routes of exposure****Principle Route of Exposure** Ingestion. Skin contact. Eye contact. Inhalation.**11.2 Symptoms related to the physical, chemical and toxicological characteristics****Acute Toxicity****Inhalation**

Harmful if inhaled. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Nitrogen oxides generated during use are irritating to the respiratory system.

Eye Contact

Causes 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

Harmful if swallowed. Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause adverse effects on the blood.
Prolonged or repeated exposure may cause 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
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	> 5000 mg/kg (Rat)	No data available	No data available
A-1A gasless ignition powder	Mixture	> 2000 mg/kg (rat) (similar substance)	> 2000 mg/kg (rabbit) (similar substance)	> 5.43 mg/L (Rat, 4h, dust) (similar substance)
Hexanitrostilbene (HNS)	20062-22-0	No data available	No data available	No data available
Lead azide	13424-46-9	No data available	No data available	No data available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No data available	> 2000 mg/kg (Rat) (similar substance)	> 5.0 mg/L (Rat, 4h, aerosol) (similar substance)
Titanium hydroxide	20338-08-3	> 5000 mg/kg (Rat) (similar substance)	No data available	> 6.82 mg/L (Rat) 4h (similar substance)
Potassium perchlorate	7778-74-7	1900 mg/kg (Rabbit) > 2000 mg/kg (Rat) (Similar substance)	> 2,000 mg/kg (Rat) (Similar substance)	No data available

Substances	CAS Number	Skin corrosion/irritation
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available.
A-1A gasless ignition powder	Mixture	Causes moderate skin irritation. (Rabbit) (similar substances)

Hexanitrostilbene (HNS)	20062-22-0	No information available.
Lead azide	13424-46-9	No information available.
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Not irritating to skin in rabbits. (similar substances)
Titanium hydroxide	20338-08-3	Not irritating to skin in rabbits. (similar substances)
Potassium perchlorate	7778-74-7	Not irritating to skin in rabbits. (similar substances)

Substances	CAS Number	Eye damage/irritation
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available.
A-1A gasless ignition powder	Mixture	Non-irritating to rabbit's eye (similar substances)
Hexanitrostilbene (HNS)	20062-22-0	No information available.
Lead azide	13424-46-9	No information available.
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Non-irritating to rabbit's eye (similar substances)
Titanium hydroxide	20338-08-3	Non-irritating to rabbit's eye (similar substances)
Potassium perchlorate	7778-74-7	(Rabbit) (similar substances)

Substances	CAS Number	Skin Sensitization
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	Did not cause sensitization on laboratory animals (mouse) (similar substances)
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Titanium hydroxide	20338-08-3	Did not cause sensitization on laboratory animals (guinea pig) (mouse) (similar substances)
Potassium perchlorate	7778-74-7	Did not cause sensitization on laboratory animals (mouse) (similar substances)

Substances	CAS Number	Respiratory Sensitization
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No information available
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No information available
Titanium hydroxide	20338-08-3	No data of sufficient quality are available.
Potassium perchlorate	7778-74-7	No information available

Substances	CAS Number	Mutagenic Effects
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Titanium hydroxide	20338-08-3	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Potassium perchlorate	7778-74-7	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)

Substances	CAS Number	Carcinogenic Effects
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available.
A-1A gasless ignition powder	Mixture	No data of sufficient quality are available.
Hexanitrostilbene (HNS)	20062-22-0	No information available.
Lead azide	13424-46-9	No information available.
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No data of sufficient quality are available.
Titanium hydroxide	20338-08-3	Did not show carcinogenic effects in animal experiments (similar substances)

Potassium perchlorate	7778-74-7	Did not show carcinogenic effects in animal experiments (similar substances)
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Substances	CAS Number	Reproductive toxicity
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No data of sufficient quality are available.
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity. (similar substances)
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Titanium hydroxide	20338-08-3	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility. (similar substances)
Potassium perchlorate	7778-74-7	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

Substances	CAS Number	STOT - single exposure
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Titanium hydroxide	20338-08-3	No significant toxicity observed in animal studies at concentration requiring classification.
Potassium perchlorate	7778-74-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	STOT - repeated exposure
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	Causes damage to organs through prolonged or repeated exposure: (Blood)
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Titanium hydroxide	20338-08-3	No data of sufficient quality are available.
Potassium perchlorate	7778-74-7	Causes damage to organs through prolonged or repeated exposure: (Thyroid)

