

Senatel™ Powersplit™



Description

Senatel™ Powersplit™ detonator sensitive emulsion explosive is internally traced with 10g/m detonating cord that ensures fast and complete detonation. The emulsion is white in colour with a putty-like consistency. It is packaged in continuous plastic film and double clipped at 400 mm intervals.

Application

Senatel™ Powersplit™ is designed for surface mining operations where a continuous length of decoupled explosive charge is required. Senatel™ Powersplit™ suits perimeter blasting applications such as smooth wall blasting, trimming and pre-splitting.

Key Benefits

- The small diameter, high velocity of detonation, and low decoupled energy of Senatel™ Powersplit™ minimises blast damage to the walls leaving behind a smooth profile with minimal overbreak.
- Senatel™ Powersplit™ is water resistant and can be used in wet and dry blastholes.
- The centre traced detonating cord in Senatel™ Powersplit™ ensures reliable detonation of the decoupled charge.
- Senatel™ Powersplit™ is fast to load into blastholes due to the internally traced high strength detonating cord.

Recommendations For Use

Blasthole Depth

Senatel™ Powersplit™ is suitable for use in holes of any practical depth.

Technical Properties

Nominal Density: 1.18g/cc	
Relative Effective Energy¹	
Relative Weight Strength	100%
Relative Bulk Strength (to ANFO @ 0.8 g/cc)	147%
Minimum Velocity of Detonation²	
6.5 km/s	
CO₂³	
149 kg/t	

Packaging

Senatel™ Powersplit™ is packaged in continuous film and double clipped every 400mm. Senatel™ Powersplit™ packaging cases and film are colour highlighted in purple. Standard cartridge sizes are as follows:

Diameter (mm)	Length (m)
26	40
32	30

Priming and Initiation

Senatel™ Powersplit™ may be top or bottom initiated by an electric No. 8* or Exel detonator. It may also be initiated by a surface detonating cord line of 5g/m or greater.

Senatel™ Powersplit™ must not be used at hole temperatures greater than 70°C, or in reactive ground.

Orica offer a range of solutions for hot and reactive ground blasting - consult an Orica sales or technical representative for further information.

Cutting to Length

If length adjustment is required for Senatel™ Powersplit™, it should only be cut using a single bladed cutter or a sharp knife on a non-ferrous block.

Charging

Initial recommendations are to use 26mm Senatel™ Powersplit™ in 35 mm – 75 mm diameter blastholes and 32mm Senatel™ Powersplit™ in 76 mm-100 mm diameter blastholes. When blastholes are greater than 100mm in diameter two or more lengths of Powersplit may be taped together.



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NOTE: These are only initial recommendations. Successful perimeter blasting results are brought about by selecting the correct combination of blasthole diameter, spacing and in-hole explosive energy to match the rock type being blasted.

If two short lengths of *Senatel™ Powersplit™* are required to make up a longer single charge, a safe and reliable joint can be obtained by using a length of detonating cord, 5g/m or greater, and connecting the detonating cord with two half hitches followed by a securing reef knot to each end of the *Senatel™ Powersplit™*.

Care should be taken when charging to ensure that *Senatel™ Powersplit™* charges reach to the bottom of each blasthole and do not become twisted and “hung up” in the hole. When connecting *Senatel™ Powersplit™* to a surface trunk line extra detonating cord is required. The extra cord, of 5g/m or greater, must be connected to the *Senatel™ Powersplit™* cord with a reef knot. In addition two half hitches must be made around the *Senatel™ Powersplit™* before the cord is secured at the collar of the hole.

Connection to the trunk line must be made by either a double wrap clove hitch or double wrap half hitch. Ideally *Senatel™ Powersplit™* should be supported in the hole by a supporting rope.

