Technical Data Sheet

The Power of Partnership

Senatel™ Magnafrac™

Description

Senatel™ Magnafrac™ packaged emulsion explosive is a robust, detonator sensitive explosive. The explosive is orange in color with a firm putty-like consistency. This product is also available in High Wax (HW) formulations.

Application

Senatel™ Magnafrac™ is a water resistant packaged explosive designed for priming applications, and as a medium density column explosive, in mining, quarry and construction, and general blasting work. The high detonation velocity and the robust nature of *Senatel™ Magnafrac™* make it an ideal primer for the initiation of ANFO columns.

Senatel™ Magnafrac™ PMP film cartridges readily split during tamping to maximize coupling and bulk strength within a blasthole.

Key Benefits

- *Senatel™ Magnafrac™* is a cost effective emulsion formulation suitable for a range of blasting applications.
- *Senatel™ Magnafrac™* reduces post-blast fumes and improves turnaround time.
- *Senatel™ Magnafrac™* can be loaded into 115 mm (4½ in.) diameter upholes when used with cartridge loading equipment.
- The tight diameter control specifications and wax formulation of *Senatel™ Magnafrac™* maximizes cartridge loader performance.
- *Senatel™ Magnafrac™* is highly water resistant that minimizes leaching and reduces environmental impact.
- OH&S issues around the handling and storage of nitroglycerin are eliminated.
- Provides excellent fragmentation with minimum throw.
- Packaged in PMP, easy to tamp plastic film or high strength, tear resistant Valeron film cartridges ideal for ragged, medium size boreholes.
- The packaging and emulsion color of *Senatel™ Magnafrac™* provides high visibility in a range of environments.

Technical Properties

Senatel™ Magnafrac™ 32 x 400 mm (1 ¼ x 16 in.)		
Cartridge Density		1.11 g/cc
Velocity of Detonation[1]		5,000 m/s[3] 16,400 ft/s
Water Resistance		Excellent
Fume Class		1
Relative Effective Energy (REE) [2]	Relative Weight Strength (RWS)	91
	Relative Bulk Strength (RBS)	120

Packaging

Senatel™ Magnafrac™ is packaged in white plastic film to clearly differentiate it from booster sensitive packaged explosives. Cartridges are packed into 25 kg (55 lb) fiberboard cartons. Standard cartridge sizes are as follows:

Sizes (mm)	**Sizes (in.)**	**Nominal count per case**	**Film Type**
25 x 300	1 x 12	161(±6)	PMP
28 x 300	1 ⅛ x 12	120(±4)	PMP
28 x 400	1 ⅛ x 16	94(±4)	PMP
32 x 300	1 ¼ x 12	104(±4)	PMP
32 x 400	1 ¼ x 16	80(±4)	PMP
40 x 400	1 ½ x 16	51(±4)	PMP
45 x 200	1 ¾ x 8	73(±3)	PMP / Valeron
50 x 200	2 x 8	57(±2)	Valeron
50 x 400	2 x 16	26	Valeron
65 x 200	2 ½ x 8	34	Valeron
75 x 400	3 x 16	12	Valeron

Senatel™ Magnafrac™

Recommendations for Use

Blasthole Depth

Senatel™ Magnafrac™ is suitable for use in holes of any practical depth providing contained water does not exceed 20 m (65.6 ft.) depth.

Priming and Initiation

An Orica high strength electric, electronic, or non-electronic detonator can reliably initiate *Senatel™ Magnafrac™* at temperatures higher than -15°C (5°F). At temperatures below -15°C (5°F), an appropriately sized *Pentex™* Booster is recommended. Use of detonating cord with Senatel™ Magnafrac™ is not recommended. Detonating cord may adversely affect the performance of *Senatel™ Magnafrac™* and could result in misfires. Consult an Orica representative before attempting to use with detonating cord.

Charging

In small diameter blastholes the maximum energy per meter of blasthole can be achieved by 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

The sleep time in a blasthole is influenced by the extent of damage to the packaging and by the nature of any water present. *Senatel™ Magnafrac™* will give good performance after two weeks immersion.

Storage And Handling

Product Classification

Authorized Name:	*Senatel™ Magnafrac™*
Shipping Name:	Explosive, Blasting, Type E
UN No:	0241 PGII
Class Code:	1.1D
EX Number:	2008020491

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

Storage

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

Senatel™ Magnafrac™ has a storage **shelf life** of up to 12 months from manufacture date in a well ventilated, approved magazine, even in hot and humid extremes.

Senatel™ Magnafrac™ is best stored at temperatures above -15°C (5°F). This is especially important in cold weather “load and shoot” worksites where there is insufficient inhole warm-up time. *Senatel™ Magnafrac ™* should have an internal temperature of 0°C (32°F) or higher, before use with a pneumatic cartridge loading machine.

For recommended good practices in transporting, storing, handling, and using this product, refer to the “Always and Never” booklet packed inside each case.

Transport

Senatel™ Magnafrac™ should be transported between -15°C (5°F) and +30°C (86°F).

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

Senatel™ Magnafrac™

Trademarks

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Notes

1. VOD will depend on application including explosive density, blasthole diameter and degree of confinement. The VOD range is based on minimum unconfined and calculated ideal.
2. The "Relative Effective Energy (REE) of an explosive is the energy calculated to be available to do effective blasting work. All energy values are calculated using the *IDeX™* computer code owned by Orica for the exclusive use of its companies. Energy values are based on standard ANFO with a density of 0.84 g/cc and a cut-off pressure of 100Mpa. Other computer codes may give different values.
3. Unconfined at 5°C (41°F).