

# MAXAM

ANADOLU  
CIVIL EXPLOSIVE



[www.maxam.com.tr](http://www.maxam.com.tr)



# MAXAM ANADOLU

## CIVIL EXPLOSIVES

### OUR COMPANY

Maxam Anadolu has been formed by merging our partnership and limited companies along with our 18 years of experience and ambition in civil explosive sector in 2009. Our company has started the production of ANFO' which is a key explosive material in the sector and has formed partnership with MAXAM EUROPE SA, Spanish giant in Civilian Explosive Substance of Europe for investing in Turkey in 2010. Manufacturing of all other explosive material shall be initiated in 2011 in Malatya.

Our company gives services in all phases from determination of amount of explosives, transportation of explosives to the field and execution of the blast to presentation of the reports with the latest technological production as Maxam's norm. Also Maxam Anadolu gives services to customers on taking licenses, preparing needed explosive quantities, transportation of explosives to jobsite, blasting service and preparing blast report. Along with these, our company is the only organization which gives turnkey Seismic Blast Services with the latest technology electronic detonators in our country.

Also our company exports and imports civil explosives except civil explosive production and domestic marketing. In this way, our company provides high quality and wide product range Maxam explosive to customers for all kind of projects.

Our mission is to be innovative company in civil explosive sector and to provide high quality and innovative products to customers.

Sincerely,

**Nurettin KARABEKMEZ**  
Chairman of Board





## AREA OF USAGE

- Dams and Power Plants
- Mine and Quarries
- Canal Blasting
- Road and highway Construction
- Open Pits and Underground Mining

## APPLICATION

To do ANFO more effective, cap sensitive booster should be used in needed quantity

## USAGE

ANFO should be carefully handled, stored and used. ANFO should be keep away from flame and heat source.

## ADVANTAGES

- Economic
- Insensitive to friction and impact
- Handling and bole charge is easy
- High safety
- Not usable for wet boreholes
- Not usable in underground projects if there is methane gas

## PURIFICATION

Purification of explosive can be dangerous. You should obey to Material Safety Data Sheet.

## STORAGE

Explosives should be stored in dry, cool and well ventilated warehouses.

## TECHNICAL CHARACTERISTICS

Packing	Packing Weight
Plastic Bag	25
density g/cm <sup>3</sup>	0,80 / 0,82 g/cm <sup>3</sup>
Detonasyon hızı m/s	4000 m/s
Enerji	4,9 mj / kg
Gaz Hacmi	877 lt / kg
Suya Dayanıklığı	Tanecik halinde kuru deliklerde kullanılabilen bir patlayıcıdır.
Nakliye Sınıflandırması	Standart Ambalaj
Sınıf	1.1D
UN Numarası	0082



كيفية التعليب	وزن الحاوية
كيس بلاستيكي	25
الكثافة غ/سم <sup>3</sup>	0,82 / 0,80 غ/سم <sup>3</sup>
سرعة التفجر م/س	4000 م/س
الطاقة	4,9 م جي كغ
حجم الغاز	77 لتر كغ
المقاومة ضد المياه	مادة مفجرة مستعملة في الأثقاب جافة وحببية الشكل
تصنيف شكل النقل	تعليب مقياسي
الصف	1 د 1
رقم يو أن	0082







**DESCRIPTION**

RIOGEL SB is the result of the most advanced developments in watergel technology. RIOGEL SB is a booster sensitive, cost effective watergel. The gel structure gives the product a rubber-like tough consistency and outstanding water resistance. RIOGEL SB is manufactured in medium to large diameters to satisfy the needs of a variety of applications.

**APPLICATION**

RIOGEL SB is an ideal choice for hard rock blasting in quarries, mining and construction under wet conditions..

**ADVANTAGES**

- Good aging, no crystallisation.
- Highly water resistant.
- Wide variety of applications.
- Water and abrasion resistant.

