PRODUCT
CATALOGUE

EURENCO

THE EUROPEAN LEADER IN ENERGETIC MATERIALS

INTRODUCTION

EURENCO was created in 2004 from the merger between SNPE "Explosifs & Propulseurs" and NEXPLO. EURENCO inherited from these companies a presence in several European countries and a high level of know-how in the field of energetic materials.

As the European leader in military explosives, propellants and fuels, EURENCO also supplies explosives for the civil sector (oil and gas drilling, mining) and has the world's largest production capacity for 2-EHN (fuel additive).

OUR PURPOSE

EURENCO is a key player in the defense sector serving the sovereignty of France and Europe. We design, produce and supply innovative products and solutions with high added value in the fields of pyrotechnics and chemistry.

OUR VISION

To strengthen our position as a leading European player and to become a world leader in all our sectors of activity.

EURENCO is driven by a spirit of conquest and innovation. By spreading the best local practices from each of our sites, we aim to develop all our talents and strengthen our technological leadership. By thinking globally and acting locally, we accelerate the creation of value for our customers.

OUR MISSION

To design, produce and monitor, throughout their life cycle, high performance and safety products and solutions in the field of energetic materials for Defense and their derivatives for civilian applications

OUR VALUES

Safety first

Ensuring the safety of our employees, our customers, the end-users of our products, and our facilities.

Customer Satisfaction

Listening carefully to our customers, anticipating their needs and innovating to bring them added value, while strengthening our profitability.

Team strength

Winning as a team, capitalising on our know-how and developing our sense of belonging.

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EXPLOSIVES

I.EXPLOSIVES

EURENCO develops, manufactures and provides a unique range of products for the military and civil markets:

- **Single molecules**: EURENCO provides a complete range of high explosives, including, high performance, insensitive and thermostable molecules and also oxidizers and energetic polymers;
- **High explosives (Conventional & Insensitive)** for melt-cast, pressed and cast PBX explosive charges, fuse boosters, pyrotechnics, mining and oil & gas applications;
- **Cast PBX charges for Insensitive Munitions:** missile warheads, bombs and penetrators, torpedoes, shell ammunition, underwater mines and mine neutralizers, fuzes, cutting charges;
- **Plastic explosives** for demolition, breaching and cutting operations. To ensure both flexibility and large-scale capabilities, EURENCO is equipped with modern and innovative facilities, such as multipurpose synthesis units and automated filling workshops for Insensitive Munitions.

PRODUCTION PLANTS

Karlskoga (Sweden)
Sorgues (France)

COMMERCIAL OFFICE

Sorgues (France)
Washington DC (USA)

EXPLOSIVES

SINGLE MOLECULES

EURENCO provides a complete range of high explosives, including, high performance, insensitive and thermostable molecules and also oxidizers and energetic polymers. Laboratories and multi-purpose units also contribute to the development and scale-up of new energetic molecules.

RDX

Best solution for both performance and cost

SPECIFICATIONS

MIL-DTL-398 C
STANAG 4170

APPLICATION

Main charges for warheads, ammunition and boosters

Pyrotechnical devices (cap-relay, detonators, cutting cords)

Oil well perforating charges

TECHNICAL CHARACTERISTICS

1,82	8 750 m/s
Density	Detonation velocity

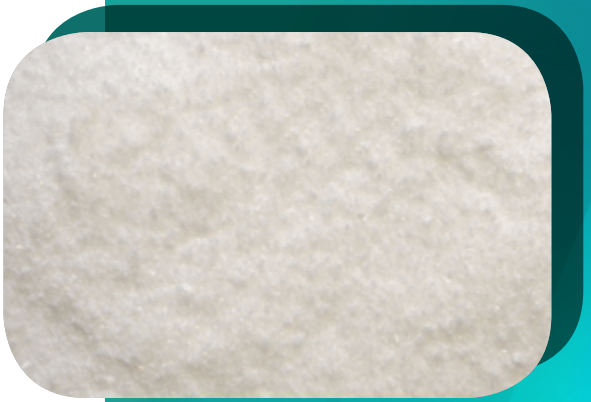
RDX type 1 and type 2 available in all standard particles sizes (Class 1 to Class 5)

Specific grades available on request

I-RDX ("insensitive grade") Threshold for detonation	**Increased from 25 to 55 Kbar when used with PBXN109**

HMX

Best solution for high performance, high thermal stability and low shock sensitivity



SPECIFICATIONS

MIL-DTL-45444 C
STANAG 4284

APPLICATION

Main charges for warheads, ammunition and boosters

Oil well perforating charges, shock tubes and detonating cords

Formulations more insensitive to shocks

TECHNICAL CHARACTERISTICS

1,91 Density	**9 100 m/s** Detonation velocity
287 °C Deflagration point	

Threshold for detonation	**increased from 28 to 40 Kbar when used in PBX with 85% HMX**
Standard particle sizes	**class 1 to class 5**

Specific grades available on request

HNS

High thermal stability and good initiation reliability

SPECIFICATIONS

MIL-WS-5003

APPLICATION

Booster charges

Space and military pyrotechnics

Perforating and cutting charges for oil & gas industry

Initiation explosive in slapper detonators

TECHNICAL CHARACTERISTICS

1,74
Density

7 000 to 7 100 m/s
Detonation velocity

316 – 318 °C
Deflagration point

HNS type 1 to type 4

TATB

Low sensitivity and high thermal stability

SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Insensitive compositions for main charges and boosters

TECHNICAL CHARACTERISTICS

1,94
Density

7 970 m/s
Detonation velocity

320 °C
Self ignition temperature

NTO

High performance, low sensitivity and enhanced thermal stability

SPECIFICATIONS

STANAG 4170

APPLICATION

Insensitive compositions for main charges and boosters

TECHNICAL CHARACTERISTICS

1,91
Density

8 430 m/s
Detonation velocity

0% at 353 N
Friction sensitivity

class 1 to class 4
Standard particle sizes

Specific grades available on request

PETN

More sensitive to shock and friction than standard explosives

SPECIFICATIONS

STANAG 4023

APPLICATION

Detonating cords and cutting charges for mining

Plastic explosive for demolition, demilitarization and main fill for hand grenades

Initiation and booster charges

TECHNICAL CHARACTERISTICS

1,76
Density

8 400 m/s (1,7 g/cm^3)
Detonation velocity

3 J
Impact sensitivity

ADN

Strong oxidizer and high impulse

SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Ingredient in composite rocket motor propellants and depth charges for underwater ammunition

Liquid mono propellant for rocket motors used in spacecraft propulsion

TECHNICAL CHARACTERISTICS

1,81
Density

approx. 7 000 m/s
Detonation velocity

-35,8 kJ/mole
Heat of formation

3 grades **crystalline, prilled and coated, ultra pure**

Green product **no HCL release**

GAP DIOL

Energetic polymer used as a binder

SPECIFICATIONS

According to EURENCO spec.

