

Explosives Supplied by GEODynamics

GEODynamics manufactures and supplies an extensive line of high quality, high performance explosive products for use in oil and gas well completions. These products include:

- Shaped charges
- Primer cords (Primacord™)
- Detonators
- Cutters and severing tools
- Setting tools.

When loading perforating guns, the explosive materials used in primer cord and shaped charges should be matched. For example, when using HMX shaped charges, HMX primer cord should be used.

Common Explosive Materials Used in Charges and Primer Cords

RDX (Cyclotrimethylene Trinitramine) – Economical material with good performance.

Usually pink in color. Maximum application temperature is 325°F for one hour or less (see chart). Density 1.82 g/cc. Melting point 399°F. Detonation velocity is approx. 28,709 ft/sec.

HMX (Cyclotetramethylene Trinitramine) – Used when an explosive with a higher temperature rating and higher performance than RDX is required. Material is usually white in color. Maximum application temperature is 400°F for one hour or less (see chart), although application above the crystalline transition temperature of 300°F is strongly discouraged. Density is 1.9 g/cc. Melting point is 536°F. Detonation velocity is approx. 29,857 ft/sec.

HNS (Hexanitrosilbene) – Used for applications in which the material will be subjected to high temperatures. Material is substantially more expensive than RDX or HMX. Performance is less than that of RDX or HMX and somewhat less than that of PYX. Material is usually pale yellow in color.

Maximum application temperature is 520°F for one hour or less (see chart). Density is 1.75 g/cc. Melting point is 600°F. Detonation velocity is approx. 22,967 ft/sec.

PYX (Bis Dinotropyridine) – Used for very high temperature applications. Material is expensive. Performance is less than that of RDX or HMX but somewhat better than that of HNS. Material is usually deep yellow in color. Maximum application temperature is 600°F for one hour or less (see chart). Density is 1.75 g/cc. Melting point is 860°F. Detonation velocity is approx. 23,623 ft/sec.

Temperature vs. Exposure Time for Common Explosive Materials

The following chart illustrates the maximum temperature and exposure time above which explosive material will exhibit significant degradation and performance will suffer. Effects should be considered irreversible and exposure time is therefore cumulative in case multiple exposure periods occur.



EXECUTIVE/SALES

GEODynamics, Inc.
415 Woodline Drive
The Woodlands, Texas 77386
Tel +1 281.367.0413
Fax +1 281.298.3940
sales@perf.com
www.perf.com

ENGR./ADMIN./MFG.

GEODynamics, Inc.
Brazos Park
10500 West Interstate 20
Millsap, Texas 76066
Tel +1 817.341.5300
Fax +1 775.618.6254