

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:** 2 1/2 FIRINGHEAD ASSY TDF (HLS)

**Revision Date:** 20-Dec-2012

<b>1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING</b>
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**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.  
15 Marriott Road  
Jandakot  
WA 6164  
Australia

ACN Number: 009 000 775  
Telephone Number: 61 (08) 9455 8300  
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**  
Australia: 08-64244950  
Papua New Guinea: 05 1 281 575 5000  
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**  
Australia: 000  
Papua New Guinea: 000  
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** 2 1/2 FIRINGHEAD ASSY TDF (HLS)  
**Synonyms:** None  
**Chemical Family:** Explosive  
**UN Number:** , UN0384  
**Dangerous Goods Class:** None  
**Subsidiary Risk:** None  
**Hazchem Code:** None Allocated  
**Poisons Schedule:** None Allocated  
**Application:** Explosive Charge

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

<b>2. COMPOSITION/INFORMATION ON INGREDIENTS</b>
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Substances	CAS Number	PERCENT	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
Tungsten delay powder, a pyrotechnic delay mix	Mixture	Unknown	Not applicable	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

A-1A gasless ignition powder	Mixture	Unknown	Not applicable	Not applicable	Not applicable
2,6-Bis(picrylamino)-3,5-dinitropyridine (PYX)	38082-89-2	Unknown	Not applicable	Not applicable	Not applicable
Titanium potassium perchlorate	Mixture	Unknown	Not applicable	Not applicable	Not applicable
Lead azide	13424-46-9	Unknown	0.15 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>

**Non-Hazardous Substance to Total of 100%**

## 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. May cause birth defects.

### Risk Phrases

R2 Risk of explosion by shock, fire, friction, or other sources of ignition.  
R3 Extreme risk of explosion by shock, friction, fire, or other sources of ignition.  
R61 May cause harm to the unborn child.  
R62 Possible risk of impaired fertility.  
R20/22 Harmful by inhalation and if swallowed.  
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### HSNO Classification

Not Determined

## 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

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

### 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.

### 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.

### Notes to Physician

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 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 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.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Use only competent persons for cleanup.

<b>Environmental Precautionary Measures</b>	Prevent from entering sewers, waterways, or low areas.
<b>Procedure for Cleaning / Absorption</b>	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.

<b>7. HANDLING AND STORAGE</b>
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<b>Handling Precautions</b>	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.
<b>Storage Information</b>	Store only in ATF approved magazines. Keep away from friction, impact, and heat.

<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>
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<b>Engineering Controls</b>	Use in a well ventilated area.
<b>Respiratory Protection</b>	Dust/mist respirator. (N95, P2/P3)
<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.

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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<b>Physical State:</b>	Solid
<b>Color:</b>	Metallic
<b>Odor:</b>	Odorless
<b>pH:</b>	Not Determined
<b>Specific Gravity @ 20 C (Water=1):</b>	Not Determined
<b>Density @ 20 C (kg/l):</b>	Not Determined
<b>Bulk Density @ 20 C (kg/m<sup>3</sup>):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Pour Point/Range (C):</b>	Not Determined
<b>Flash Point/Range (C):</b>	Not Determined
<b>Flash Point Method:</b>	Not Determined
<b>Autoignition Temperature (C):</b>	Not Determined
<b>Flammability Limits in Air - Lower (g/m<sup>3</sup>):</b>	Not Determined
<b>Flammability Limits in Air - Lower (%):</b>	Not Determined
<b>Flammability Limits in Air - Upper (g/m<sup>3</sup>):</b>	Not Determined
<b>Flammability Limits in Air - Upper (%):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Insoluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (g/l):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined
<b>Decomposition Temperature (C):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	May detonate with friction, impact, heat, and low level electrical current.
<b>Incompatibility (Materials to Avoid)</b>	Strong acids. Strong alkalis.
<b>Hazardous Decomposition Products</b>	Shrapnel. Oxides of nitrogen. Metal oxides. Carbon monoxide and carbon dioxide.
<b>Additional Guidelines</b>	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

<b>Principle Route of Exposure</b>	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.
<b>Symptomts related to exposure</b>	
<b>Inhalation</b>	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.
<b>Skin Contact</b>	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

Reproductive / Developmental Toxicity: Not determined

## 12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined

Persistence/Degradability Not applicable

Bio-accumulation Not determined

### Ecotoxicological Information

Acute Fish Toxicity: Not determined

Acute Crustaceans Toxicity: Not determined

Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

## 13. DISPOSAL CONSIDERATIONS

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

### Land Transportation

#### ADR

UN0384, Components, Explosive Train, N.O.S..(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX), 1.4S, II  
EX1993090158

### Air Transportation

#### ICAO/IATA

UN0384, Components, Explosive Train, N.O.S., 1.4S, II  
(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX)  
EX1993090158

### Sea Transportation

#### IMDG

UN0384, Components, Explosive Train, N.O.S..(BOOSTERS, DET CORD, AND/OR INITIATORS WITH PYX, NONA, HNS, OR HMX), 1.4S, II  
EX1993090158  
EmS F-B, S-X

### Other Transportation Information

Labels: Explosive 1.4S

## 15. REGULATORY INFORMATION

### Chemical Inventories

**Australian AICS Inventory**  
**New Zealand Inventory of Chemicals**  
**US TSCA Inventory**  
**EINECS Inventory**

Product contains one or more components not listed on inventory.  
This product does not comply with NZIOC

All components listed on inventory or are exempt.  
This product, and all its components, complies with EINECS

### Classification

E - Explosive.  
T - Toxic.

### Risk Phrases

R2 Risk of explosion by shock, fire, friction, or other sources of ignition.  
R3 Extreme risk of explosion by shock, friction, fire, or other sources of ignition.  
R61 May cause harm to the unborn child.  
R62 Possible risk of impaired fertility.  
R20/22 Harmful by inhalation and if swallowed.  
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Safety Phrases

S53 Avoid exposure - obtain special instructions before use.  
S2 Keep out of reach of children.  
S16 Keep away from sources of ignition - No Smoking.  
S33 Take precautionary measures against static discharges.  
S34 Avoid shock and friction.  
S45 In case of accident or if you feel unwell, seek medical advice immediately.  
S60 This material and/or its container must be disposed of as hazardous waste.  
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this SDS**

Not applicable

### Contact

#### **Australian Poisons Information Centre**

24 Hour Service: - 13 11 26

Police or Fire Brigade: - 000 (exchange): - 1100

#### **New Zealand National Poisons Centre**

0800 764 766

### 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 Compliance at 1-580-251-4335.

**Disclaimer Statement**

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**\*\*\*END OF MSDS\*\*\***