



MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: MAXAM - Union Explosivos-Ensign Bickford, Sistemas de Iniciación, S.L.
Barrio de Zuazo, s/n
48960 Galdácano, Vizcaya, España

SOLD BY: Maxam North America, Inc.
5505 South 900 East, Suite 300
Salt Lake City, UT 84117

EMERGENCY CONTACT: (801) 233-6000 (Maxam North America, Inc.) or
(800) 424-9300 (CHEMTREC) or
(304) 836-5646 (Maxam North America, Inc. Plant)
917 220 100 / 900 100 605 (Union Explosivos)
94 457 72 00 (Fábrica de Zuazo)

TRADE NAME: Riodelt®, Seismic Riodelt®

CAS NUMBER: N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS*

PRIMARY EXPLOSIVE: Lead Azide, Lead Trinitroresorcinate
SECONDARY EXPLOSIVE: Pentaerythrythol Tetranitrate, PETN
PROTECHNIC COMPOSITION: Lead Peroxide, Potassium Permanganate, Silicon, Antimony
** Not all components are used for each product*

Danger Symbol	R Phrases	S Phrases	CAS Register N°
E	1-3	2-16	13424-46-9
E	1-3	2-16	14245-44-0
E	1-2	2-16	78-11-5
Xn	20/22-33	13-20/21	1309-60-0
O/Xn	8-22	2	7722-64-7
F	15	7/8-16-43	7440-21-3
Xn	20/22	22	7440-36-0

SECTION 3 – HAZARDS IDENTIFICATION

FOR PEOPLE: Improper handling of the product may cause it to explode, and this may lead to injuries due to projection of particles.

ENVIRONMENTAL: Dangers in accordance with their chemical components: Lead compounds.

MATERIAL SAFETY DATA SHEET

SECTION 4 – FIRST AID AND MEASURES

If explosion fumes have been inhaled, remove to a well ventilated area. If breathing difficulties persist seek medical help.

An explosion would cause injuries by projection of particles. In the event of injuries, call for immediate medical attention.

SECTION 5 – FIRE-FIGHTING MEASURES

DO NOT FIGHT AN ESTABLISHED FIRE. Evacuate the area immediately. Avoid toxic fumes created by the fire. Clear area and allow it to burn out.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

- Pick up the boxes or units.
- Prevent factors affecting product stability.
- Do not use damaged detonators.
- Destruction of damaged detonators must be carried out under the direct supervision of a person qualified in accordance with current regulations.
- This material can become dangerous waste under certain conditions, and must be collected, labeled and destroyed by means of explosion in accordance with current regulations.

SECTION 7 – HANDLING AND STORAGE

HANDLING: Current regulations concerning the handling and use of explosives must be complied with at all times. No smoking. Always keep the detonators away from all sources of heat, flames or sparks.

STORAGE: Current regulations concerning the storage of explosives must be complied with at all times. Store the detonators separately from explosives, detonating cord, boosters or fuses. Keep the detonators away from other explosives in the work place until they are connected.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

RESPIRATORY: Avoid inhaling fumes from the detonation.

HANDS: Not required.

EYE: The use of approved safety visors during handling of the product is advisable.

GENERAL: The use of semiconductor footwear and antistatic clothing during handling of the product is advisable.



MATERIAL SAFETY DATA SHEET

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Aluminum shell crimped to a plastic tube. (Test Method: MAXAM internal method)

SMELL: Odorless

AUTOIGNITION TEMPERATURE: 200° C

DANGER OF EXPLOSION: Yes.

X SECTION 10 – STABILITY AND REACTIVITY

STABILITY: May explode if subjected to flames, heat, impacts, friction, electrical currents, electrostatic energy and radiofrequency.

CONDITIONS TO AVOID: Do not expose to temperatures exceeding 75° C. Avoid contact with acids and bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Lead fumes, carbon monoxide and oxides of nitrogen.

X SECTION 11 – TOXICOLOGICAL DATA

The product only runs the risk of toxicological problems due to toxic gases (lead fumes, carbon monoxide, and oxides of nitrogen) following detonation.

X SECTION 12 – ECOLOGICAL INFORMATION

The only ecological risks are those stemming from use of the product (detonation).

X SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: The detonators must be disposed of by explosion carried out under the direct supervision of a person qualified in accordance with current regulations.

PACKAGING: The product is packaged in cardboard, and may be recycled. The outer and inner package is made from cardboard and may be recycled.

X SECTION 14 – TRANSPORTATION INFORMATION

<i>SHIPPING NAME:</i>	Explosive, Type EP31, UN0030, 0225, 0456
<i>HAZARD CLASS AND DIV.:</i>	1, 1.1B, 1.4B, 1.4S
<i>ID NUMBER:</i>	UN0030, 0225, 0456
<i>APPROVAL No.:</i>	RD-2114/1978, RD-863/1985 and other directives which expand upon the same.
<i>PACKING GROUP:</i>	EP31
<i>DANGEROUS WHEN WET:</i>	No
<i>POISON:</i>	No

MATERIAL SAFETY DATA SHEET

Before using this product, read the Safety Recommendations on the box.

SECTION 15 – OTHER INFORMATION

This safety data dossier describes our products in accordance with the safety regulations and aspects, and includes our current experiences and information. Such information is not to be taken as a guarantee of properties.