APPLICATION

High energetic composite rocket propellant grains

Insensitive charges and LOVA propellants for ammunition

Gas generators for automotive safety

TECHNICAL CHARACTERISTICS

1,24 - 1,29
Density

488 mm/s
Combustion velocity

≈ 2000
Mean molecular weight

TNC

Ignition and thermostability

SPECIFICATIONS

MIL-T-13723

APPLICATION

Ignition composition for ammunition

Catalyst for airbags' combustion (automotive safety)

TECHNICAL CHARACTERISTICS

290 / 295 °C
Melting point

378 °C
Self ignition temperature

EXPLOSIVES

DEFENSE & SECURITY

For the Defense & Security market, EURENCO develops and produces explosive formulations for melt-cast, pressed and cast-PBX applications in main charges and boosters:

- Conventional compositions for medium caliber, warheads, artillery, tank and mortar ammunition;
- Insensitive compositions for the loading of Insensitive Munitions;
- Demolition explosives for explosive ordnance disposal as well as demolition, cutting and breaching operations

CONVENTIONAL COMPOSITIONS

EURENCO provides a wide range of conventional formulations to be used for shaped charges, medium caliber ammunition (20 mm, 25 mm, 30 mm, 40 mm), as well as main charges and boosters in warheads, mortar, tank and artillery shells.

COMP B

RDX / TNT

SPECIFICATIONS

MIL-C-401

APPLICATION

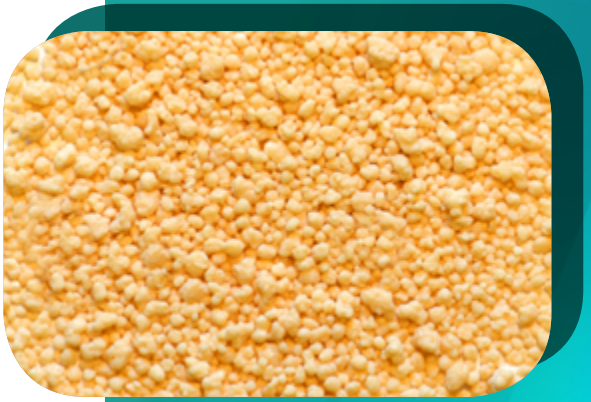
Melt-cast or pressed compositions for main charges

TECHNICAL CHARACTERISTICS

1,71 Density	**7 900 m/s** Detonation velocity
Granular form Grades	**< 7 s** Low viscosity

HEXOTOL

RDX / TNT



SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Melt-cast compositions for main charges

TECHNICAL CHARACTERISTICS

1,65 - 1,71
Density

7800 - 8000 m/s
Detonation velocity

Granular form
Grades

Ingredient ratio adapted to required performance

OCTOL

HMX / TNT

SPECIFICATIONS

MIL-O-45445B

APPLICATION

Melt-cast composition for high performance warheads and shaped charges

TECHNICAL CHARACTERISTICS

1,805 - 1,81
Density

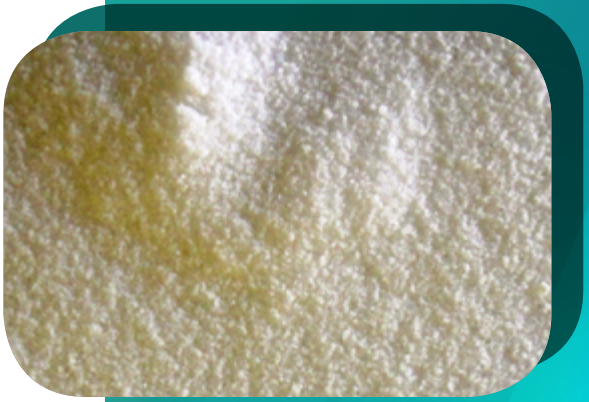
Class 1
Octol type 1

Class 1 and 2
Octol type 2

Ingredient ratio adapted to required performance

COMP A3 / A4 / A5

RDX / Wax or Binder



SPECIFICATIONS

A3/A4: MIL-C-440
A5: MIL-E-14970

APPLICATION

Pressed composition for boosters and main charges

TECHNICAL CHARACTERISTICS

1,61 for Comp A3
Density

8470 m/s for Comp A3
Detonation velocity

CH-6

RDX / Binder

SPECIFICATIONS

MIL-C-21723

APPLICATION

Pressed composition for boosters

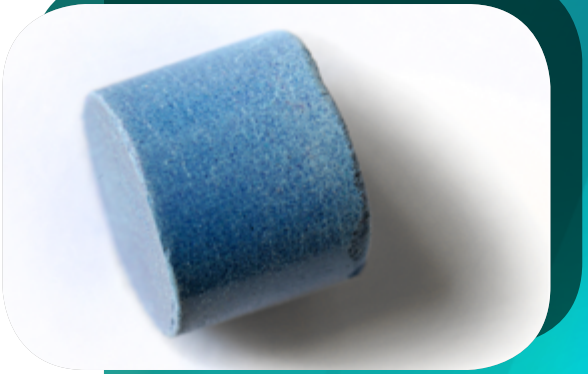
TECHNICAL CHARACTERISTICS

1,64
Density

8070 m/s
Detonation velocity

HEXOWAX

RDX / Wax or Binder



SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Pressed composition for main charges and boosters

