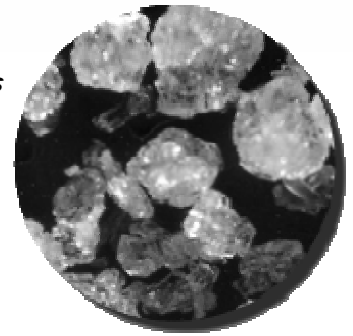


PENTRITE (PETN)

Leading worldwide specialist in the field of high explosives, EURENCO offers its customers a complete range of high explosives and compositions like PETN, owing to high-tech manufacturing capabilities.

PRODUCT

- Chemical names: PETN, pentaerythritol tetranitrate, pentaerythrite tetranitrate, penthrit
- CAS number: 78-11-5
- Chemical formula: $C_5H_8N_4O_{12}$
- EURENCO produces three families of PETN:
 - Pure PETN
 - Wax-coated PETN
 - PETN-based Plastic compositions



CHARACTERISTICS

Characteristics of pure PETN:

- Melting point: ≥ 140.4 °C
- Bulk density: 800 – 900 kg/m³
- Crystal density: 1.76 g/cm³
- Acidity / Alkalinity: ≤ 2.0 meq/kg
- Bergman value: ≤ 0.50 cm³/NO/g
- Sandy particles:
 - > 0.40 mm: none
 - > 0.25 mm: < 3 in number
- Insolubility in acetone: $\leq 0.2\%$
- Ash content: $\leq 0.15\%$
- Flow test: < 35 seconds
- Heat of combustion: $2\,572.4 \pm 0.8$ kJ/mol solid phase
- Volume of detonation gases: 823 l/kg
- Detonation velocity, confined: 8 400 m/s (1,7 g/cm³)
- Deflagration point: 202 °C
- Impact sensitivity: 3 J
- Friction sensitivity: 60 N
- Critical diameter of steel sleeve test: 6 mm

USES

PETN, more sensitive to shock and friction than other explosives, is basically used in the manufacturing of detonating cords and flexible linear cutting charges. PETN finds other applications in the mining industry, for demolition purposes, destruction of mines, demilitarization or as main fill in hand grenades. EURENCO's PETN-based products are CE-marked and tagged according to the Montreal Convention.

EURENCO offers different qualities of PETN:

Pure PETN

EURENCO produces pure PETN according to STANAG 4023 for military applications.

For commercial applications, a wide range of particle sizes, crystals or granulates, are offered. For detonating cords, EURENCO manufactures PETN, with particle sizes depending on customer specifications, in either granulated or single crystalline form characterized by good flow properties and a minimum of dust. A special quality is coated with a water-repellent agent to achieve a more water-resistant cord (or Special fine grades are used for charges in commercial detonators.)

Wax-coated PETN

PETN phlegmatized with wax is used for pressing of initiation and booster charges in commercial and military applications.

Plastic compositions

Mouldable paste of PETN and oil is produced for demolition, destruction of mines, demilitarization or as main fill in hand grenades.

Another application is the mining industry: plastic explosives are produced as cartridges formed as rolls and used to boost slurry explosives in mining and construction works.

PETN-based plastic explosives offers further advantages in comparison with C-4 plastic explosives:

- Easier to ignite directly with cap and detonating cord,
- Easier to form: the paste is soft and easy to shape,
- Cheaper than C4 plastic explosives.

EURENCO

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