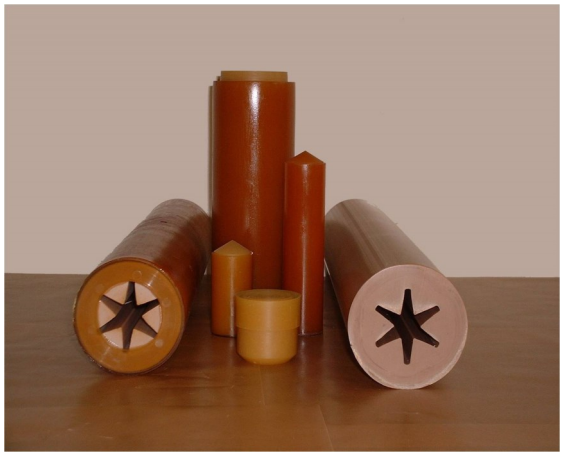
EDB PROPELLANTS—MECHANITE

Chemring Energetics UK

Used in ejection seats



Various Mechanite charges

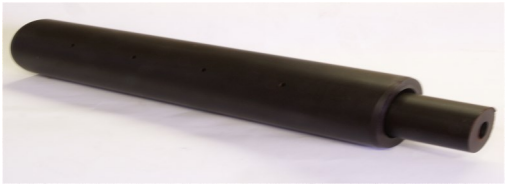
The site at Ardeer has been producing propellant for over 100 years and is world renowned for its expertise in this industry.
Mechanite is the brand name of Chemring Energetics UK's range of extruded double base propellant compositions. The basic purpose of the Mechanite charge is the controlled evolution of gas at a desired pressure to operate an associated mechanical device. Various compositions are commercially available giving an all round understanding of calorimetric values and burning rates.

Description
Our range of propellants are broadly used in commercial fire suppression, gas generators, missile power systems, fuel igniters, gyroscopic actuator devices, rocket motors, ejection release units, buoyancy and inflation devices. The ballistic and chemical framework is altered to match the appropriate performance requirement of the finished device. Inhibition can be added to control the burn rate.

The standard range of Mechanite (billets and charges) are classified as explosive and have a 1.3C hazard class in their approved pack. They can be supplied in a reusable wooden C128 box or a disposable fibreboard box.

Standard Range	
Unplatonised	Mechanite 13
Platonised	Mechanite 19
	Mechanite 21
	Mechanite 22
	Mechanite 24

Shipping Information (in approved packaging)	
Explosive Hazard Class:	1.3C
UN Number	0272
Proper Shipping Name	CHARGES, PROPELLING
Shelf Life (Yrs)	10
C128 box dimensions (cm)	98.5 x 39.5 x 22
Net Weight (kg)	13.8



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For more information visit:
www.chemring.com/chemring-energetics-uk

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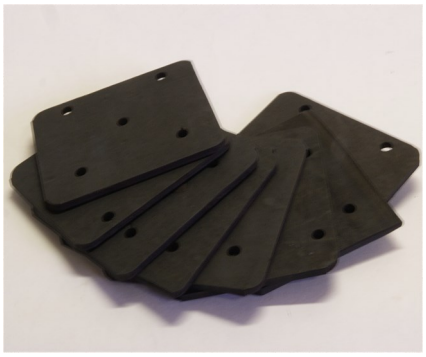

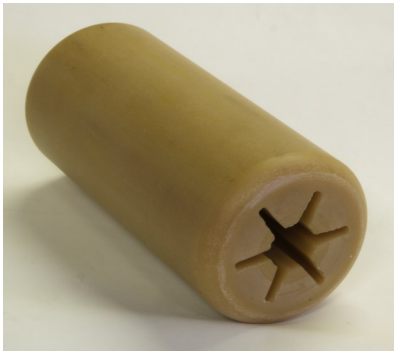

Extruded Double Base Propellant can be supplied in various forms. They can be pressed or machined to the required dimensions.

Burn Rate Tables

These are essential for understanding the Mechanite's combustion behaviour under varying pressures. They show how the burn rate changes with pressure, providing crucial information for accurate combustion control in industrial processes, propulsion systems, and safety evaluations.

Mechanite 19

Pressure (MPa)	Spec Max (mm/s)	Spec Min. (mm/s)
10		23
14	26.8	24.5
17.5	R - 0.3	
21	R - 1.3	

Where R is the actual value at 14 MPa.

Mechanite 21

Pressure (MPa)	Spec Max (mm/s)	Spec Min. (mm/s)
6.9	14.6	13.2
8.62	13.8	12.2
10.34	12.45	
12.07	11.43	

Mechanite 22

Pressure (MPa)	Spec Max (mm/s)	Spec Min. (mm/s)
15		37.5
20	42.5	28.5
30	R - 1.5	

Where R is the actual value at 20 MPa.

Mechanite 24

Pressure (MPa)	Spec Max (mm/s)	Spec Min. (mm/s)
7		18
10	23.5	20.5
13	23.5	
16	23	

The burn rate information from burn graphs is also collected and placed into tables showing further relevant details about Mechanite combustion.

Type	Calorific Value (Cal/g)	Flame Temp (K)	Specific Impulse Ns/Kg @ 6.9MPa
Mechanite 13	280	1064	1512
Mechanite 19	890	2262	2105
Mechanite 21	850	2249	2137
Mechanite 22	1078	2698	2305
Mechanite 24	1035	2600	2290

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