Substances	CAS Number	Aspiration hazard
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available Not applicable
A-1A gasless ignition powder	Mixture	Not applicable
Hexanitrostilbene (HNS)	20062-22-0	Not applicable
Lead azide	13424-46-9	Not applicable
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Not applicable
Titanium hydroxide	20338-08-3	Not applicable
Potassium perchlorate	7778-74-7	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	Toxicity to Invertebrates
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				Microorganisms	
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available	No information available	No information available	No information available
A-1A gasless ignition powder	Mixture	No information available	LC50(96h): > 98.9 mg/L (Oncorhynchus mykiss)(similar substance)	No information available	EC50(48h): 490 mg/L (Daphnia magna)(similar substance) NOEC(21d): > 2.52 ug/L (Daphnia magna) (similar substance)
Hexanitrostilbene (HNS)	20062-22-0	No information available	No information available	No information available	No information available
Lead azide	13424-46-9	No information available	No information available	No information available	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	EC50(72h): > 17.7 mg/L (Pseudokirchneriella subcapitata) (similar substance)	LC50(96h): > 181 mg/L (Danio rerio)(similar substance) NOEC(38d): > 9.8 mg/L (Danio rerio) (similar substance)	EC50(30m): > 1000 mg/L (Activated sludge, domestic) (similar substance)	EC50(48h): > 163 mg/L (Daphnia magna) (similar substance) NOEC(21d): > 100 mg/L (Daphnia magna) (similar substance)
Titanium hydroxide	20338-08-3	EC50 (72h) > 100 mg/L (Pseudokirchneriella subcapitata) (similar substance) NOEC (72h) > 100 mg/L (Pseudokirchneriella subcapitata) (similar substance)	LC50 (96h) 294 mg/L (Japanese medaka) (similar substance) NOEC (14d) > 1.1 mg/L (Oncorhynchus mykiss) (similar substance)	No information available	EC50 (48h) > 500 mg/L (Daphnia magna) (similar substance) NOEC (21d) > 2.92 mg/L (Daphnia magna) (similar substance)
Potassium perchlorate	7778-74-7	No information available	LC50(96h): > 1000 mg/L (Danio rerio) NOEC(84d): 10 mg/L (Danio rerio)	No information available	EC50(48h): > 100 mg/L (Daphnia magna) NOEC(7d): 10 mg/L (Ceriodaphnia dubia)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No information available
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	The methods for determining biodegradability are not applicable to inorganic substances.
Titanium hydroxide	20338-08-3	Not applicable
Potassium perchlorate	7778-74-7	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No information available
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No information available
Titanium hydroxide	20338-08-3	115.89
Potassium perchlorate	7778-74-7	-7.18

12.4. Mobility in soil

Substances	CAS Number	Mobility
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	No information available
A-1A gasless ignition powder	Mixture	No information available
Hexanitrostilbene (HNS)	20062-22-0	No information available
Lead azide	13424-46-9	No information available
Tungsten delay powder, a pyrotechnic delay mix	Mixture	No information available
Titanium hydroxide	20338-08-3	No information available
Potassium perchlorate	7778-74-7	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	Follow all applicable national or local regulations.

14. Transport Information**US DOT**

UN Number:	UN0384
UN Proper Shipping Name:	Components, Explosive Train, N.O.S. .(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX)
Transport Hazard Class(es):	1.4S
Packing Group:	II
EX Number:	EX-199309158
Environmental Hazards:	Not applicable
NAERG:	NAERG 114

US DOT Bulk

DOT (Bulk)	Not applicable
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Canadian TDG

UN Number:	UN0384
UN Proper Shipping Name:	Components, Explosive Train, N.O.S. .(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX)
Transport Hazard Class(es):	1.4S
Packing Group:	II
EX Number:	EX-199309158
Environmental Hazards:	Not applicable

For Canada the proper shipping description is now:

Components, Explosive Train, N.O.S. .(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX), 1.4B, UN0383

IMDG/IMO

UN Number:	UN0384
UN Proper Shipping Name:	Components, Explosive Train, N.O.S. .(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX)
Transport Hazard Class(es):	1.4S
Packing Group:	II
EX Number:	EX-199309158
Environmental Hazards:	Not applicable
EMS:	EmS F-B, S-X

IATA/ICAO

UN Number:	UN0384
UN Proper Shipping Name:	Components, Explosive Train, N.O.S. .(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX)
Transport Hazard Class(es):	1.4S
Packing Group:	II
EX Number:	EX-199309158
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
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	Not applicable
A-1A gasless ignition powder	Mixture	Not applicable
Hexanitrostilbene (HNS)	20062-22-0	Not applicable
Lead azide	13424-46-9	Not applicable
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Not applicable
Titanium hydroxide	20338-08-3	Not applicable
Potassium perchlorate	7778-74-7	Not applicable

EPA SARA (311,312) Hazard Class

Acute Health Hazard

Chronic Health Hazard

Fire Hazard

Reactive 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
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	Not applicable	Not applicable
A-1A gasless ignition powder	Mixture	Not applicable	Not applicable
Hexanitrostilbene (HNS)	20062-22-0	Not applicable	Not applicable
Lead azide	13424-46-9	0.1%	Not applicable
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Not applicable	Not applicable
Titanium hydroxide	20338-08-3	Not applicable	Not applicable
Potassium perchlorate	7778-74-7	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
2,6-Bis(picrylamino)-3,5-dinitro-pyridine (PYX)	38082-89-2	Not applicable
A-1A gasless ignition powder	Mixture	Not applicable
Hexanitrostilbene (HNS)	20062-22-0	Not applicable
Lead azide	13424-46-9	Not applicable
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Not applicable
Titanium hydroxide	20338-08-3	Not applicable
Potassium perchlorate	7778-74-7	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	Product contains one or more components not listed on the inventory.
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16. Other information

Preparation Information

Prepared By	Chemical Stewardship Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com
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Revision Date:	12-Mar-2012
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Reason for Revision	SDS sections updated: 2
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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/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

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet