

ANFO (Bagged)

Prilled Ammonium Nitrate

Technical
Information



Description

ANFO is a nominal 94:6 blend of Detaprill® low density ammonium nitrate and diesel fuel oil. It is a dry free running product, usually coloured for identification.

Application

ANFO has a wide variety of applications in dry hole blasting conditions. It is one of the most cost effective blasting agents available for use in large hole diameter mining through to small hole diameter quarrying. Pneumatically loaded, ANFO is also effective in underground development and tunnelling applications.

Features & Benefits

- ANFO is a dry and free flowing product, allowing delivery by loose pour or pneumatic loading.
- The low bulk density of ANFO provides excellent charge distribution in the blasthole.
- ANFO provides excellent heave energy.

Properties

Explosives Class: 1.1D

U.N. No: 0082

Density

Poured (g/cm³) 0.80 - 0.85

Pneumatically Loaded (g/cm³) 0.85 - 0.95

Energy¹ (MJ/kg)

3.7

RWS (%)

100

RBS

Poured² (%) 100

Blow Loaded³ (%) 116

Minimum Hole Diameter

Poured (mm) 75

Blow Loaded (mm) 25

Water Resistance

Nil

¹ All Dyno Nobel energy values are calculated using a proprietary Dyno Nobel thermodynamic code. Other programs may give different values.

² Nominal poured density of ANFO of 0.82 g/cm³.

³ Nominal blow loaded density of ANFO of 0.95 g/cm³.

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Recommendations

Use - ANFO should only be used in dry holes. To realise the maximum energy available and reduce run up distances, it is recommended to prime ANFO with an HDP cast booster for all hole diameters. Depending on the application, ANFO may be primed with a suitable diameter detonator sensitive Powermite® Pro cartridge. For specific priming requirements, please contact your Dyno Nobel representative. The VoD of ANFO is dependent on the hole diameter, with VoD reducing as the hole diameter reduces.

Water Resistance - ANFO has no water resistance.

Shelf Life - ANFO has a maximum shelf life of six (6) months dependent on temperature and humidity conditions. Storage in a high humidity and high temperature environment will accelerate product breakdown and should be avoided. Signs of ANFO degradation are hardening or caking which can lead to difficulty in loading and as a result, may lead to poor blasting performance.

Sleep Time - Under normal conditions in dry and stemmed blast holes, ANFO may be slept for periods up to six (6) months. The sleep time may be limited to the recommended sleep time of the initiating system. The presence of water will dramatically reduce the sleep time.

Ground Temperature – ANFO is suitable for use in ground with a temperature of 0°C to a maximum of 55°C. For application in ground at higher temperatures, please consult your local Dyno Nobel representative and Regulatory Authority.

Packaging

Bagged ANFO is available in packaged form varying from bulk bags (500 kg) through to smaller plastic bags (10, 20 and 25 kg). All bags are delivered on one (1) tonne product only weight pallets i.e. 2 x 500 kg, 100 x 10 kg, 50 x 20kg and 40 x 25 kg plastic bags per pallet.

Safe handling, transportation & storage

First Aid - Detailed first aid information regarding this product is contained on the relevant Dyno Nobel Material Safety Data Sheet.

Safety - All explosives are classified as dangerous goods and can cause personal injury and damage to property if used incorrectly.

Transportation and Storage - All explosives must be handled, transported and stored in accordance with all relevant regulations. Stock should be rotated such that older product is used first.

The information and suggestions contained in this document concern explosive products that should only be dealt with by persons having the appropriate technical skills, training and licence. The results obtained from the use of such products depend to a large degree on the conditions under which the products are stored, transported and used.

While Dyno Nobel makes every effort to ensure the details contained in the document are as accurate as possible, the conditions under which the products are used are not within its control. Each user is responsible for being aware of the details in the document and the product applications in the specific context of the intended use. If technical advice is required in the specific application of the products then you should contact Dyno Nobel for assistance.

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