

Large Diameter Cartridged Explosives

The Explosives Division of GULF OIL Corporation Ltd. manufactures a complete range of Large Diameter Cartridged Explosives for use in opencast mining, quarrying, civil construction, and for large hole stoping in underground metal mines.

Based on their sensitivity and strength, four large diameter cartridged explosive products are available:

- Aquadyne
- Toeblast
- Energel
- Supergel

These explosives have excellent borehole coupling, achieving high loading density and result in maximum energy transfer in the borehole. They also offer high degree of safety from mechanical impact and friction. They have excellent water resistance and upon detonation, generate low levels of noxious fumes.



Product Range

Aquadyne is a medium strength cap-sensitive aluminised gelled slurry explosive for use in large diameter holes as primer / booster. It effectively initiates booster-sensitive explosive. Its excellent slumping characteristics ensures good loading density and borehole coupling. Its density and gel consistency ensures fast sinking in water filled drillholes. **Aquadyne** can be initiated either with a detonator or detonating cord. It is recommended for use in soft to medium hard rocks.

Toeblast is a high strength, cap-sensitive, aluminised gelled slurry explosive for use in large diameter holes as primer / booster. It has a high aluminum content, resulting in increased energy. It effectively initiates booster-sensitive explosives and its excellent slumping characteristics ensure good loading density and borehole coupling. Its density and gel consistency ensures fast sinking in water filled holes. **Toeblast** can be initiated either with a detonator or detonating cord. It is recommended for use in hard to very hard rocks. It effectively removes hard toe.



Energel is a low strength, non-aluminised booster-sensitive gelled slurry explosive. Its excellent slumping characteristics ensures good loading density and borehole coupling. Its gel consistency ensures fast sinking in water filled holes. For initiation, **Energel** has to be primed with either Aquadyne or Toeblast of the same cartridge diameter or Pentolite Booster. A column charge of **Energel** forms an excellent combination with Supergel as bottom charge, particularly for medium hard to hard rock formations.

Supergel is a high strength, aluminised booster-sensitive gelled slurry explosive. Its excellent slumping characteristics ensure good loading density and borehole coupling. Its gel consistency ensures fast sinking in water filled holes. For initiation, **Supergel** has to be primed with either Aquadyne or Toeblast of the same cartridge diameter or Pentolite Booster. A bottom charge of **Supergel** with Toeblast as booster is an excellent combination particularly for hard rock formations. Can also be used in combination with Energel as a column charge. It effectively removes hard toe.



Application

Large diameter cartridged explosives are widely used in opencast mining, quarrying and for use in soft to very hard strata. Due to its sticking properties and ease of cutting, the cap-sensitive primers Aquadyne and Toeblast are commonly used for secondary blasting using plaster shooting method.

Product Combination	Ratio	Application
Aquadyne - Energel	20:80	For soft to medium hard strata
Aquadyne - Supergel - Energel	20:40:40	For medium hard to hard strata
Toeblast - Energel	20:80	For soft to medium hard strata. Toeblast should be placed in hard bands
Toeblast - Supergel - Energel	20:40:40	For hard strata
Toeblast - Supergel	20:80	For hard to very hard strata

These products can also be safely used in 'hot boreholes' by following recommended statutory precautions.





Design by Indezine / info@indezine.com

Specifications

Properties	Aquadyne	Toeblast	Energel	Supergel
Sensitivity	Sensitive to No. 6 Strength Detonator and Detonating Cord.	Sensitive to No. 6 Strength Detonator and Detonating Cord.	Booster - Sensitive	Booster - Sensitive
Density (g/cc)	1.20 ± 0.06	1.20 ± 0.06	1.15 ± 0.05	1.20 ± 0.06
Detonation Velocity (m/sec, unconfined)	4200 ± 400	4200 ± 400	3800 ± 400	4000 ± 400
Water Resistance	Excellent	Excellent	Excellent	Excellent
Application	As booster in medium hard rocks	As booster in hard to very hard rocks	As column charge in medium hard rocks	As base and column charge in hard to very hard rocks

Packaging

Cartridge diameter and weight of Aquadyne, Toeblast, Supergel, and Energel are given below:

Cartridge Diameter	Cartridge Weight	Number of Cartridges per Case of 25 kg
*63 mm	1.57 kg	16
83 mm	2.78 kg	9
125 mm	6.25 kg	4
175/200 mm	12.50 kg	2

* Available on special request

Cartridges are packed in corrugated fiber board cases. Each case contains 25 kg of explosive. Markings on the case indicate manufacturer's name, product name, cartridge diameter, cartridge weight, batch number, case number, date of manufacture, net weight and gross weight.

Statutory Classification and Shipping Information

Petroleum & Explosives Safety Organization (PESO), Government of India	Class 2
IMDG Classification:	
Class	1
Division	1.1
Group	D
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Stowage Category	II Type 'B'

Precautions

- Do NOT subject explosive material to impact, friction or fire.
- Do NOT carry out charging of explosives during an approaching storm or when there is lightning activity in the blast area. Vacate the blast area and resume operations only after the storm has passed.
- Do NOT attempt to fight explosive fires.

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Contact Information

For more information, please contact:



**GULF OIL Corporation Limited
Explosives Division**

Kukatpally, Post Bag No. 1, Sanathnagar IE (PO)
Hyderabad 500018, Andhra Pradesh, India

Phone: +91 (40) 23810670 to 79
Fax: +91 (40) 23700747, 23700772
Email: marketing@idlind.com
Internet: <http://www.gulfoilcorp.com>

Features and specifications mentioned in this brochure are subject to change due to continuous improvements through research and development.

Division of GULF OIL Corporation Limited
Hyderabad 500018