TROJAN® GEOPRIME® dBX®

Technical Information

High Performance Pentolite
Premium Seismic Energy Source

Product Description

TROJAN GEOPRIME dBX is a high energy, high performance pentolite seismic explosive researched and engineered to increase elastic waves through improved coupling between the explosive energy and the earth. In a new approach to explosives application in geophysical exploration, TROJAN GEOPRIME dBX offers high detonation velocity and superior low post-detonation gas production. TROJAN GEOPRIME dBX produces improved seismic energy across the usable bandwidth for superior final stack data as well as improved signal-to-noise ratios as well as providing consistent energy release in all extreme seismic environments. The specialized design of the TROJAN GEOPRIME dBX plastic shell allows charge weight to be varied, as needed, by screwing the shells together. Designed by geophysicists and Dyno Nobel explosives engineers, TROJAN GEOPRIME dBX is the next generation of seismic explosives.

Application Recommendations

- **NEVER** use Dyno Nobel seismic explosive products and/or components with explosive products and/or components made by other manufacturers.
- **ALWAYS** use Dyno Nobel's high strength seismic detonator for optimum results.
- Recommended temperature range is -40° C to 65° C (-40° F to 150° F). TROJAN GEOPRIME dBX is unaffected by extremely low temperatures but detonators produce less energy below -40° C (-40° F).
- **ALWAYS** use built-in cap wells for seismic detonators. Two detonators are recommended to minimize environmental issues with abandoned charges.

USE CAUTION WHEN SLEEP TIME IS ANTICIPATED

A loaded hole that is not shot immediately after the detonator tests positive with a ShotPoint Tracker™ or other testing device could fail for reasons beyond the control of the drill crew and product manufacturer. Reasons for failure could include but are not limited to geologic shifting, lightning, vandalism, farmer or animal interference.

Properties

SDS #1145

Energy[a] (cal/g)	1,880
Gas Volume[a] (moles/kg)	20.5
Velocity[c] (m/sec)	7,300
(ft/sec)	23,950
Detonation Pressure[c] (Kbars)	227
Density (g/cc)	1.70
Water Resistance	Excellent (up to 250 psi)

[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.

[c] Unconfined 57 mm diameter x 2 kg charge.

IMPORTANT!

Ignoring these warnings may result in injury or death!

- **ALWAYS** exercise extreme caution when approaching a shothole that has not vented. Venting gases after detonation are common. BLOWOUTS CAN INJURE OR KILL.
- **NEVER** attempt to alter the product by cutting, sawing or disassembly of the package.
- **NEVER** drop load explosive into a borehole.
- **NEVER** attempt to dislodge explosives by pushing with a drill stem.
- **NEVER** unshunt electric detonators prior to use except to test with blasting galvanometer.
- **ALWAYS** shunt electric detonators and/or the blast circuit after testing and keep shunted until connected to blasting machine.
- **NEVER** use detonating cord to prime TROJAN GEOPRIME dBX.
- **ALWAYS** ask if you don't know before proceeding.

Hazardous Shipping Description
Boosters, 1.1D, UN 0042

See Product Disclaimer on page 2

DYNO® Dyno Nobel

Groundbreaking Performance™

TROJAN® GEOPRIME® dBX®

Technical Information

Application Recommendations (continued)

- **ALWAYS** use two Dyno Nobel high strength detonators. A broken wire is the primary cause of abandoned seismic charges so protect your investment, increase performance and minimize liability. Require all personnel who handle or come into contact with explosive materials to be fully trained in the proper storage, handling and use of explosive products.
- TROJAN GEOPRIME dBX maximum water depth is limited by the initiation system used.
- **NEVER** use TROJAN GEOPRIME dBX with detonating cord. Misfires may result.

Transportation, Storage and Handling

- TROJAN GEOPRIME dBX must be transported, stored, handled and used in conformity with all applicable federal, state, provincial and local laws and regulations. Stock should be rotated. Use older stock first. For recommended good practices in transporting, storing, handling and using this product, see the booklet "Prevention of Accidents in the Use of Explosive Materials" packed inside each case and the Safety Library Publications of the Institute of Makers of Explosives. As with all high explosives, cool, dry, well ventilated storage is recommended.
- TROJAN GEOPRIME dBX has a substantially unlimited shelf life when stored between -40°C and 38° C (-40° F and 100° F) provided the product has not been submerged in water. Product older than five years old should be inspected by a qualified Dyno Nobel representative prior to use.

Undetonated Explosives

- Dyno Nobel's policy is to provide the highest quality and most reliable explosives products and initiation systems possible for seismic exploration. To assure our customers of the best commercial explosive products, Dyno Nobel has implemented manufacturing processes and controls. Dyno Nobel recommends the use of two Electric Super Seismic detonators. A broken detonator leg wire is the prime cause of undetonated seismic charges. Protect your investment in seismic exploration by requiring training on the proper use of explosive materials for all who handle, use or have contact with explosive materials.
- The user of this product (or any other explosive product) should not abandon undetonated charges in the ground. Abandoning undetonated charges constitutes misuse of the product for which Dyno Nobel and its subsidiaries are not responsible.

Bioremediation Technology

The Ensign-Bickford Company developed and patented the bioremediation technology which involves casting millions of freeze-dried microorganisms (along with nutrients for those microorganisms) directly into the TROJAN GEOPRIME dBX seismic booster during production. When these naturally occurring organisms are submerged in water, they become activated, as designed, and begin to slowly biotransform the undetonated TROJAN GEOPRIME dBX. When the biotransformation is complete, the compounds are no longer explosive. Complete and continuous submersion in water is required to sustain the bioremediation process. In addition, the process is dependent on various other factors and environmental conditions. For these reasons, Dyno Nobel makes no claim as to the effectiveness of the biotransformation process or the duration of time required to complete.

Packaging

TROJAN GEOPRIME dBX is packaged in highly visible plastic cartridges with positive coupling available where increased charge weights are desired.

Dyno Nobel Part Number*	Nominal Unit Size	Package Style	Case Count Units per Case	Gross Case Weight	Case Dimensions Centimeters	Case Dimensions Inches
DB0165	36 mm (1.43 in) x .165 kg (0.36 lb)	Paper	95	17.0 kg / 37.4 lb	42 x 33 x 14	16.5 x 13.25 x 5.5
DB0250	41 mm (1.6 in) x .25 kg (0.55 lb)	Paper	72	18.6 kg / 41.0 lb	42 x 33 x 14	16.5 x 13.25 x 5.5
DB0500	57 mm (2.3 in) x 0.5 kg (1.1 lb)	Plastic	30	17.0 kg / 37.4 lb	85.75 x 32.4 x 12.7	33.75 x 12.75 x 5
DB1000	57 mm (2.3 in) x 1.0 kg (2.2 lb)	Plastic	20	21.3 kg / 46.9 lb	85.75 x 32.4 x 12.7	33.75 x 12.75 x 5
DB2000	57 mm (2.3 in) x 2.0 kg (4.4 lb)	Plastic	10	20.8 kg / 45.8 lb	71.15 x 32.4 x 12.7	28 x 12.75 x 5
DB2500	57 mm (2.3 in) x 2.5 kg (5.5 lb)	Plastic	10	26.0 kg / 57.0 lb	85.75 x 32.4 x 12.7	33.75 x 12.75 x 5

* For Canadian part numbers, add a "C" at the end (i.e., DB0500C)

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