TECHNICAL CHARACTERISTICS

1,71 - 1,73
Density

8350 - 8450 m/s
Detonation velocity

Ingredient ratio adapted to required performance

PBXW-17

RDX / Polyacrylate

SPECIFICATIONS

MIL-DTL-32057 (OS)

APPLICATION

Pressed composition for shaped charges and boosters

TECHNICAL CHARACTERISTICS

> 1,66
Density

8100 m/s
Detonation velocity

PBXN-5

HMX / Viton

SPECIFICATIONS

MIL-E-81111

APPLICATION

Pressed composition for boosters

TECHNICAL CHARACTERISTICS

1,86
Density

8800 m/s
Detonation velocity

white granules
Grades

PBXW-11

HMX / Polyacrylate

SPECIFICATIONS

DTL-WS-33500

APPLICATION

Pressed composition for shaped charges and boosters

TECHNICAL CHARACTERISTICS

1,80 - 1,83
Density

8820 m/s
Detonation velocity

OCTOWAX

HMX / Wax or Viton

SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Pressed composition for high performance warheads and shaped charges

TECHNICAL CHARACTERISTICS

1,78 - 1,86
Density

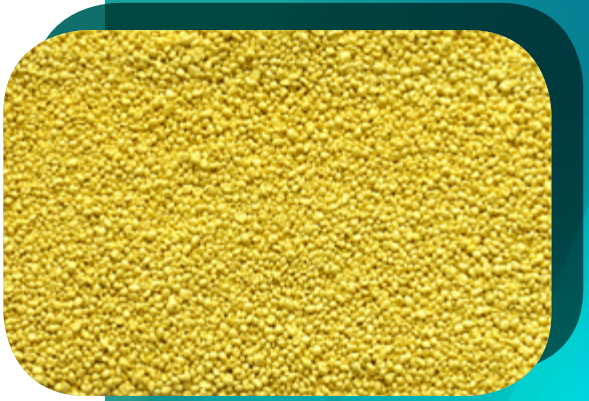
8800 m/s
Detonation velocity

INSENSITIVE COMPOSITIONS

EURENCO develops insensitive formulations to be used in boosters and main charges by warheads and ammunition manufacturers. In addition to melt-cast and pressed compositions, EURENCO also provides Cast PBX formulations and filling, ready to use, specifically for the loading of Insensitive Munitions (shell ammunition, missile and torpedo warheads, underwater mines, aircraft bombs…). EURENCO equipped with both high-tech and cost-effective loading facilities, and contributes to the development of new Insensitive Munitions, in partnership with customers.

PBXN-7

TATB / RDX



SPECIFICATIONS

MIL-DTL-82744

APPLICATION

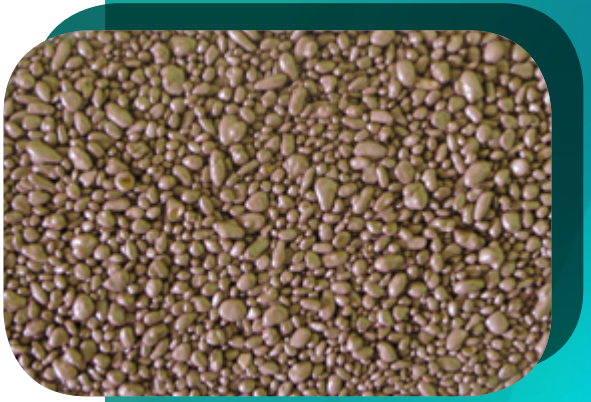
IM pressed composition for boosters

TECHNICAL CHARACTERISTICS

1,78 Density	**7770 m/s** Detonation velocity
2,5 - 3,8 mm Critical diameter	**20 kbars** Shock sensitivity

V350

TATB / HMX



SPECIFICATIONS

STANAG 4170

APPLICATION

IM pressed composition for boosters and main charges

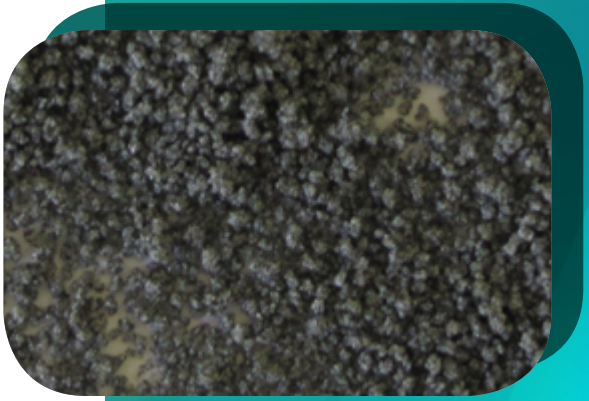
TECHNICAL CHARACTERISTICS

1,887
Density

8170 m/s
Detonation velocity

P16945

NTO / RDX



SPECIFICATIONS

STANAG 4170

APPLICATION

IM pressed composition for boosters and main charges

IM equivalent to comp A3

TECHNICAL CHARACTERISTICS

1,84 Density	8350 m/s Detonation velocity
5 - 7 mm Critical diameter	> 25 kbars Shock sensitivity

CAST PBX COMPOSITIONS FOR INSENSITIVE MUNITIONS

EURENCO offers one of the world's widest range of Cast PBX solutions. This extensive know-how is the outcome of continuous research effort and experience acquired over 40 years to render munitions insensitive to accidental or intentional threats (fuel fire, bullet impact, metallic fragment, drop, shock, etc.).

Thanks to these assets, EURENCO has become one of the key players in the field of Cast PBX technology for Insensitive Munitions, and highly contributes to fulfil the new Armed Forces' needs to:

> Reduce the vulnerability of combat platforms, warehouses and storage plants,

> Ensure total personnel safety,

> Increase performance of weapon systems,

> Lower operating and life cycle costs.

Furthermore, EURENCO is equipped with a complete range of cost-effective high-tech manufacturing processes:

> Unique and revolutionary "bi-component" process for continuous production of shell ammunition,

> Batch process for serial production of warheads, bombs and penetrators, torpedoes and underwater mines.

