

DYNO GOLD[®] LITE

Technical Information



Unsensitized Gassable Bulk Emulsion Matrix



Product Description

DYNO GOLD LITE is an unsensitized repumpable bulk emulsion matrix specifically formulated to be sensitized during loading at the borehole using Dyno Nobel chemical gassing technology. DYNO GOLD LITE, Dyno Nobel's high performance, booster sensitive emulsion explosives or emulsion/ANFO blend explosives containing up to 50% DYNO GOLD LITE, can be used in 65 mm (2-1/2 in) and larger boreholes depending upon the amount of ANFO used in the emulsion/ANFO blend. The amount of chemical gassing and the percentage of emulsion in DYNO GOLD LITE emulsion explosive and emulsion/ ANFO explosive blends can vary (between 1.10 and 1.30 g/cc and 50%-100% emulsion) to deliver explosive performance to best match specific blasting requirements. Refer to the data table at right for the physical properties and loading methods for some typical DYNO GOLD LITE emulsion/ANFO explosive blends.

Application Recommendations

- DYNO GOLD LITE emulsion matrix is not detonable as shipped and must be sensitized with Dyno Nobel chemical gassing technology for use.
- Only ANFO manufactured with emulsion compatible AN prills is recommended for use in DYNO GOLD LITE emulsion/ANFO explosive blends.

Properties

MSDS
#1052

	100	70	60	50
Percent Emulsion				
Density^a (g/cc) Avg	1.20	1.20	1.20	1.25
Energy^b (cal/g)	680	740	760	780
(cal/cc)	815	890	910	975
Relative Weight				
Strength^b	0.77	0.84	0.86	0.89
Relative Bulk				
Strength^{b,c}	1.13	1.23	1.26	1.36
Velocity^d (m/sec)	4,800	4,500	4,300	4,300
(ft/sec)	15,700	14,800	14,100	14,000
Detonation				
Pressure^d (Kbars)	69	61	55	47
Gas Volume^b (moles/kg)	45.4	44.8	44.6	44.4
Water Resistance	Excellent	Excellent	Excellent	Good
Minimum Diameter				
(mm)	65	75	100	150
(inches)	2.5	3	4	6
Loading Method	Pump	Pump	Pump	Auger
Critical Density (g/cc)	1.30	1.30	1.30	1.30

^a Borehole density can be varied from about 1.10 to 1.30 g/cc to match applications.

^b 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.

^c ANFO = 1.00 @ 0.82 g/cc

^d Unconfined @ 100mm (4 in) diameter, average density; 150mm (6 in) for 50/50 blend.

Hazardous Shipping Description

Blasting agent, 1.5D UN0332 II
Explosives Blasting Type E



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Application Recommendations (continued)

- The minimum cast booster weight recommended for use as a primer for DYNO GOLD LITE emulsion explosives or emulsion/ANFO explosive blends is 340 g (12 oz).
- **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 nearer the top of the explosive column.
- **NEVER** use detonating cord in borehole diameters less than 159 mm (6¼ in).
- **NEVER** use DYNO GOLD LITE in boreholes deeper than 30 m (100 ft). Consult your Dyno Nobel representative for an alternative product.
- **ALWAYS** use average borehole loading density for blast design and to estimate explosive requirements, although chemically gassed emulsion explosives provide a unique loading density gradient in the borehole with highest density at the bottom and lowest density at the top. Consult the density/depth curves to determine average borehole density.
- **NEVER** load augered DYNO GOLD LITE emulsion/ANFO blend with 50% ANFO into boreholes where standing water is present! Augered DYNO GOLD LITE emulsion/ANFO explosive blend with 50% ANFO is for use in dry or dewatered boreholes only. To produce consistently good results, wet boreholes must be dewatered. After dewatering, check the borehole to ensure there is no re-entering or residual water. As soon as the borehole is confirmed dry, immediately prime and load. When standing water remains in a borehole, use only pumped DYNO GOLD LITE emulsion ANFO blends with 0 to 40% ANFO.
- Borehole sleep time is two (2) weeks. Where geology is wet and extended sleep times are anticipated, it is best practice to use pumped DYNO GOLD LITE emulsion/ANFO blends with 0 to 40% ANFO. Where product will sleep overnight and less water resistant blends are being considered, consult your Dyno Nobel representative for loading recommendations.
- **ALWAYS** use delivery equipment specifically designed or approved by Dyno Nobel. DYNO GOLD LITE emulsion explosives or DYNO GOLD LITE emulsion/ANFO explosive blends require specialized delivery equipment which must be operated only by personnel who have received Dyno Nobel chemical gassing training.
- DYNO GOLD LITE emulsion explosive or DYNO GOLD LITE emulsion ANFO

- explosive blend delivery equipment should be calibrated periodically to ensure blend quality and explosive performance. Ensure safety systems are operational before each use.
- Routinely monitor the DYNO GOLD C LITE emulsion explosive and DYNO GOLD LITE emulsion/ANFO explosive blend density to ensure that equipment remains in calibration during loading.

Transportation, Storage and Handling

- DYNO GOLD LITE can be stored for 6 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 Dyno Gold 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 DYNO GOLD LITE in compliance with federal, state, provincial and local laws governing bulk oxidizing liquids.

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