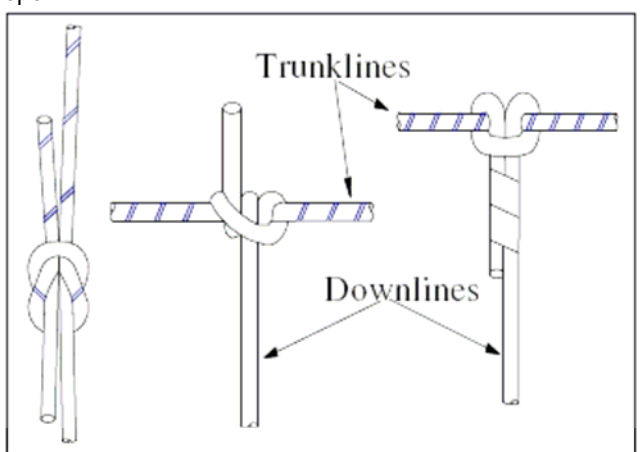


Figure 1. Approved knots, from left to right: Reef knot, Double wrap clove hitch, Double half hitch.

Sleep-Time Within Blastholes

In dry blastholes, given that the explosives packaging is undamaged, *Senatel™ Powersplit™* may be charged and fired several months later (provided the product remains within its recommended shelf life).

In wet blastholes, sleeping of the explosive is not recommended due to seepage of water into any exposed ends of the detonating cord. If in doubt when using *Senatel™ Powersplit™*, contact your local Orica sales office.

Re-entry period after firing

When using packaged explosive and detonating cord systems in pre-split applications, consideration must be given to increasing the routine re-entry period after firing. In pre-split applications rare incidents of post-blast events have been observed. In most instances these events have been in the form of flaring or rumbling of the muckpile.

Post blast events typically occur seconds after the blast, but events have been noted after several minutes. One event occurred nearly 30 minutes after the blast.

If holes are stemmed, additional care must be taken in setting re-entry times. The use of stemming has been seen to increase the period between the shot and any post blast events. Where holes are stemmed it is also recommended that no potentially combustible materials are used, and re-entry periods must account for any post detonation fumes being trapped in the muckpile. Please consult your local Orica technical representative for advice.

Storage and Handling

Product Classification

Authorised Name:	<i>Senatel™ Powersplit™</i>
Shipping Name:	Explosive, Blasting, Type E
UN No:	0241
Class Code	1.1D

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

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Storage

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

Senatel™ Powersplit™ has a storage life of up to 18 months in an approved magazine, however exposure to hot or cold extremes may cause the product to deteriorate prematurely.

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 local Orica representative for information on safe practices.

Safety

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

Senatel™ Powersplit™ can be initiated by extremes of shock, friction or mechanical impact. As with all explosives, *Senatel™ Powersplit™* should be handled and stored with care. *Senatel™ Powersplit™* does not burn easily, but it must be kept clear of flame and excessive heat.

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Disclaimer

Explosives based on Ammonium Nitrate such as *Senatel™ Powersplit™* may react with pyritic materials in the ground and create potentially hazardous situations. Orica accepts no responsibility for any loss or liability arising from use of the product in ground containing pyritic or other reactive material. All information contained in this data sheet is accurate and up-to-date as at the issue date specified below. Since Orica cannot anticipate or control the conditions under which this information and its products may be used, each user should review the information in the specific context of the intended application. To the maximum extent permitted by law, Orica will not be responsible for damages of any nature resulting from the use of or reliance upon the information in this data

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Notes

1. REE is the Effective Energy relative to ANFO at a density of 0.8g/cc. ANFO has an effective energy of 2.30 MJ/kg. Energies quoted are based on ideal detonation calculations with a 100MPa cut-off pressure. Non-ideal detonation energies are also available on request. These take account of blasthole diameter, rock type and explosive reaction behaviour.
2. VOD will depend on application including explosive density, blasthole diameter, temperature and degree of confinement. The minimum VOD quoted is based on unconfined test firing data and is influenced by the presence of detonating cord and emulsion in the product.
3. Carbon dioxide is the main greenhouse gas produced. The output is calculated assuming ideal detonation.