**RECOMMENDATIONS FOR USE**

Water resistance allows its use in wet boreholes. Do not use in flammable or methane atmospheres. This product is booster sensitive. The temperature of this product should be within the range of -10°C and

**SAFETY**

RIOGEL SB, ürünün alevlerden ve aşırı ısı kaynaklarından uzak tutulduğundan emin olunarak dikkatli bir şekilde kullanılmalı, taşınmalı ve depolanmalıdır.

**STORAGE**

To maintain the properties of MAXAM's explosives, we recommend they be stored in authorized deposits, in a cool dry place, with good ventilation.

**TECHNICAL CHARACTERISTICS**

Density (g/cm <sup>3</sup> )	1,15
Velocity of Detonation* (m/s)	4400 – 6500
Relative Effective Energy	1 (%)
Relative Weight Strength	118
Relative Bulk Strength	170
Gas Volume (L)	1017

1) ANFO: Density 0,80 g/cm<sup>3</sup> , effective energy 2260 kJ/kg  
\* VOD is dependent on application, diameter, confinement, and density. The maximum value within the range is the ideal VOD



**الخواص الفنية**

فواصل الكثافة (غ/سم <sup>3</sup> )	1,15
سرعة التفجر* (م/س) (فود)	4.400 6.500
الطاقة الحيوية النسبية 1 (%)	
الجهد الوزني النسبي	118
جهد الكتلة النسبية	170
حجم الغاز (ل)	1017

1 أنفو : الكثافة 0,80 غ/سم<sup>3</sup> ، الطاقة الحيوية 2260 ك جي/كغ  
\* خاص بتطبيقات سرعة التفجر، القطر، المساحة المغلقة والكثافة. القيمة الأعظمية الموجودة في الفواصل هي السرعة المثالية  
\*\* نتيجة التجارب والفحوصات الجارية داخل الماسورة الحديدية ذات قطر 45 ملم.  
\*\*\* نتيجة التجارب والفحوصات الجارية داخل الماسورة الحديدية ذات قطر 125 ملم.

**Standard Packaging (Nominal values)**

التعليب المقياسي 1.1 د (القيم الإعتيادية)

القطر x الطول (ملم)	وزن الخرطوشة (غرام)	عدد الخرطوشات/العلبة	الوزن/ العلبة (كغ)	نوعية الغلق
Diameter x Length (mm)	Cartridge Weight (g)	Cartridges/Box	Net Weight/box (kg)	Type of Encasing
50x520	1176	17	20	Plastik film kartuş (HDPE)**
65x520	2000	10	20	Plastik film kartuş (HDPE)**
75x560	2857	7	20	Plastik film kartuş (HDPE)**
90x550	4000	5	20	Plastik film kartuş (HDPE)**
125x590	8500	2	17	Plastik film kartuş (HDPE)**
140x560	10000	2	20	Plastik film kartuş (HDPE)**

\*\* خرطوشة فلمية بلاستيكية

\* عبارة عن قائمة مقياسية يمكن القيام بالإنتاجات بأقطار وبأبعاد مختلفة

Transport Classification	Standard Packaging	تصنيف شكل الشحن والنقل	التعليب القياسي
Class	1.1D	الصف	د 1.1
UN Number	0241	رقم يو أن	0241

Contact your local MAXAM representative for further information يرجى الإتصال بممثل شركة ماكسام المحلية لغاية الحصول على معلومات وافية







**DESCRIPTION**

RIOGEL TRONER HE is the result of the most advanced developments in watergel technology. RIOGEL TRONER HE is a high strength, high density cap sensitive watergel. The gel structure gives the product a rubber-like tough consistency and outstanding water resistance. RIOGEL TRONER HE is manufactured in a variety of cartridge sizes to satisfy the needs of all blasting applications

**APPLICATION**

RIOGEL TRONER HE combines both sensitivity and high energy. Its density makes it ideal for use in wet boreholes, and makes it a viable option for the use as a bottom charge for medium-hard rock and for column charges in wet boreholes.

**ADVANTAGES**

- Water and abrasion resistant.
- Combines both sensitivity and high energy.
- Provided in a variety of cartridge sizes.
- Higher bulk energy than emulsions.
- Good aging, no crystallisation.
- Wide variety of applications.