Qualified according to STANAG 4170

REFERENCE	MAIN CONSTITUENTS	DENSITY	DETONATION VELOCITY (M/S)	MAIN APPLICATIONS
RDX BASED FORMULATIONS				
B 2211	I-RDX®/AP/Al, IB	1.81	5500	Underwater mines and torpedoes / Enhanced blast warheads
B 2238	RDX, IB	1.57	8040	Boosters / Missile warheads / Shells
B 2258	I-RDX®/AP/Al, IB	1.67	7100	Missile warheads
B 2263 (HBU 88)	I-RDX®, IB	1.63	8150	Missile warheads / Shells
B 2265	I-RDX®, IB	1.65	8290	Missile warheads / Shells
B2269	RDX,Add, IB	1.50	7800	Plastic explosive
B 2276	RDX/IB	1.66	8300	Booster explosive
B 2508	RDX/Add/FB	1.78	7750	Reactive Armor
PBXN-109	I-RDX®/Al, IB	1.65	7525	General purposes bombs and penetrators
HMX BASED FORMULATIONS				
B 2188	HMX/PETN, IB	1.62	7900	Booster explosive / Safety device
B 2250	HMX/AP/Al, IB	1.80	6400	Enhanced blast / General purposes bombs and penetrators
B 2273	HMX, IB	1.72	8490	Missile warheads
ORA 86	HMX, IB	1.70	8350	Missile warheads / Shaped charges
PBXN-110	HMX, IB	1.68	8300	Missile warheads / Shaped charges
NTO BASED FORMULATIONS				
B 2214	HMX/NTO, IB	1.63	7450	General purposes bombs and penetrators
B 2267	I-RDX®/NTO, IB	1.65	7570	Shells
B 2268	I-RDX®/NTO/Al, IB	1.76	7200	General purposes bombs and penetrators

DEMOLITION EXPLOSIVES

A worldwide reference for demolition explosives, EURENCO provides a complete range of plastic explosives for all types of demolition, cutting and breaching operations, all compliant with the new international requirements on the marking of plastic explosives (Montreal Convention), and addressing mainly Armed Forces, Special Forces and Army Combat Engineers.

C 4

Malleable and safe to handle

SPECIFICATIONS

MIL-C-45010A
Compliant with Montreal Convention

APPLICATION

Demilitarization, demolition and breaching operations

TECHNICAL CHARACTERISTICS

1,65
Density

8 100 m/s
Detonation velocity

from 0.5 kg up to 2 kg
Supplied in bulk or packages

RDX-based formulation

PE10 X-DOUGH

Easy to ignite and shape even at low temperature (“polar dough”)

SPECIFICATIONS

Compliant with Montreal Convention

APPLICATION

Demilitarization, demolition and breaching operations

TECHNICAL CHARACTERISTICS

1,5
Density

7 600 - 7 900 m/s
Detonation velocity

cap #6 or cord 5 gr/m²
Ignitability

5 MJ/kg
Explosive heat

PETN-based formulation

HEXOMAX

Outstanding malleability at all temperatures
No exsudation, no hardening

SPECIFICATIONS

Compliant with Montreal Convention

APPLICATION

Demilitarization, demolition and breaching operations

TECHNICAL CHARACTERISTICS

1,5
Density

7 850 m/s
Detonation velocity

≤ 8
Plasticity
(GEMO FE-371-A-1 test)

- 40 °C to + 63 °C
Temperature of use

RDX-based formulation

HEXOSHEET

Easy to handle and cut manually

SPECIFICATIONS

Compliant with Montreal Convention

APPLICATION

Demolition, breaching and cutting operations

TECHNICAL CHARACTERISTICS

1,58
Density

8 000 m/s
Detonation velocity

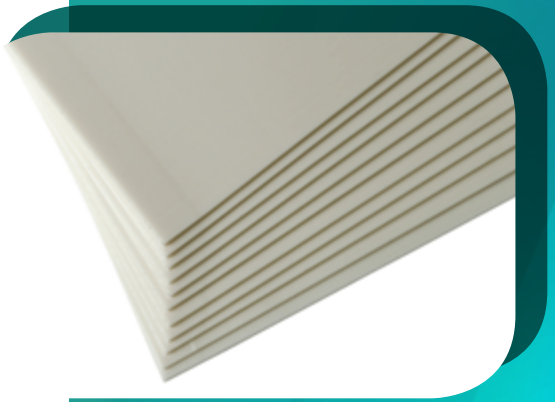
-40 °C to + 63 °C
Temperature of use

≥ 3 mm
Thickness

RDX-based formulation

FORMEX

Flexible sheet



SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Demolition, breaching and cutting operations

TECHNICAL CHARACTERISTICS

from 1,2 to 1,4
Density

≥ 6 200 m/s
Detonation velocity

from 1 mm to 10 mm
10 different thicknesses

PETN-based formulation

EXPLOSIVES

MINING

EURENCO's explosives also find applications in the Mining & Quarrying industry, as it provides both purified HMX for shock tubes and mini boosters for ignition charges.

They are used to ignite slurries and emulsion to full detonation, by giving the energy impulse necessary to initiate larger charges.

As an explosive manufacturer, EURENCO also provides RDX and PETN as well as newly developed PE-coated explosives family, for all types of initiation devices and detonating cords.

