UBE Premium Underground

Underground Bulk Emulsion explosive

Safety • Quality • Reliability

UBE is one of Solar's Mining Services masterpiece emulsion formulation. It had been specifically designed as an ultimate in Bulk Explosive where it offers an unrivalled explosive performance in order to solve the issue of blasting performance in the underground Mining operations.

Features

- Cap Sensitive up to density of 1.19g/cm^3 in a 28mm hole diameter
- High Energy Content (REE 89 & RBS 146)
- High VOD (above 8500m/s)
- Supersaturated High Ammonium Nitrate content (≈80%). Excellent explosive energy performance – Rapid Propagation, Supersonic Detonation and complete combustion
- 100% Water Resistant. Once Mixed with the gassing solution during charging, the formulation gas-out irrespective of the presence of water in the blast hole
- Uniform Performance irrespective of Dry or Wet Blast Holes
- Complete chemical combustion: very low fume Characteristics

Benefits

- Firing at High and low Density: Adjustable to customer's energy request
- New Generation Product – Improved Blast Performance
- Ease of Use and Improved Safety

GENERAL SPECIFICATIONS OF UBE UNDERGROUND

Application

- Developments End
- Stoping
- Shaft Sinking
- Trenching, Tabular deposit and pre-split

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Product Quality

Solar bulk emulsions are manufactured and loaded using an ISO9001 accredited process

Product Classification Information

Class / Division	5.1
Group / Type	E
UN No. (Emulsion)	3375
UN No. (Gassing Solution)	3099

Appearance

Solar UBE Underground is a honey coloured ammonium nitrate blasting intermediate, chemically sensitised in-situ through a static mixer to create an explosive in the blast-hole.

Do's & Dont's

- Products should be sensitised only on the blast face
- Charging of UBE into the blasting holes should be accomplished only by the recommended Solar Mining Services equipment
- Do not transport Detonators and/or Primers with Base emulsion

Disclaimer

All information contained on this case is accurate and up to date. Solar Mining Services cannot anticipate or control the circumstances under which this review of information in the specific context of the intended application. Solar Mining Services will not be responsible for any damage of any nature resulting from those implied warranties, given other than those implied mandatories by local legislation.

Notes

- Effective Energy (EE) is the useful chemical energy that an explosive can release to break the rock. It is calculated as the total energy released by the explosive gasses as they expand to do useful work from the initial detonation pressure down to a cut-off pressure of 20Mpa or 100Mpa
- Relative Effective Energy (REE) is the effective energy of an explosive compared to the effective energy of an equal mass of ANFO, which is rated as 100 (i.e. 94% AN, 6% Fuel, density of 0.8).
- Relative Bulk Strength (RBS) is the effective energy of an explosive compared to the effective energy of an equal volume of ANFO, which is rated as 100, of relative density 0.8

TECHNICAL PROPERTIES: UBE

PRODUCT NAME	UBE
Based Density (ungassed) g/cm^3	1.37 -1.38
Ammonium Nitrate Content (%)	80
Base Emulsion Stability	Excellent
Oxygen Balance	-1.74
Sensitivity	Cap Sensitive
Minimum Initiator	8D in a 28mm diameter hole
Recommended Maximum Density (g/cm^3) using 8D Detonator	1.19
VOD (m/s)	> 8500
Sensitized Emulsion Densities (g/cm^3) using 8D	1.00 – 1.19
Recommended Diameters (all cap Sensitive up to 1.19g/cm^3)	32mm 36mm 45mm
Bulk Energy (MJ/Kg) at 100 MPa	2.535
Bulk Energy (MJ/Kg) at 20 MPa	2.839
REE @ 100 MPa	98
RBS @ 100 Mpa	146
REE @ 20 Mpa	87
RBS @ 20 Mpa	129
Base Emulsion Stability	Excellent
Loading Method	Pump
Re-Pumpability	6 Stages
Sleep Time after charging	One Week Maximum
Recommendation 1	Charging should be achieved by only Solar Mining Services Pump Equipment
Recommendation 2	Base Emulsion and Gassing Solution must be stored separately
Recommendation 3	Burden distance above 200mm

Note: Energies calculated using The Zhaf-cobra ideal detonation code.

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