**RECOMMENDATIONS FOR USE**

Water resistance allows its use in wet boreholes. Do not use in flammable or methane atmospheres. This product is detonator and RIOCORDER 12 g/m sensitive. The temperature of this product should be within the range of -10°C and +60°C. For further information consult the Use Recommendations Sheet included inside the boxes or packaging of the product and its respective Material Safety Data Sheet

**SAFETY**

USE: RIOGEL TRONER HE should be used, handled and stored with care, ensuring the product is kept away from flames and excessive heat sources. DISPOSAL: The disposal of explosive material can be dangerous, ensure the appropriate safety measures have been applied according to the instructions on the MSDS

**STORAGE**

To maintain the properties of MAXAM's explosives, we recommend they be stored in authorized deposits, in a cool dry place, with good ventilation.

**TECHNICAL CHARACTERISTICS**

Density Range (g/cm <sup>3</sup> )	1,25
Velocity of Detonation* (m/s)	2800 - 6800
Relative Effective Energy	1 (%)
Relative Weight Strength	108
Relative Bulk Strength	169
Gas Volume (L)	933

1) ANFO: Density 0,80 g/cm<sup>3</sup>, Effective energy 2.59 MJ/kg.

\* VOD is dependent on application, diameter, confinement, and density the maximum value within the range is the Ideal VOD.



**الخواص الفنية**

فواصل الكثافة (غ/سم <sup>3</sup> )	1,25
سرعة التفجير* (م/س) (فود)	2.800 - 6.800
الطاقة الحيوية النسبية 1 (%)	1
الجهد الوزني النسبي	108
جهد الكتلة النسبية	169
حجم الغاز (ل)	933

1 أنفو : الكثافة 0,80 غ/سم<sup>3</sup> ، الطاقة الحيوية 2,59 م جي/كغ  
 \* خاص بتطبيقات سرعة التفجير ، القطر ، المساحة المغلقة والكثافة. القيمة الأعظمية الموجودة في الفواصل هي السرعة المثالية.  
 \*\* نتيجة التجارب والفحوصات الجارية داخل الماسورة الحديدية ذات قطر 45 ملم.  
 \*\*\* نتيجة التجارب والفحوصات الجارية داخل الماسورة الحديدية ذات قطر 125 ملم.

**Standard Packaging (Nominal values)**

**التعليب المقياسي 1.1 د (القيم الإعتيادية)**

القطر×الطول (ملم) Diameter x Length (mm)	وزن الخرطوشة (غرام) Cartridge Weight (g)	عدد الخرطوشات/ العبوة Cartridges/Box	الوزن/ العبوة (كغ) Net Weight/box (kg)	نوعية الغلق Type of Encasing
26x320	165	145	24	Plastik film kartuş (HDPE)**
26x500	343	70	24	Plastik film kartuş (HDPE)**
28x200	143	140	20	Plastik film kartuş (HDPE)**
32x250	260	96	25	Plastik film kartuş (HDPE)**
38x500	714	35	25	Plastik film kartuş (HDPE)**
40x330	500	48	24	Plastik film kartuş (HDPE)**
50x250	615	39	24	Plastik film kartuş (HDPE)**
65x250	1000	21	21	Plastik film kartuş (HDPE)**
65x500	2000	12	24	

\*\*خرطوشة فلمية بلاستيكية

\* عبارة عن قائمة مقياسية يمكن القيام بالإنتاجات بأقطار وبأبعاد مختلفة.

<b>Transport Classification</b>	<b>Standard Packaging</b>
Class	1.1D
UN Number	0241

<b>تصنيف شكل الشحن والنقل</b>	<b>التعليب المقياسي</b>
الصف	د 1.1
رقم يو أن	0241

\*Contact your local MAXAM representative for further information.