X-DOUGH

Malleable, easy to ignite and cost-efficient
PETN-based plastic explosive

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking
Compliant with Montreal Convention

APPLICATION

Softer than C4, easier to shape even at low temperature ("polar dough")

Adhesion to vertical surfaces

Civil and law enforcement applications for ignition (booster), mine destruction, demilitarization and demolition work

TECHNICAL CHARACTERISTICS

1,5 Density	**7 600 - 7 900 m/s** Detonation velocity
cap #6 or cord 5 gr/m² Ignitability	
5 MJ/kg Explosive heat	**> 726 mJ** Static spark sensibility
25 J Impact sensitivity	**180 °C** Deflagration onset

X-PIPE

Mini-booster for detonators

SPECIFICATIONS

UN approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking
Compliant with Montreal Convention

APPLICATION

Filled with 12 grams of X-DOUGH

Diameter: 11 mm ; Length: 130 mm

Gives the energy impulse necessary to initiate larger charges

Ignites slurries and emulsions to full detonation

TECHNICAL CHARACTERISTICS

1,45 Density	**7 600 - 7 900 m/s** Detonation velocity
cap #6 Ignitability	**5 MJ/kg** Explosive heat
> 726 mJ Static spark sensibility	**25 J** Impact sensitivity
180 °C Deflagration onset	

HMX

Purified fine crystallized HMX for shock tubes

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

High quality shock tubes for mining and quarrying applications

Ensures continuous transmission of shock waves and allows non-interrupted conductibility to ignition of charges

TECHNICAL CHARACTERISTICS

1,90
Density

9 100 m/s
Detonation velocity

277 °C
Melting point

-2 820 ± 2.8 kJ/mol
Heat of combustion

700 l/kg
Volume of detonating gases

PETN

Pure PETN crystals for high performance

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Ignitors and detonating cords

TECHNICAL CHARACTERISTICS

1,76 Density	**7 600 - 7 900 m/s** Detonation velocity
5 MJ/kg Explosive heat	**> 726 mJ** Static spark sensibility
25 J Impact sensitivity	**180 °C** Deflagration onset

Wide range of particle sizes distribution

RDX WAX

Highly purified RDX coated with wax

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Ignitors and detonating cords

Optimized for large scale automatic dosing and pressing of charges

TECHNICAL CHARACTERISTICS

1,82
Density

8 750 m/s
Detonation velocity

204 °C
Melting point

-2 092 ± 2.1 kJ/mol
Heat of combustion

900 l/kg
Volume of detonating gases

PETN PE-COATED

PETN coated with polyethylene for low sensitivity and high flowability

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Electrical and non-electrical detonators

Booster charges

Approximately 100% lower impact sensitivity compared with waxed product

Latest technology patented by EURENCO

TECHNICAL CHARACTERISTICS

1,76
Density

8 400 m/s
Detonation velocity

140 °C
Melting point

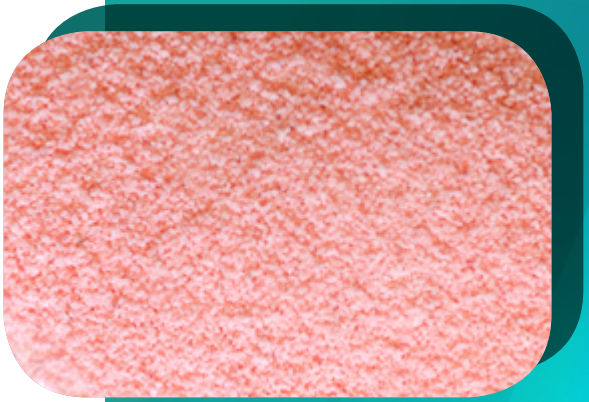
823 l/kg
Volume of detonating gases

-2 572,4 ± 0.8 kJ/mol
Heat of combustion

Cost advantage **can be transported dry**

RDX PE-COATED

RDX coated with polyethylene for increased density and performance



SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking
Compliant with Montreal Convention

APPLICATION

Electrical and non-electrical detonators

Booster charges

Improves electrostatic, loading and pressing properties of the crystals

Approximately 100% lower impact sensitivity compared with waxed product

Latest technology patented by EURENCO

TECHNICAL CHARACTERISTICS

1,82
Density

8 750 m/s
Detonation velocity

204 °C
Melting point

-2 092 ± 2.1 kJ/mol
Heat of combustion

900 l/kg
Volume of detonating gases

HNS

Small crystals, good flowability

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Detonators

TECHNICAL CHARACTERISTICS

1,74
Density

7 000 - 7 100 m/s
Detonation velocity

316 - 318 °C
Melting point

-6 434,2 ± 5.0 kJ/mol
Heat of combustion

700 l/kg
Volume of detonating gases

EXPLOSIVES

OIL & GAS

Using its thorough experience in high explosives for the military market, EURENCO produces high quality and high thermal stability explosives suited for the Oil & Gas Industry, which are extensively used in shaped charges for perforating guns in well completion.

Heat resistance is an important characteristic of the explosives used for perforating deep oil wells, since the temperature in a drilled hole increases with the depth. The same requirements exist in the gas industry.

For many years, EURENCO has worked in close partnership with shaped charge manufacturers. Today, EURENCO continues to provide high explosives for such perforating charges.

RDX COMPOSITION

Best solution for both performance and cost

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Ignition and main explosive for shaped charges for perforating guns in standard well completion

Customized flowability while minimizing dusting properties

TECHNICAL CHARACTERISTICS

1,82
Density

8 750 m/s
Detonation velocity

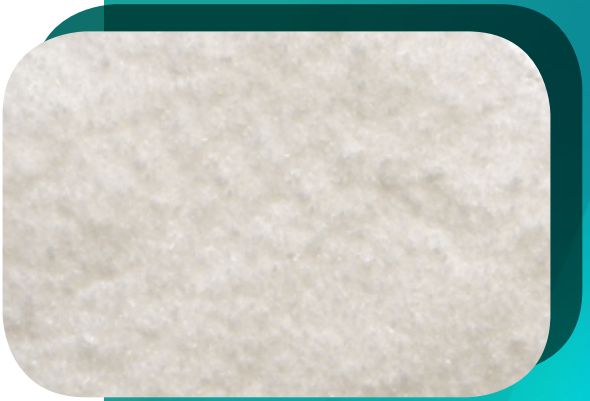
204°C
Melting point

-2 092.0 ± 2.1 kJ/mol
Heat of combustion

900 l/kg
Volume of detonating gases

HMX COMPOSITION

Highly purified HMX for high thermal stability and low shock sensitivity



SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Ignition and main explosive for shaped charges for perforating guns in deep well completion

Designed to meet the highest requirements of the Oil & Gas Industry

TECHNICAL CHARACTERISTICS

1,90
Density

9 100 m/s
Detonation velocity

287°C
Melting point

-2 820 ± 2.8 kJ/mol
Heat of combustion

927 l/kg
Volume of detonating gases

HNS COMPOSITION

Very high thermal stability and good initiation reliability

SPECIFICATIONS

UN and DOT approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Ignition and main explosive for shaped charges for perforating guns in very deep well completion Can withstand temperatures around 250 - 300 °C for periods of time

