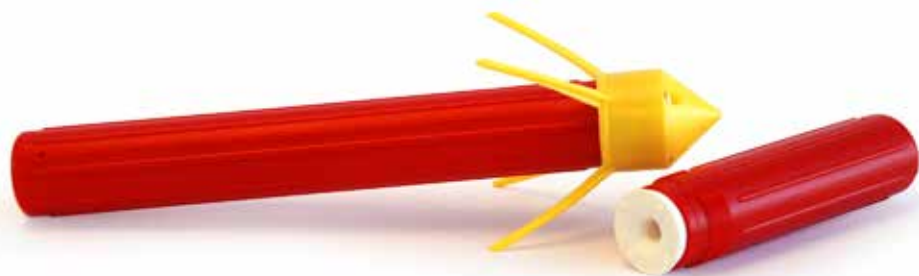


VIBROGEL® MINI-HOLE

Technical
Information



Seismic Gelatin Nitroglycerin Dynamite



Product Description

VIBROGEL MINI-HOLE is a high density, high velocity, high energy gelatin dynamite available in either a plastic or paper tube shell that has been in use in the geophysical industry for decades. VIBROGEL MINI-HOLE produces a sharp pulse of seismic energy and detonates completely at high velocity.

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.

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.
- VIBROGEL MINI-HOLE is not recommended for extended wet hole use / sleep time. Please contact your Dyno Nobel Representative for additional details.

Properties

SDS
#1019

Energy ^a (cal/g)	1,250
Gas Volume ^a (moles/kg)	26
Velocity ^b (m/sec)	6,100
(ft/sec)	20,000
Detonation Pressure ^b (Kbars)	129
Density (g/cc)	1.38
Water Resistance	Limited

^aAll 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.

^b 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.
- **ALWAYS** ask if you don't know before proceeding.

Hazardous Shipping Description

Explosive, Blasting, Type A 1.1D UN 0081 II



VIBROGEL[®] MINI-HOLE

Technical Information



Application Recommendations (continued)

- Recommended temperature range is -40° C to 65° C (-40° F to 150° F). VIBROGEL MINI-HOLE is unaffected by extremely low temperatures but detonators produce less energy below -40° C (-40° F).
- When using paper tube shells or whenever the plastic shells are used as single unit charges and without an anchoring device or protective loading device, it is recommended that the charge be side primed at a point about half the cartridge length. To side prime, use an approved powder punch and punch on a downward angle (not across cartridge). Care should be taken to insert the seismic detonator so that the base of the detonator comes to rest nearest the center of the charge diameter (not against the shell wall) and so that only the detonator leg wires are exposed. Always double half-hitch the leg wires to secure the detonator to the charge.

Transportation, Storage and Handling

- The user of this product (or any other explosive product) should not leave or abandon undetonated charges in the ground. The leaving or abandoning of undetonated charges constitutes misuse of the product for which Dyno Nobel and its distributors are not responsible.
- VIBROGEL MINI-HOLE must be transported, stored, handled and used in conformity with all applicable federal, state, provincial and local laws and regulations.
- For maximum shelf-life, VIBROGEL MINI-HOLE must be stored in cool, dry and well-ventilated magazines. If stored properly, VIBROGEL MINI-HOLE has a shelf life of 12 months from date of manufacture. Dynamite that is stored under warm wet and/or humid conditions can deteriorate quickly, minimizing shelf-life. Dynamite inventory should always be rotated by using the oldest materials 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.

Packaging

Diameter mm (in)	Cartridge Weight g (lb)	Cartridge Type	Cartridges per Case	Case Weight kg (lbs)	Case Dimensions Centimeters	Case Dimensions Inches
36 x 140 (1.4 x 5.6)	1/8 kg (.28 lb)	Plastic	120	21.3 kg (46.8 lbs)	39 x 33 x 23	15¼ x 13⅞ x 8⅞
36 x 262 (1.4 x 10.3)	1/4 kg (.55 lb)	Plastic	60	19.1 kg (42.0 lbs)	39 x 33 x 23	15¼ x 13⅞ x 8⅞

Note: All weights are approximate.

Product Disclaimer Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product. Under no circumstances shall Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

Dyno Nobel Inc.

2795 East Cottonwood Parkway, Suite 500, Salt Lake City, Utah 84121 USA
Phone 800-732-7534 Fax 801-328-6452 Web www.dynonobel.com

DYNO
Dyno Nobel

Groundbreaking Performance