يرجى الإتصال بممثل شركة ماكسام المحلية لغاية الحصول على معلومات وافرة







### DESCRIPTION

MAXAM has developed RIOMAX, a high performance high energy, reliable explosive in terms of strength and energy, it is sensitised with microballoons, and has been specifically designed for small hole diameters.

RIOMAX has a solid consistency and is grey in colour due to the aluminium in its composition and cartridged in waxed paper. RIOMAX has the appearance of dynamites, with lower NOx fumes. The cartridges are packaged in plastic bags, and shipped in cardboard boxes.

### APPLICATION

RIOMAX is an ideal solution for quarrying, trench work, shaft sinking, underground blasting of hard rock, and specialty projects such as underwater blasting.

RIOMAX is also an excellent primer for RIOXAM (ANFO).

RIOMAX has been noted for its low NOx fumes generation, reducing ventilation time after blasting underground in nonflammable atmospheres.

### ADVANTAGES

- Highly energetic
- #8 detonator sensitive.
- Water resistance.
- Low NOx fumes generation.
- Can be tampered in hole.
- Excellent as a primer.

### RECOMMENDATIONS FOR USE

RIOXAM is sensitive to both RIONEL and RIODET detonators, its water resistance allows for its use in wet boreholes. Do not use in flammable or methane atmospheres. The temperature of this product should be within the range of -10°C and +60°C. For further information consult the Use Recommendations Sheet included inside the boxes or packaging of the product and its respective Material Safety Data Sheet.

### SAFETY

USE: RIOXAM should be used, handled and stored with care, ensuring the product is kept away from flames and excessive heat sources.

DISPOSAL: The disposal of explosive material can be dangerous, ensure the appropriate safety measures have been applied according to the instructions on the MSDS.

### STORAGE

To maintain the properties of MAXAM's explosives, we recommend they be stored in authorized deposits, in a cool dry place, with good ventilation.

### TECHNICAL CHARACTERISTICS

Density (g/cm <sup>3</sup> )	1,20
Velocity of Detonation* (m/s)	2600 - 6400
Relative Effective Energy	1 (%)
Relative Weight Strength	117
Relative Bulk Strength	176
Gas Volume (L)	938

1) ANFO: Density 0,80 g/cm<sup>3</sup>, Effective energy 2.59 MJ/kg.

\* VOD is dependent on application, diameter, confinement, and density, the maximum value within the range is the Ideal VOD..

### الخواص الفنية

فواصل الكثافة (غ/سم <sup>3</sup> )	1,20
سرعة التفجير* (م/س) (فود)	2.600 6.400
الطاقة الحيوية النسبية 1 (%)	117
الجهد الوزني النسبي	179
جهد الكتلة النسبية	938
حجم الغاز (ل)	938

1 أنفو : الكثافة 0,80 غ/سم<sup>3</sup> ، الطاقة الحيوية 2.59 م جي/كغ  
\* خاص بتطبيقات سرعة التفجير ، القطر ، الساحة المغلقة والكثافة. القيمة الأعظمية الموجودة في الفواصل هي السرعة المثالية.  
\*\* نتيجة التجارب والفحوصات الجارية داخل الماسورة الحديدية ذات قطر 45 ملم.  
\*\*\* نتيجة التجارب والفحوصات الجارية داخل الماسورة الحديدية ذات قطر 125 ملم.

Diameter x Length (mm)	Cartridge Weight (g)	Cartridges/Box	Weight/box (kg)	Type of Encasing
26x200	121	165	20	Parafinli kağıt kartuş
28x200	143	140	20	Parafinli kağıt kartuş
32x200	182	110	20	Parafinli kağıt kartuş
38x400	541	38	20	Parafinli kağıt kartuş
50x380	909	25	20	Parafinli kağıt kartuş

Box Dimensions [ L x W x H ] : 430 x 290 x 205

القطر×الطول (ملم)	وزن الخرطوشة (غرام)	عدد الخرطوشات/ العلبه	الوزن/ العلبه (كغ)	نوعية الغلق
26x200	121	165	20	خرطوشة بارافينية ورقية
28x200	143	140	20	خرطوشة بارافينية ورقية
32x200	182	110	20	خرطوشة بارافينية ورقية
38x400	541	38	20	خرطوشة بارافينية ورقية
50x380	909	25	20	خرطوشة بارافينية ورقية

\* عبارة عن قائمة مقياسية يمكن القيام بالإنتاجات بأقطار وأبعاد مختلفة.

