

# GEOPRIME®

## Technical Information



## Bioremediation Technology in Pentolite



### Product Description

GEOPRIME is a high energy, highly reliable, seismic explosive containing patented bioremediation technology (see back for detailed explanation) and made from the highest quality PETN and other high explosive materials ensuring reliability, consistency and durability. GEOPRIME provides consistent energy release in all extreme seismic environments regardless of hydrostatic pressure or borehole depths.

### Application Recommendations

- **NEVER** use Dyno Nobel seismic explosive products and/or components with explosive products and/or components made by other manufacturers.
- **ALWAYS** use the Dyno Nobel Electric Super Seismic high strength detonator for optimum results.
- Recommended temperature range is -40°C to 65°C (-40°F to 150°F). Geoprime 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 for insurance and reliability where extreme environmental conditions or prolonged exposure periods are encountered.
- Maximum water depth is 92 meters (300 feet; 125 psi) for 6 months.
- **ALWAYS** use 10 gm/m (50 grains/foot) or higher core load detonating cord with a double wrap clove hitch knot when initiating Geoprime with detonating cord not configured for Cut To Fit initiation. Light core load "Cut to Fit" (2.2 gm/m, 10 grains/foot) detonating cord is only recommended with Cut To Fit Geoprime.

### 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

MSDS  
#1145

Energy <sup>a</sup> (cal/g)	1,500
Gas Volume <sup>a</sup> (moles/kg)	27.9
Velocity <sup>c</sup> (m/sec) (ft/sec)	7,500 24,600
Detonation Pressure <sup>c</sup> (Kbars)	230
Density (g/cc)	1.63
Water Resistance	Excellent

<sup>a</sup> 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.

<sup>c</sup> 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 light core load "Cut to Fit" (10.6 grains/foot, 2.2 grams/meter) detonating cord to prime GEOPRIME.
- **ALWAYS** ask if you don't know before proceeding.

### Hazardous Shipping Description

Boosters, 1.1D, UN 0042 EX-2005120120





### Transportation, Storage and Handling

- GEOPRIME 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.
- GEOPRIME has a substantially unlimited shelf life when stored between -40°C and 65° C (-40° F and 150° 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. When difficult drilling conditions are encountered or when rough loading conditions exist, Dyno Nobel recommends the use of two (2) 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 GEOPRIME 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 GEOPRIME. 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 it.

### Packaging

GEOPRIME 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	Case Dimensions Centimeters			Case Dimensions Inches		
GE0500	57 mm (2.25 in) x 0.5 kg (1.1 lb)	Plastic	30	85.75	32.4	12.7	33 ¾	12 ¾	5
GE1000	57 mm (2.25 in) x 1.0 kg (2.2 lb)	Plastic	20	85.75	32.4	12.7	33 ¾	12 ¾	5
GE2000	57 mm (2.25 in) x 2.0 kg (4.4 lb)	Plastic	10	85.75	32.4	12.7	33 ¾	12 ¾	5
GE2500	57 mm (2.25 in) x 2.5 kg (5.5 lb)	Plastic	10	85.75	32.4	12.7	33 ¾	12 ¾	5

\* For Canadian part numbers, add a “C” at the end (i.e., GE0500C)

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