

## Senatel™ Powerfrag™



### Description

Senatel™ Powerfrag™ packaged emulsion explosive is a robust, high strength, detonator sensitive explosive. The explosive is white in colour with a firm putty-like consistency.

### Application

Senatel™ Powerfrag™ is a water resistant packaged explosive designed for priming applications, and as a medium density column explosive, in surface and underground mining and general blasting. The high detonation velocity and the robust nature of Senatel™ Powerfrag™ make it a good primer for the initiation of bulk Explosives.

### Key Benefits

- Senatel™ Powerfrag™ delivers excellent fragmentation with improved digability.
- Post-blast fumes are reduced with Senatel™ Powerfrag™, improving turnaround time in underground mines.
- Senatel™ Powerfrag™ reduces the potential for sulphide dust explosions.
- Senatel™ Powerfrag™ is highly water resistant, which minimises leaching and reduces environmental impact.
- Occupational Health & Safety issues around the handling and storage of nitroglycerin are eliminated.

### Recommendations for Use

#### Blasthole Depth

Senatel™ Powerfrag™ is suitable for use in holes of any practical depth providing contained water does not exceed 25 m depth.

#### Priming and Initiation

An Exel™ or i-kon™ detonator or detonator with minimum 0.6 g PETN or a Cordtex™ detonating cord with minimum content of 12 g PETN/m can reliably initiate Senatel™ Powerfrag™.

#### Application Temperature

For reliable initiation of Senatel™ Powerfrag™ temperature of the product should be minimum -30 °C and maximum +50 °C. If temperature of product and surroundings is lower than -15 °C, the product may well be heated within the borehole.

### Technical Properties

Product		Senatel™ Powerfrag™
Density (g/cm <sup>3</sup> ) <sup>(1)</sup>		1.20
Hole Type		Wet and dry
Typical Velocity of Detonation (m/s) <sup>(2)</sup>		3500 - 5300
Relative Effective Energy (REE) <sup>(3)</sup>	Relative Weight Strength	118
	Relative Bulk Strength	177
Heart of explosion (MJ/KG)		3,5
Gas volume (l/kg)		930
CO <sub>2</sub> (g/kg) <sup>(4)</sup>		184

and give reliable initiation. Please contact your DEXPLOC representative if application conditions are outside the specified temperature range.

### Charging

In small diameter blastholes the maximum energy per metre of blasthole can be achieved by careful tamping the explosive with a wooden tamping rod appropriate to the hole diameter. No metal instrument should be used to tamp explosives. The primer cartridge containing a detonator must not be tamped.

### Sleep Time within Blastholes

In dry blastholes, given the explosives packaging is undamaged; Senatel™ Powerfrag™ may be charged and fired several months later. If the explosives packaging is damaged, the sleep-time in a blasthole is influenced by the extent of damage to the packaging and by the nature of any water present. Even with full length slitting of cartridges, the explosive will give good performance after two weeks immersion.

### Packaging

Senatel™ Powerfrag™ is packaged in white plastic film, colour highlighted in blue. Standard cartridge sizes are as follows:

Diameter (mm)	Nominal Length (mm)	Nominal Mass (g)	Nominal count per case	Box content (kg)
33	530	544	46	25
38	525	714	35	25
42	535	890	28	25
53	525	1390	18	25
62	530	1920	13	25
70	550	2500	10	25
90	530	4000	6	24

Other dimensions are also available according to the customer request.

## **Storage and Handling**

### **Product Classification**

Authorised Name: Senatel™ Powerfrag™  
Proper Shipping Name: Explosive, Blasting, Type E  
UN No.: 0241  
Classification: 1.1D  
EC Type Certificate: 0589.EXP.1672/08

All regulations pertaining to the handling and use of such explosives apply.

### **Storage**

Store Senatel™ Powerfrag™ in a suitably licensed magazine for Class 1.1D explosives. The cases should be stacked in the manner designated on the cases.

Senatel™ Powerfrag™ has a storage life of up to 24 months in an approved magazine.

Senatel™ Powerfrag™ is best stored at temperatures between -30 °C and +30 °C. Storage at extreme low temperatures may lead to permanent damage to the detonation properties. Particularly the initiation properties may suffer.

### **Transport**

Senatel™ Powerfrag™ should be transported between -30 °C and 30 °C.

### **Disposal**

Disposal of explosives materials can be hazardous. Methods for safe disposal of explosives may vary depending on the user's situation. Please contact a DEXPLOC representative for information on safe practices.

### **Safety**

The post detonation fume characteristics of Senatel™ Powerfrag™ make the product suitable for both underground and surface blasting applications. Users should ensure that adequate ventilation is provided prior to re-entry into the blast area.

Senatel™ Powerfrag™ can be initiated by extremes of shock, friction or mechanical impact. As with all explosives, Senatel™ Powerfrag™ should be handled and stored with care and must be kept clear of flame and excessive heat.

Not suitable for mines with danger of coal dust or fire damp explosions.

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### **Notes:**

1. Typical (nominal) Density Only.
2. VOD will depend on application including explosive density, blasthole diameter and degree of confinement.
3. REE is the Effective Energy relative to ANFO at a density of 0.8 g/cm<sup>3</sup>. ANFO has an effective energy of 2.30 MJ/kg. Energies quoted are based on ideal detonation calculations with a 100 Mpa cut off pressure. Non-ideal detonation energies are also available on request. These take account of blasthole diameter, rock type and explosive reaction behaviour.
4. Carbon Dioxide is the main greenhouse gas produced. The output is calculated assuming ideal detonation.