التعليب القياسي تصنيف شكل الشحن والنقل

الصف 1.1 د  
رقم يو أن 0241

يرجى الإتصال بممثل شركة ماكسام المحلية لغاية الحصول على معلومات وافرة





## DESCRIPTION

RIONEL is Maxam's non electric initiation system. The down-the-hole detonators are strong enough to initiate all Maxam's boosters and primers. The surface connectors have a plastic connector and a low-charged detonator of high precision that minimises noise and shrapnel. All Rionel items are manufactured using the highest quality last generation shock tube. This is made of three different layers of polymers and contain a thin and uniformly distributed internal layer of shock transmission substance. The RIONEL system is designed in a wide selection of materials and highly visual colours, making it safe, easy to identify and user friendly under the most difficult conditions.

## RIONEL DDX

A combination of down-the-hole detonators and surface connectors designed to be used as complete singular initiation system for open cast mining applications. Each item contains a surface connector and a down-the-hole detonator (of the same delay period). The connector can initiate up to six shock tubes. RIONEL DDX assists with effortless hooking-up of blasts with a large numbers of boreholes

## RIONEL MS

A series of down-the-hole detonators, designed for use mainly in open cast mining, quarrying and civil works blasting. RIONEL MS can be initiated by any RIONEL, RIODET, RIOCAP, RIOCORD (5g/m minimum) or a non-electric special initiator

## RIONEL SCX

A series of surface connectors designed to initiate any RIONEL detonator, assisting in delay sequencing of non-electric detonators. RIONEL SCX can initiate up to 6 shock tubes. The connector contains a low charge detonator minimising the creation of noise and shrapnel.

## RIONEL LP

A series of detonators for use mainly in underground mining, tunnelling and gallery excavations. RIONEL LP can be initiated by any RIONEL, RIODET, RIOCAP, RIOCORD (5g/m minimum) or a non electric special initiator. atesleyicisi ile patlatilabilir.



## RIONEL DDX

Surface time (ms) Hole-in-time (ms)\*  
 وقت التسطیح (م س) \* وقت داخل الثقب (م س)

17	425
25	450
42*	475
67	500*



\* Standard production. الإنتاج القياسي.

## RIONEL LP

Delay times (nominal values)

ريونال ل ب (نفقي)  
 أوقات التأجيل (القيم الإعتيادية)

Gecikme	Zaman (ms)	Gecikme	Zaman (ms)
التأخر	الوقت (م س)	التأخر	الوقت (م س)
1	100	16	1600
2	200	18	1800
3	300	20	2000
4	400	25	2500
5	500	30	3000
6	600	35	3500
7	700	40	4000
8	800	50	5000
9	900	60	6000
10	1000	70	7000
12	1200	80	8000
14	1400	90	9000

## FEATURE First Feature List (m)

القائمة المترية الخاصة بالإنتاجات المترية (م)

2	14
2,4	15
3	16
4,2	18
5	19
6	21
8	24
9	27
10	30
12	

## RIONEL SCX

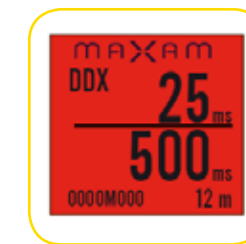
ريونال س سي إس (الوصل السطحي)

Delay times (nominal values)

أوقات التأجيل (القيم الإعتيادية)

Link Color	Time (ms)
لون الوصل	الوقت (م س)
	0
	9
	17
	25
	33
	42
	67

\* Standard production. إنتاج قياسي.







**MAXAM**  
ANADOLU  
CIVIL EXPLOSIVES





**MAXAM**  
ANADOLU  
CIVIL EXPLOSIVE

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