

# HMX

During WWII a system of manufacturing RDX was developed using a continuous filter. It was noticed that after long usage the filters would grow crystals of an unusual shape. These were investigated and found to have almost the same basic structure and properties of RDX but, not quite. They were slightly denser and had a higher molecular weight. When sufficient quantities could be gathered and studied it was found to have a higher V of D than RDX, a higher melting point and was less sensitive. It was quite rare though as the early batch process produced only .1% of HMX. The later continuous systems developed in the USA yielded up to 5% HMX. Suitable modifications were made to the system to increase the yield to greater percentages.

The name stems from the letters standing for High Melt formula X. Its name is actually

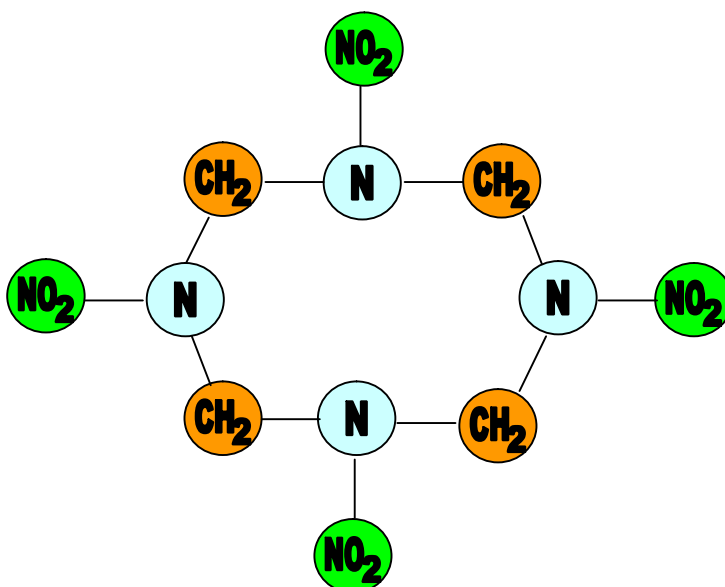
CYCLOTETRAMETHYLENETETRANITRAMINE. It is also known as

HOMOCYCLONITE.

HMX is a very powerful explosive and one that, because of its density provides a very compact store of explosive energy. It is more expensive to produce than RDX

The physical properties of HMX

FORMULA	MP	IP	Power	F of I	V of D	Density
$C_4H_8N_8O_8$	273C	327	160	50	9124 m/sec	1.84



## MOLECULAR ARRANGEMENT OF HMX