TECHNICAL CHARACTERISTICS

1,74
Density

7 000 to 7 100 m/s
Detonation velocity

316 – 318 °C
Melting point

-6 434.2 ± 5.0 kJ/mol
Heat of combustion

700 l/kg
Volume of detonating gases

RDX PE-COATED

RDX coated with polyethylene for increased density and performance

SPECIFICATIONS

UN approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

Ignition and main explosive for shaped charges for perforating guns in standard well completion

Improves electrostatic, loading and pressing properties of the crystals

Approximately 100% lower impact sensitivity compared with waxed product

Latest technology patented by EURENCO

TECHNICAL CHARACTERISTICS

1,82
Density

8 750 m/s
Detonation velocity

204 °C
Melting point

-2 092 ± 2.1 kJ/mol
Heat of combustion

900 l/kg
Volume of detonating gases

HMX PE-COATED

Highly purified HMX coated with polyethylene for high thermal stability and significantly reduced shock sensitivity

SPECIFICATIONS

UN approved
Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU
CE-marking

APPLICATION

High performance leader on the market

Ignition and main explosive for shaped charges for perforating guns in deep well completion

Improves electrostatic, loading and pressing properties of the crystals

Approximately 100% lower impact sensitivity compared with waxed product

Latest technology patented by EURENCO

TECHNICAL CHARACTERISTICS

1,90
Density

9 100 m/s
Detonation velocity

287 °C
Melting point

-2 820 ± 2.8 kJ/mol
Heat of combustion

700 l/kg
Volume of detonating gases

EXPLOSIVES

SPACE

EURENCO manufactures high purity ADN, used as an oxidizer in liquid mono-propellant for rocket engines in space applications that fulfills space propulsion requirements. Compared with hydrazine, it is less toxic and brings higher performance, hence reducing fueling cost and tank volumes, and enabling extended missions.

First tested by ECAPS (Swedish Space Corporate Group) in the PRISMA satellite in 2010.

LMP-103S

Replacement of hydrazine as monopropellant

SPECIFICATIONS

Demonstrated on the Prisma satellite in 2010
Patented by ECAPS together with HPGP thrusters
UN and DOT Class 1.4S

APPLICATION

Environmental friendly liquid monopropellant fuel for space applications in High Performance Green Propulsion (HPGP)

TECHNICAL CHARACTERISTICS

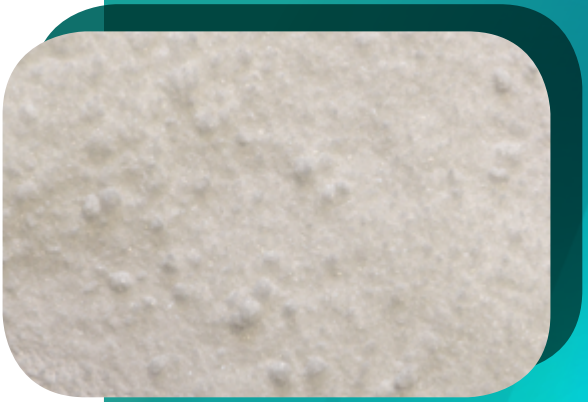
65%
ADN (ammonium dinitramide)

35%
water solution made up of methanol and ammonia

6%
higher specific impulse and
30%
higher impulse density than hydrazine monopropellant

ADN

New energetic oxidizer in solid and liquid propellants



SPECIFICATIONS

UN approved
Identification and traceability according to EU Directive 2008/43/ EC and 2012/4/EU
CE-marking
Compliant with Montreal Convention

APPLICATION

High detonation velocity and increased performance due to higher bubble energy

Possible replacement for ammonium perchlorate (AP)

Can be supplied as crystals or "prills" (spherical particles)

TECHNICAL CHARACTERISTICS

1,81
Density

≈ 7 000 m/s
Detonation velocity

92 °C
Melting point

980 kJ/mol
Heat of combustion

160 °C
Auto-ignition


PROPELLANTS

Drawing on a long skilled experience in propellants, EURENCO manufactures a wide range of single and multi base propellants for both civil and military applications:

- **Single and multi base propellants** for small to large caliber military ammunition, modular charges, mortar increments, recoilless antitank weapons, reloading powders and hunting & sporting cartridges;
- **Low vulnerability (LOVA) propellants** for insensitive propelling charges;
- **Spherical powders** for military small arms ammunition, hunting & sporting cartridges and industrial tools.

EURENCO also produces military grades of nitrocellulose used in the manufacturing process of single and multi base propellants, as well as combustible cases.

PRODUCTION PLANTS

Clermont (Belgium)
Karlskoga (Sweden)

COMMERCIAL OFFICE

Sorgues (France)
Washington DC (USA)

PROPELLANTS

SMALL CALIBER

EURENCO manufactures both single base propellants and spherical powders to cover the entire range of small caliber ammunition:

- Single base propellants for .22 inch to 12.7 mm calibers;
- Spherical powders for 4.6 mm to 20 mm small arms.

EURENCO also developed green formulations in regards with Environmental and Reach regulations.

