

TITAN[®] XL 1000 / 1000 ΔE

Technical
Information



Gassed TITAN 1000 G



Product Description

TITAN XL 1000 / 1000 ΔE is a gassed, bulk emulsion made from TITAN 1000 G Matrix specifically designed for quarry and open pit mining operations. TITAN XL 1000 / 1000 ΔE is formulated to be sensitized during the blast hole loading process using Dyno Nobel's innovative chemical gassing and emulsion processing technology. The process used to manufacture TITAN XL 1000 / 1000 ΔE enhances water resistance and detonation performance while improving loading characteristics. Chemical gassing allows the average density of TITAN XL 1000 / 1000 ΔE to be varied as required to optimize its explosive performance for best blast results.

Application Recommendations

- The minimum cast booster weight recommended to prime TITAN XL 1000 / 1000 ΔE explosive is a 340 g (12 oz) cast booster.
- TITAN XL 1000 / 1000 ΔE can be used in boreholes up to 36 m (150 ft) deep.
*Consult a Dyno Nobel Representative for deeper hole application.
- **ALWAYS** double prime when bulk explosive columns exceed 6 m (20 ft). One primer should be positioned near the bottom of the hole and the second near the collar.
- **ALWAYS** ensure primers are securely positioned in the explosive column.
- Do not use detonating cord as downlines with TITAN XL 1000 / 1000 ΔE without first consulting your Dyno Nobel representative.

Properties

SDS
#1052

	(min - max)
Density (g/cc) Avg	0.9 - 1.3
The average loading density can be varied from about 0.9 to 1.3 g/cc to best match rock type and application requirements. *Actual number depends on hole depth and diameter.	
Energy ^a (cal/g)	590 - 680
(cal/cc)	530 - 885
Relative Weight Strength ^{a,b}	0.67 - 0.77
Relative Bulk Strength ^{a,b}	0.74 - 1.23
Velocity ^c (m/sec)	3,800 - 7,000
(ft/sec)	12,500 - 23,000
Detonation Pressure (Kbars)	33 - 160
Gas Volume ^a (moles/kg)	45.0
Water Resistance	Excellent
Minimum Diameter	
(mm)	65
(inches)	2.5
Loading Method	Pumped
Fume Class ^d	IME1

^a All Dyno Nobel Inc. energy and gas volume values are calculated using PRODET™, a computer code developed by Dyno Nobel Inc. for its exclusive use. Other computer codes may give different values.

^b ANFO = 1.00 @ 0.82 g/cc

^c Based on confinement (rock type), down hole only, hole diameter and density.

^d Approved for underground use as IME Fume Class 1 (requires MSHA approval for each site)

Hazardous Shipping Description

TITAN XL 1000 / 1000 ΔE is made from TITAN 1000 G Matrix. Refer to the TITAN 1000 G Technical Information Sheet for Hazardous Shipping Description information.

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Transportation, Storage and Handling

- TITAN 1000 G Matrix can be stored for 3 months at temperatures between -18° C and 32° C (0° F and 90° F). Older product should be used first and all storage tanks should be kept clean of residual product.
- Use only pumps which have been approved by Dyno Nobel for 5.1 emulsion matrix transfer. Pump type, pump speed, worn pump parts, repeated repumping and pumping against high hose pressures can increase TITAN 1000 G Matrix viscosity and decrease shelf life.
- **ALWAYS** monitor emulsion pump performance and check pumps periodically for excessively worn parts. Design storage facilities to minimize repeated pumping.
- Transport, store, handle and use TITAN 1000 G Matrix in compliance with federal, state, provincial and local laws governing bulk oxidizing liquids.

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