



# MATERIAL SAFETY DATA SHEET

Revision: 01

Date: May 2017

## 1. PRODUCT AND COMPANY IDENTIFICATION

**1.1- Product name:** Bi-directional Boosters.

**1.2- Application:** Oil, Gas and Water Well

**1.3- Manufacturer:**

**ETASA (ARGENTINA) S.A**

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## 2. HAZARD IDENTIFICATION

The normal use and handling of Bi-directional Boosters does not present health hazards. Detonation may cause severe physical injury, including death. Inhalation of explosives powders may cause nervous system irregularity, headaches and dizziness

This Bi-directional Boosters does not present mass detonation risks, United Nations (0367 1.4S)

## 3. COMPOSITION, INFORMATION ON INGREDIENTS

Material

- HMX (Cyclotrimethylenetrinitramine)
- Aluminium Shield

## 4. FIRST AID MEASURES

- Move the victim to fresh air.
- Seek medical attention.
- Give artificial respiration if victim is not breathing.
- Give Oxygen if breathing is difficult.
- Remove contaminated clothes and footwear.
- Put abundant water in case of eye or skin contact.
- Make sure that medical personal have knowledge of involved materials and that personal protective equipment is used.

## 5. FIRE FIGHTINGS MEASURES

- Do not fight fire when it reaches the Charges.

- Stop the traffic and evacuate the area for at least 1600 feet. LET IT BURN.
- Do not move charges from vehicle if present.  
NOTIFY LOCAL AUTHORITIES IMMEDIATELY

Fire fighting procedures:

- Use abundant water. FLOOD IT
- If there is no water use CO<sub>2</sub> and/or quimic dust.
- Keep larger distance when fire fighting.
- Put special attention on wheels, it could rearm fire.
- Stay alert with fire-extinguisher ready.

## 6. ACCIDENTAL RELEASE MEASURES

- Eliminate all ignition sources.
- DO NOT SMOKE, NO FLARES USE, DO NOT PRODUCE SPARKS, AND MAKE FIRE IN THE AREA.
- All the equipment must be grounded during the use of it.
- Do not touch or walk over the spoiled material.
- Do not consume food or drinks in the contaminated exposed areas.
- Do not clear or reject anything, but under specialist instruction.

## 7. HANDLING AND STORAGE

Hazard Class		1.4S
Handling and storage conditions		Store and prepare only in authorized buildings, follow the local authority regulations of explosives and explosives articles.
Handling	Instruction for safe handling	<ul style="list-style-type: none"> <li>- Keep away from heat sources and flames.</li> <li>- Keep away from any ignition sources.</li> <li>- Avoid mechanical influences (Ex. impact, crushing)</li> <li>- Do not smoke</li> </ul>
	Fire and explosion protection	<ul style="list-style-type: none"> <li>- Do not smoke</li> <li>- Keep away from ignition sources and fire</li> <li>- Avoid any mechanical impact and crushing influences</li> </ul>
	Final disposition	- Disposal must be in accordance with local authorities.

## 8. EXPOSURE CONTROLS – PERSONAL PROTECTION

- Use only with adequate ventilation.
- Use safety glasses or goggles, gloves, protection masks again dust and mist.
- Use cotton clothes and conductive soled shoes.

## 9. PHYSICAL PROPERTIES

Aluminium Shield containing HMX

## 10. STABILITY AND REACTIVITY

- Detonation may be caused by friction, impact, heat, electric contact.

- Fire could produce irritant and toxic gases.
- Detonation produces hazardous fragments



## 11. / 12. TOXICOLOGICAL/ ECOLOGICAL INFORMATION

There are not ecological or toxicological damaged expected.

## 13. DISPOSAL CONSIDERATION

Final disposition must be under federal, state and local laws, regulations and ordinances

## 14. TRANSPORT INFORMATION

Proper shipping name:	<b>Fuzes, Detonating</b>	
Number UN	<b>0367</b>	
Class ICAO/IATA-DGR:	<b>1.4S</b>	
Packing instruction IATA:	<b>141</b>	
Class IMDG	<b>1.4S</b>	
Packing Group (GE):	<b>No</b>	
Marine Pollutant:	<b>No</b>	
Emergency phone:	Darío Lattanzio 011 15 4440 6526 Eliana Lorena Cabo 011 1531981440 Nora Villamea 011 1544360440	
FEM:	F-B, S-X	
Limited Quantities:	N/A	
Except Quantities:	N/A	
Special marking (IATA):	N/A	

## 15. REGULATORY INFORMATION

- Ley de Armas y explosivos 20.429 Decreto 302/83.
- Ley de Transito 24.449 Decreto 779/95.
- For international handling United Nation "Recommendation on the transport of dangerous goods" are applicable. (Orange Manual).

## 16. OTHER INFORMATION

- The 1.4S packaging or classified material 1.4S
- This products are designed and packed in such a way that allows energerical burn with small detonation and proximity fragments projections.
- The effects are usually limited to packaging proximity. If fire reached the charge storage area that contains 1.4S packaging or classified material 1.4S, consider a 50 feet isolation area. Keep a reasonable distance when fighting fire.
- Explosives must be handled following approved safety procedures under the direction of competent, qualified persons in accordance with local regulations.

This information contained is based on our actually knowledge. This information is given for the purposes on safety handling of our products and adapted safety precautions, but makes no warranty as to such.