

Booster Sensitive Explosive



Product Description

DYNOMIX is a prilled ammonium nitrate/fuel oil explosive mixture suitable for use in dry borehole conditions when primed with either nitroglycerin dynamite or a cast booster. It is available packaged in a variety of sizes and types of bags or delivered in bulk. For bulk delivery, it can be premixed and delivered to overhead storage bins, mixed on-site with stationary equipment and loaded into blast hole delivery trucks or mixed as it is loaded down-the-hole with specialized mobile equipment. DYNOMIX is used for quarry, surface mining, construction and underground blasting operations.

Application Recommendations

DYNOMIX is not recommended for wet borehole conditions. Consult your Dyno Nobel representative regarding applications involving borehole dewatering and plastic borehole liners.

Hazardous Shipping Description

Explosive, Blasting, Type B, 1.5D, UN 0331, II OR
Ammonium Nitrate, Fuel Oil Mixture, 1.5D, NA 0331, II



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

^bANFO = 1.00 @ 0.82 g/cc

^cConfined @ 150 mm (6 in) diameter.

Properties

MSDS
#1009

Density (g/cc) Avg	0.82
Energy ^a cal/g (cal/cc)	880 (720)
Relative Weight Strength ^b	1.00
Relative Bulk Strength ^b	1.00
Velocity ^c m/sec (ft/sec)	3,900 (12,800)
Detonation Pressure ^c (Kbars)	31
Gas Volume ^a (moles/kg)	43
Water Resistance	None
Fume Class	IME1

TYPICAL LOADING DENSITIES AND RATES OF DETONATION

Borehole Diameter		Typical Weight Per Foot Of Borehole		Typical Detonation Velocity (confined)	
mm	in	kg	lbs	mps	fps
32	1¼	0.22	0.5	2,900	9,500
50	2	0.55	1.2	3,300	10,700
75	3	1.1	2.5	3,300	10,900
100	4	2.0	4.5	3,600	11,800
125	5	3.2	7.0	3,800	12,400
150	6	4.7	10.4	3,900	12,800
187	7¾	7.1	15.7	4,000	13,100
230	9	10.6	23.4	4,100	13,400
270	10⅝	15.2	33.4	4,100	13,600
311	12¼	20.2	44.4	4,200	13,700
350	13¾	25.4	55.9	4,200	13,700
380	15	30.2	66.5	4,200	13,800
445	17½	41.1	90.5	4,200	13,800



Application Recommendations (continued)

- The loading density of DYNOMIX is subject to change (i.e., density poured from a bag differs from pneumatically placed or mobile equipment delivered densities). Typical application loading densities are: 0.82 to 0.83 g/cc (poured 2¼ in to 5 in); 0.90 to 0.95 g/cc (pneumatic 1 in to 2 in) and 0.85 to 0.87 g/cc (bulk truck delivered 2½ in to 17½ in).
- DYNOMIX has a shelf life of 3 months from date of manufacture when stored at temperatures between -17° C and 32° C (0° F and 90° F).
- **ALWAYS** use an adequately sized, high-impulse, high detonation velocity, nitroglycerin explosive or cast booster to prime DYNOMIX. Recommendations for priming are on the following chart.
- **W**hen two primers are necessary, place one near the bottom and one near the top of the main charge in the borehole. Additional primers should be used whenever the blaster feels that separations or blockages may have occurred as the borehole is being loaded. It is imperative that all primers in the borehole be either threaded onto a detonating cord downline or upline or be individually primed with a detonator connected to the blast circuit at the surface.

- Use of detonating cord in boreholes with DYNOMIX can cause loss of energy, especially where high coreload detonating cords are used in smaller diameter holes. High coreload detonating cords may initiate DYNOMIX at low order. Where detonating cord is used to initiate Nonel SL detonators, use lowest recommended coreload detonating cord.

Transportation, Storage and Handling

- DYNOMIX contains a high percentage of industrial-grade ammonium nitrate prills which are susceptible to breakage from temperature cycling, humidity and mechanical handling. Temperature cycling and humidity may cause packaged product to harden and material stored in bulk bins to increase in fines, cake and lump. Inventory should **ALWAYS** be rotated by using the oldest product first. Bulk bins should be emptied and cleaned routinely to prevent build up on walls.
- For recommended good practices in transporting, storing, handling and using this product, see the Safety Library Publications of the Institute of Makers of Explosives.
- Explosives must be transported, stored, handled and used in conformity with all applicable federal, state, provincial and local laws and regulations.

Borehole Diameter		Dyno Nobel Cast Booster	Nitroglycerin Dynamite Primers (diameter x length)		Use at least two primers per borehole when DYNOMIX column exceeds the following heights		
mm	in		Product	mm	in	Meters	Feet
50 – 65	2 – 2½	D-15 or Trojan® Spartan® 150	Dynomax® Pro, Unigel® or Unimax®	38 x 200	1½ x 8	3.0	10
65 – 75	2½ – 3	D-25 or Trojan® Spartan® 200	Dynomax Pro, Unigel or Unimax	50 x 200 50 x 400	2 x 8 2 x 16	4.6 4.6	15 15
75 – 100	3 – 4	D-35 or Trojan® Spartan® 350	Dynomax Pro, Unigel or Unimax	65 x 400 70 x 400	2½ x 16 2¾ x 16	6.0	20
100 – 165	4 – 6½	D-45 or Trojan® Spartan® 450	Secondary Primer Only	75 x 200 75 x 400	3 x 8 3 x 16	6.0	20
165 & Up	6½ & Up	D-90 or Trojan® Spartan® 900	Secondary Primer Only	75 x 400	3 x 16	6.0	20

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