RIFLE POWDER

High performance and high energy extruded and spherical propellants

SPECIFICATIONS

STANAG 4170
UN and DOT approved
CE-marking
Identification and Traceability according to European Directive 2008/43/EC and 2012/4/EU

APPLICATION

Customized to maximize the performance of the customers' chosen components

All civil and military rifle calibers, from 0.22 up to 20 mm

TECHNICAL CHARACTERISTICS

1-perforated propellant grains

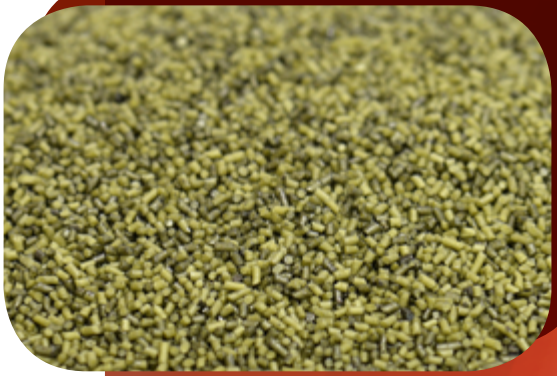
Propellant compositions with up to 15% of nitroglycerine

Spherical powders of different densities and cylindrical grains, all with various burning moderator, flash reducer and decoppering agents

Green propellants for green applications

PISTOL POWDER

Wide range of spherical and porous fast burning propellants



SPECIFICATIONS

UN and DOT approved
CE-marking
Identification and Traceability according to European Directive 2008/43/EC and 2012/4/EU

APPLICATION

For all types and calibers of pistol ammunition

Capability to design tailored products

TECHNICAL CHARACTERISTICS

Stick or 1-perforated grains

Single base or double base propellant compositions

Spherical powders of various densities

SHOTSHELL POWDER

Huge selection of different types of porous propellants and spherical powders

SPECIFICATIONS

UN and DOT approved
CE-marking
Identification and Traceability according to European Directive 2008/43/EC and 2012/4/EU

APPLICATION

For shot shell ammunition of all calibers

Performance according to customer request

TECHNICAL CHARACTERISTICS

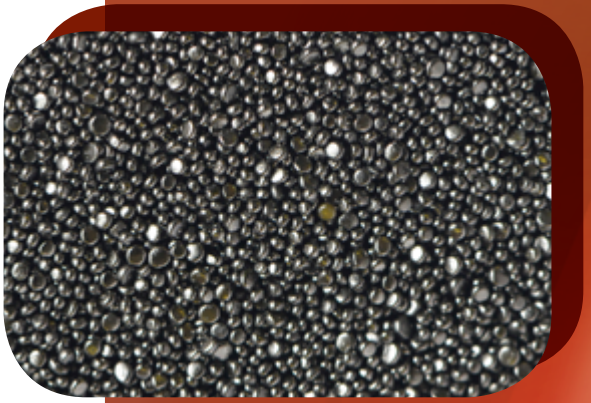
Stick, flake or T-shaped grains

Single base or double base propellant compositions

Low density spherical graphitized propellant

RELOADING POWDERS

High energy propellants with superior velocity and accuracy



SPECIFICATIONS

UN and DOT approved
CE-marking
Identification and Traceability according to European Directive 2008/43/EC and 2012/4/EU

APPLICATION

Extruded propellants for all types of reloading powders

Spherical powders to be found in Ramshot range

TECHNICAL CHARACTERISTICS

Spherical and 1-perforated grains

Single base or double base propellant compositions

Extreme lot to lot consistency

Minimal barrel wear and excellent flow-ability for easy reloading

PROPELLANTS

MEDIUM CALIBER

EURENCO provides single and multi base propellants for medium caliber ammunition ranging from 30 mm to 57 mm, as well as their igniters, including LOVA propellants.

MEDIUM CALIBER PROPELLANTS

Single and multi base propellants for medium caliber ammunition ranging from 30 mm to 57 mm, and their igniters

APPLICATION	TECHNICAL CHARACTERISTICS
30 mm	- Single or multi perforated propellant grains - Single base or double base propellant compositions
40 mm	- 1-perforated propellant grains - Single base or double base propellant compositions
40 mm LOVA	- 19-perforated LOVA propellant grains - Based on RDX and CAB compositions
57 mm	- 1-perforated propellant grains - Single base or double base propellant compositions
57 mm LOVA	- 19-perforated LOVA propellant grains - Based on RDX and CAB compositions

SPECIFICATIONS

UN No. classified

Identification and Traceability according to European Directive 2008/43/EC and 2012/4/EU

PROPELLANTS

LARGE CALIBER

With regards to large caliber, EURENCO provides:

- Single and multi base propellants for naval, tank and field artillery ammunition (76 mm, 120mm, 155mm), mortar increments (60 mm, 81 mm and 120 mm), and recoilless antitank weapons;
- Spherical powders for mortar increments (60 mm and 81 mm).

EURENCO is also able to supply double base or multi base propellant paste according to customer request.

ANTI-TANK PROPELLANT

Various recoilless antitank systems

APPLICATION

For all types of recoilless antitank systems

TECHNICAL CHARACTERISTICS

Flake or strip

Double base propellant compositions

Dimensions according to customer request

SPECIFICATIONS

UN and DOT approved

Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU

CE-marking

MORTAR PROPELLANT

60 mm, 81 mm and 120 mm

APPLICATION

For 60 mm and 81 mm mortar ammunition

For 120 mm mortar ammunition

TECHNICAL CHARACTERISTICS

Flake
Double base propellant compositions
Spherical powders used in primary and secondary charges

1-perforated grains
Single and double base propellant compositions
Dimensions according to customer request

SPECIFICATIONS

UN and DOT approved

Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU

CE-marking

ARTILLERY PROPELLANT

105 mm and 155 mm

APPLICATION

For 105 mm artillery guns

For 155 mm artillery guns

TECHNICAL CHARACTERISTICS

Single or multiperforated grains
Single, double or multi base propellant compositions
Dimensions according to customer request

Single or multiperforated grains or sticks
Single, double or multi base propellant compositions
Dimensions according to customer request

SPECIFICATIONS

UN and DOT approved

Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU

CE-marking

TANK PROPELLANT

90 mm, 105 mm and 120 mm

APPLICATION

For 90 mm, 105 mm and 120 mm tank ammunition

TECHNICAL CHARACTERISTICS

Single or multi perforated grains or sticks
Single, double or multi base propellant compositions
Dimensions according to customer request

SPECIFICATIONS

UN approved

Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU

CE-marking

ROCKET PROPELLANT

Rockets and missiles

APPLICATION

For different types of rockets and missiles

TECHNICAL CHARACTERISTICS

Rods or tubes
Double base or multi base propellant compositions
Dimensions according to customer request

SPECIFICATIONS

UN approved

Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU

CE-marking

PROPELLANTS

AUTOMOTIVE SAFETY

EURENCO provides single base and LOVA propellants to industrials specialized in automotive safety.

