TECHNICAL DATA SHEET

Powergel™ 801

India

Description

Powergel™ 801 is a high strength, robust detonator sensitive emulsion explosive. The explosive is grey in color with a firm putty-like consistency. It is packaged in plastic film with wire clips.

Application

Powergel™ 801 is a water-resistant packaged explosive designed to deliver high energy. It can be used in both priming applications and as a high-density column explosive, in surface and underground mining and general blasting.

Powergel™ 801 is a preferred packaged explosive where ground conditions require the application of high energy explosives to achieve adequate fragmentation and movement. The high detonation velocity and the robust nature of Powergel™ 801 make it an ideal primer for the initiation of ANFO columns. Powergel™ 801 cartridges are packaged in film, which readily splits during tamping to maximize coupling and bulk strength within a blast hole.

The high resistance of Powergel™ 801 to dynamic desensitization makes it the preferred explosive for use in tunneling, quarrying, shaft sinking, and other extreme blasting environments.

Key Benefits

- Powergel™ 801 is a maximum energy emulsion formulation with high pre-compression resistance. This gives excellent blast results in the toughest ground even with tight drilling patterns as found in shaft sinking and other extreme blasting environments.
- Specially formulated for underground use, Powergel™ 801 reduces post-blast fumes and improves turnaround time.
- Powergel™ 801 is highly water-resistant, which minimizes leaching and reduces environmental impact.

Technical Properties

Density	**1.15 ± 0.05 g/cc**
Relative Effective Energy[1]	
Relative Weight Strength	122%
Relative Bulk Strength • to ANFO @ 0.8 g/cc • to ANFO @ 0.95 g/cc	175%
Minimum Velocity of Detonation[2]	3.500 km/s

Recommendations for Use

Blast hole Charge Length

Powergel™ 801 is suitable for use in blast holes of any practical depth providing contained water does not exceed 20m depth.

Priming and Initiation

Powergel™ 801 at temperatures higher than 0°C can be reliably initiated by an electric No.8*, Exel™ detonator (min. 8* strength), eDev™II detonator, Unitronic™ 600 detonators, or i-kon™ III system detonator. Cordtex™ 10g/m may also be used to initiate Powergel™ 801 however detonating cords of charge mass lower than 10 g/m are not recommended for initiation of Powergel™ 801.

Charging

In small diameter blast holes, maximum energy per meter of blast hole 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 Blast holes

In dry blast holes, given the packaging of the explosives is undamaged, Powergel™ 801 may be charged and fired several months later (provided the product remains within its recommended shelf life).

If the packaging of the explosives is damaged, the sleep time in the blast hole is influenced by the extent of damage to the packaging and by the nature of any water present.

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Even with full-length slitting of cartridges, the explosive will give good performance after two weeks of immersion depending on the hole conditions.
An Orica Technical Representative should be consulted if special conditions exist

Reactive Ground and Ground Temperature

Reactive Ground – Powergel™ 801 is not suitable for use in the ground containing reactive sulphides.
Elevated Temperature– Powergel™ 801 is suitable for use in ground temperatures from 0°C up to 55ºC.
However, if your application requires you to operate at elevated temperature, above 55ºC please contact your Orica Technical Representative in advance for further information about product compatibility, sleep time and use.

Product Quality

Orica's packaged explosives are manufactured and loaded using an ISO9001 accredited quality process. h explosives have been developed by Orica specifically for the mining industry using ISO9001 accredited research and engineering processes.

Packaging

Both the Powergel™ 801 packaging cases and film are color highlighted in red. It is packaged in white plastic film with colored printing. Each box contains nominally 25kg of the product with standard cartridge sizes and counts as follows:

Diameter (mm)	Nominal Length (mm)	Nominal Mass (g)	Cartridges per Box
25	185	110	227
25	200	125	200
32	235	200	125
32	428	400	63
40	300	390	64
50	445	1000	25
65	415	1560	16
75	430	2080	12

Storage and Handling

Product Classification

Authorized Name : Powergel™ 801
Proper Shipping Name : Explosive, blasting, type E
UN No : 0241
Classification : 1.1D

As per Indian Explosives rules Powergel™ 1 is a class 2 explosive. All regulations pertaining to the handling and use of such explosives apply.

Storage

Store Powergel™ 801 in a suitably licensed magazine for Class 1.1D /Class 2 explosives. The cases should be stacked in the manner designated on the cases. Powergel™ 801 has a storage life of up to 9 months in an approved magazine; however, exposure to hot or cold extremes may cause the product to deteriorate prematurely. Powergel™ 801 is best stored at temperatures above 0°C.

Disposal

Disposal of explosive materials can be hazardous. Methods of safe disposal of explosives may vary depending on the user's situation. Please contact an Orica Technical Services Representative for information on safe practices.

Safety

The post-detonation fume characteristics of Powergel™ 801 make it suitable for both underground and surface blasting applications. Users should ensure that adequate ventilation is provided prior to re-entry into the blast area.
Powergel™ 801 can be initiated by extremes of shock, friction or mechanical impact. As with all explosives, Powergel™ 801 should be handled and stored with care. Powergel™ 801 does not burn easily, but it must be kept clear of flame and excessive heat.
Explosives based on Ammonium Nitrate such as Powergel™ 801 may react with sulphides in the ground and create potentially hazardous situations. Orica accepts no responsibility for any loss or liability arising from the use of the product in the ground containing sulphides or other reactive material.

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Notes:

(1) REE is the Effective Energy relative to ANFO at a density of 0.8 g/cm^3 ANFO has effective energy of 2.30 MJ/kg. Energies quoted are based on ideal detonation calculations with a 100MPa cut-off pressure.

(2) The actual VOD depends on the conditions of use including the diameter of the hole and the degree of confinement.

Disclaimer

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