



MATERIAL SAFETY DATA SHEET

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1. PRODUCT AND COMPANY IDENTIFICATION

1.1- Product name: Cord, Detonating

1.2- Application: Oil, Gas and Water Well

1.3- Manufacturer:

ETASA (ARGENTINA) S.A

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2. HAZARDS IDENTIFICATION

Substance clasification:



Explosive 1.4 H204 Fire or projection hazards.



Acute toxicity 3 H301 Toxic in case of ingestion

Precautionary statements:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces.

No smoking.

P250 do not subject to grinding/ shock/ friction.

P280 Wear face protection

P371+P375+P380 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

P373 Do not turn off the fire when it affect the charge.

P401 Store in accordance with local/regional/national/international regulations.

P501 Remove contents conform to the Local, Regional, National and International applicable reglamentation

Product detonation may cause severe physical injury, including death.

Product does not present mass detonation risks, United Nations (0289 1.4D)

3. COMPOSITION, INFORMATION ON INGREDIENTS

Material	N° CAS	Ingredients
	121-82-4	RDX (Cyclotrimethylenetrinitramine)
	2691-41-0	HMX (Cyclotetramethylenetetranitramine)

4. FIRST AID MEASURES

4.1 Description of first aid measures:

The normal use and handling of product does not present health hazards.

General Information:

- Seek medical attention.
- Give artificial respiration if victim is not breathing.
- Give Oxygen if breathing is difficult.
- Remove contaminated clothes and footwear.
- Make sure that medical personal have knowledge of involved materials and that personal protective equipment is used.

After inhalation:

Unlikely route of exposure.

Respiration of particulates is unlikely during normal usage.

Supply fresh air; consult doctor in case of complaints.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

4.2 Most important Symptoms and effects, both acute and delayed.

Blast injury if mishandled.

Hazards: Danger of blast or crush-type injuries.

4.3 Indication of any immediate medical attention and special treatment needed

Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

5. FIREFIGHTING MEASURES

5.1 Appropriate means of extinction:

Use abundant water. FLOOD IT

If there is no water use CO₂ and/or quimic dust.

5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters - Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

Fight fire from the most distance possible.

Do not fight fire when product is near.

In case of fire wheels, paying attention should be more.

Use extinguishers.

Evacuate area

Do not move product and vehicles.

Phone to firefighter and police.

6. ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures:

Keep away from ignition sources

NO SMOKING, NO FLARES USE, DON'T PRODUCE SPARKS, DON'T TURN ON FIRE IN THE AREA.

Don't walk on spill material.

Don't ingest products expose on contamination.

Don't clean anything without special supervision.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to item 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

Keep away from heat and direct sunlight.

Keep ignition sources away

Handle with care. Avoid jolting, friction and impact.

Do not smoke.

Information about fire and explosion protection:

Do not smoke.

Keep ignition sources away

Avoid mechanic influences, like impact and smash.

Dispose according to the local regulations.

7.2 Conditions for safe storage

Store in an authorized location.

Dispose according to the local explosive and articles explosive regulations.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

8.1 Control parameters:

No further relevant information available.

8.2 Appropriate technical controls:

Use only in good aerated places.

8.3 Individual protection measures:

Wear protective eye and gloves.

Is not necessary use the respiratory protective in normal operation conditions.

Use cotton clothing and footwear with conductive sole.

The measures in case of fire at the established in point 5, should be considered where advised are shown.

9. PHYSICAL PROPERTIES:

a. Appearance:

- Form: Solid material

- Colour: Green and black outside

b. Odour: mild

c. Odour threshold: Not determined

d. PH: Not Applicable.

e. Change in condition:

- Melting point: Not determined
- Freezing point: Not determined
- f. Boiling point: Not determined
- g. Flammability point: Not Applicable.
- h. Evaporation rate: Not Applicable.
- i. Inflammability: Not determined
- j. Superior or inferior limit of inflammability and explosion: Not Applicable
- k. Vapour pressure: Not Applicable
- l. Vapour Density: Not applicable
- m. Relative Density: Not applicable
- n. Solubility: Not determined
- o. Partition coefficient: Not determined
- p. Auto inflammation temperature: Not determined
- q. Decomposition temperature: Not determined
- r. Viscosity: Not Applicable
- s. Impact Sensitivity: Negative result (>2J)
- t. Friction sensitivity: Negative result (>80N)
- u. Thermal stability: No reaction

10. STABILITY AND REACTIVITY

10.1 Reactivity:

10.2 Chemical Stability:

Product is stable in normal pressure and temperature environmental conditions.

10.3 Possibility of hazardous reactions

Can produce a detonation by friction, impact, heat or spark.

In case of detonation, can be thrown dangerous fragments.

10.4 Conditions to avoid:

Keep ignition sources away

Do not smoke. Store away from oxidizing agents.

Keep away from heat and direct sunlight.

10.5 Incompatible Materials:

No further relevant information available.

10.6 Hazardous decomposition products:

Fire can produce toxic gases.

11 TOXICOLOGICAL INFORMATION

Substance	Nro CAS	LD ₅₀ (Oral, Rat)
RDX (Cyclotrimethylenetrinitramine)	121-82-4	59 mg/kg (rat)
HMX (Cyclotetramethylenetetranitramine)	2691-41-0	1500kg (rat)

11.1 Information on toxicological effects

Acute toxicity: if it is ingested.

Skin irritant: can cause irritation

Eye irritant: can cause irritation

Sensitization: No sensitizing effects known.

Carcinogenicity: No further relevant information available

Reproduction toxicity: No further relevant information available

Specific organic toxicity: No further relevant information available

Aspirate danger: No further relevant information available

11.2 Other information:
No further relevant information available

11. ECOLOGICAL INFORMATION

- 12.1 Toxicity:** No further relevant information available
12.2 Persistence and degradability: No further relevant information available.
12.3 Bioaccumulative potential: No further relevant information available.
12.4 Mobility in soil: No further relevant information available.
12.5 Additional ecological information: Avoid leaking underground or superficial water or in cliffs.
12.6 Other information: No further relevant information available.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Must not be disposed together with household garbage.
Damaged materials pose a danger to anyone in the immediate area; consult experts for disposal of damaged products.
Must be specially treated adhering to official regulations.

14. TRANSPORT INFORMATION

Proper shipping name:
Number UN
Class ICAO/IATA-DGR
Packing instructions IATA
Class IMDG:
Packing group (GE):
Marine Pollutant :
Emergency phone:

FEM:
Limited quantities:
Except quantities :
Special marking (IATA):

Cord, Detonating
0289
1.4D
PI139
1.4D
II
NO
Carlos Aman +54 2284 15 547828
Eliana Lorena Cabo +54 911 31981440
Nora Villamea +54 911 44360440
F-B, S-X
N/A
N/A
Cargo aircraft only



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 1.4D packaging or classified material 1.4D
- This product are designed and packed in such a way that allows energical 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 1.4D packaging or classified material 1.4D, 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.