Propellants are integrated into airbags and belt-restrainer systems, as gas generators, in order to rapidly inflate the bag where airbags are concerned, or retract the belt in the case of seat-belt pretensioners.

The use of one kind of propellant over the other depends on the customer's choice.

AUTOMOTIVE SAFETY PROPELLANTS

For airbags and safety belt restraint systems

APPLICATION

AIP (auto-ignition pill) for automotive safety systems

LOVA propellant for airbags

Propellant for safety belt restraint system

TECHNICAL CHARACTERISTICS

GUDN-based composition with very exact auto ignition temperature

Insensitive propellant with 7 or 19 hole perforated grains
Propellant composition based on RDX and CAB

Single base propellant with 1 or 7 hole perforated grains

SPECIFICATIONS

UN No. classified

Identification and traceability according to EU Directive 2008/43/EC and 2012/4/EU

COMBUSTIBLE ITEMS

III. COMBUSTIBLE ITEMS

EURENCO manufactures and provides a complete range of combustible items for various applications:

- **Modular Artillery Charge System (MACS)** for artillery ammunition based on own Eurenco design;
- **Combustible Cartridge Cases (CCC's)** for tank and artillery munitions;
- **Nitrofilm** for mortar horseshoe containers and automotive safety;
- **Base Bleed grains** for extended range artillery ammunition.

EURENCO is also equipped with up-to-date production capacities, among which a new automated workshop for the manufacturing and filling of artillery modular charges.

PRODUCTION PLANTS

Bergerac (France)

COMMERCIAL OFFICE

Sorgues (France)
Washington DC (USA)

COMBUSTIBLE ITEMS

DEFENSE & SECURITY

EURENCO develops a large range of combustible items specifically for Defense & Security applications.

EURENCO developed, industrialized and qualified modular charges for 155 mm artillery guns. EURENCO is equipped with a fully automated and continuous workshop dedicated to the manufacturing of artillery modular charges.

EURENCO also provides combustible cases for 120 mm tank ammunition, as well as Nitrofilm for mortar horseshoe containers and base bleed grains for extended range ammunition.

MACS: BOTTOM CHARGES

Linkable Bottom Charge Module (BCM-E):
for zones 1 and 2

SPECIFICATIONS

Munitions 155 mm Artillery
NATO 39 to 52 Cal.

APPLICATION

Provide a complete zoning solution for 155 mm artillery applications:

- Extended range
- Improved logistics
- Higher rates of fire

TECHNICAL CHARACTERISTICS

Single base propellant for BCM

Low vulnerability: MURAT* label without packaging

Fully combustible design

Easy and quick handling

Different assembling modes: linkable or unlinkable in line with needs

MACS: TOP CHARGES

Linkable Top Charge Module (TCM-E):
for zones 3 to 6

SPECIFICATIONS

Munitions 155 mm Artillery
NATO 39 to 52 Cal.

APPLICATION

Provide a complete zoning solution for 155 mm artillery applications:

- Extended range
- Improved logistics
- Higher rates of fire

Uniflex Modular Charge Systems

TECHNICAL CHARACTERISTICS

Multi base propellant for TCM

Low vulnerability: MURAT* label without packaging

Fully combustible design

Easy and quick handling

Different assembling modes: linkable or unlinkable in line with needs

COMBUSTIBLE CARTRIDGE CASES

Compatible with automatic loading

SPECIFICATIONS

Munitions 105 mm and 120 mm Tank
Additional combustible components are also available to complete the Cartridge Case assembly, such as conic interface parts

APPLICATION

Provide a number of advantages for 120 mm tank applications:

- Protection of the propellant charge
- Reduction in barrel wear
- Additional energy to the charge
- Increased firing rate

TECHNICAL CHARACTERISTICS

Increased muzzle velocity: + 5%

Vulnerability levels to Bullet Impact with single base propellant: Type III to Type V

Vulnerability levels to Fire with single base propellant: Type III to Type V

Self ignition temperature: 180 °C to 240 °C

NITROFILM

Innovative film made up of nitrocellulose

SPECIFICATIONS

Munitions 51 mm, 60 mm, 81 mm, 120 mm Mortar

APPLICATION

Can be used as horseshoe containers for mortar ammunition or as pyrotechnical devices for specific applications. Provides many advantages compared with conventional Celluloid:

- Enhanced flexibility, transparency, thermoplasticity, combustibility and inflammability
- Excellent mechanical properties and chemical stability
- Solvent residue < 2%
- Resistant to water and severe weather conditions

TECHNICAL CHARACTERISTICS

Transparent or colored

Can be reinforced with nylon (Cellunyl®)

Available in rolls or sheets of different sizes and thickness (0,10 mm to 0,30 mm)

Specific shapes on request (containers, disks, increments, pyrotechnical igniters)

BASE BLEED

For extended range artillery ammunition

SPECIFICATIONS

STANAG 4170 for composition

APPLICATION

Enhances projectile range up to 30% without reduction in accuracy

Adaptable to all types of shells and calibers

TECHNICAL CHARACTERISTICS

Excellent mechanical properties at all temperatures

Low sensitivity to relative humidity

Burning rate easily tunable

Complex shape achievable through thermoplastic technology

COMBUSTIBLE ITEMS

CIVIL APPLICATIONS

EURENCO's Nitrofilm can be substituted to Celluloid for a variety of applications, including in the civil sector.

Today, it is essentially found in automotive safety, as thermal fuse or container, but it could also be used tomorrow to meet different needs in other industrial activities.

NITROFILM

Celluloid product substitution for any pyrotechnical application

SPECIFICATIONS

According to EURENCO spec.

APPLICATION

Thermal fuse or container for automotive safety

Continuous transformation in serial conditions possible

Safe, stable and easy to use

TECHNICAL CHARACTERISTICS

0,1 mm to 0,3 mm
Thickness

560 mm max
Width

400 linear meters max
Length

Transparent of colored

Available in sheets or rolls of different sizes

THE EUROPEAN LEADER
IN ENERGETIC MATERIALS

EURENCO

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