



## High Melting Explosive (HMX)

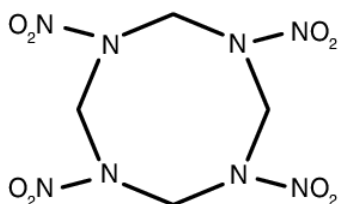
### Single Molecule Explosive

#### Description

HMX explosive material comes in a crystalline powder form of a white opaque color without visible impurities or signs of moisture.

#### Application

Pure HMX is used for production of detonating cords and shock tubes which are thermally stable in temperatures up to 300 °C. HMX is used in mixtures with other explosives and plasticizers or phlegmatizers for production of various explosive compositions (FO-4.5, FP=3.5, OWC, Octol, LX-14, etc.) used in warhead main charges, ammunition, boosters, pyrotechnic devices and oil well explosive charges. Mixed with polymer binders, HMX is used to produce insensitive munition explosives.



## Specifications

**Chemical Formula:** C<sub>4</sub>H<sub>8</sub>N<sub>8</sub>O<sub>8</sub>  
**Specification:** MIL-DTL-45444C Grade A & B  
**CAS:** 2691-41-0  
**Synonyms:** Octogen, HMX, Cyclotetramethylene-tetranitramine

**Appearance:** white solid powder  
**Odor/Taste:** odorless, tasteless  
**Granulation:** Class 1 to 6  
**Molecular Weight:** 296.155 g/mol  
**Water Solubility:** insoluble  
**Melting Point:** 277°C  
**Acetone Insolubility:** ≤ 0.05% (m/m)  
**Content of Ash:** ≤ 0.03% (m/m)  
**Acidity CH<sub>3</sub>COOH:** ≤ 0.02% (m/m)  
**β HMX Content:** 98% (m/m)  
**RDX Content:** 2% (m/m)

**Density:** 1.908 g/cm<sup>3</sup> at 20°C  
**Detonation Velocity:** 9100 m/s at 1.62 g/cm<sup>3</sup>  
**Detonation Pressure:** 390 kbar  
**Oxygen Balance:** -21.6% (m/m)  
**Explosion Heat:** 6.192 MJ/kg  
**Impact Sensitivity:** 7.4 N/m  
**Friction Sensitivity:** 120 N

**Toxicology Data LD<sub>50</sub>:**  
**Oral, Mouse:** 1670 mg/kg  
**Oral, Rat:** 6250 mg/kg

**Hazard Class:** 1.1 D  
**UN Number:** 0226  
**Shipping Name:** HMX, wetted  
**Packing:** 25 ± 0.2 kg per cardboard box  
 380 x 375 x 335 mm