

1. Description

An industrial explosive made at the blast site by a MMU. Emulsion matrix and a specified proportion of sensitizer are mixed and safely and efficiently charged into blastholes, where chemical gassing sensitization takes place.

Bulk Emulsion MMU



2. Applications

Widely used in mining, shaft and tunnel development, underwater blasting and other engineering blasting operations where there is no risk of gas or mine dust explosions.

3. Key Benefits

Compared with packaged explosives, direct mechanized loading at the blast site reduces packaging, handling, storage and other intermediate steps, providing significant economic benefits to producers and users.

Aqueous-phase and oil-phase materials, or emulsion matrix, are pumped into the blasthole together with a sensitizer. Chemical gassing sensitization forms the explosive, providing inherent safety during production, shipping and loading.

Process parameters can be adjusted in real time for climate, rock properties and charge configuration, varying VOD and density to match the explosive to the rock.

Excellent water resistance. Bottom-up loading through the charging hose displaces water from the blasthole, overcoming discontinuous, poorly coupled and inefficient charging in wet holes.

Particularly suited to underwater drilling and blasting, and uphole loading in underground fan-drilled blastholes.

4. Technical Properties

Property	Technical Properties	
Density (g/cm ³)	1.15	1.25
VOD (m/s)	3800-4800	4200-5000
Work Capacity (mL)	220-223	220-223
Minimum Blasthole Diameter (mm)	76	76
Maximum Blasthole Depth (m)	50	50
Maximum Charge Length (m)	30	45
Hole Type	Dry / Wet / Dewatered	
Delivery System	Pumping	
Recommended Booster at Minimum Hole Diameter	400 g	
Relative Weight Strength, RWS (%)	100-103	104-106
Relative Bulk Strength, RBS (%)	140-152	158-170
Sleep Time (days)	21	21
CO ₂ Emissions (kg/t)	150	150
Emulsion Matrix Shelf Life	≥7 days, or customized to customer requirements	

5. Recommendations for Use

01	Not detonator-sensitive; requires a booster or similar initiation medium.
02	Charge the precise quantities specified in the blast design.
03	Begin loading with the charging hose at the bottom of the blasthole. Raise the hose as the explosive level rises, ensuring that the booster is embedded at the designed initiation position.
04	Carry out stemming after sensitization and gassing, or leave space for gassing.

6. Storage and Shipping

Storage and Shipping	The finished explosive is not stored in a surface magazine; it is mixed in the blasthole. Only the matrix raw material is transported: ammonium nitrate emulsion, an intermediate for blasting explosives.
UN No.	3375 (matrix raw material)
Classification Code	5.1 (raw material; oxidizing substance)
Raw Material Storage	The finished explosive is not warehoused. Manage the intermediate raw material in a Class 5.1 oxidizer magazine.
Transport Requirements	Transport emulsion matrix in dedicated vehicles meeting the relevant safety and technical standards for civil explosives.
Delivery Requirements	Do not exceed the maximum delivery distance for emulsion matrix. Avoid severe jolting to prevent emulsion breakdown and phase separation.
Use and Inventory	Use emulsion matrix promptly after production. Avoid excessive quantities in storage or storage beyond its shelf life.

7. Precautions

01	Suitable for blast sites with ambient temperatures from -20°C to 45°C.	04	Keep surrounding stones from falling into the blasthole during loading to avoid impairing blast performance.
02	If an abnormal condition occurs during loading, stop the equipment immediately. Resume loading only after the fault has been resolved.	05	Ensure that the charging hose reaches the bottom of the blasthole before starting. Do not raise it too quickly during loading, to maintain charge quality.
03	In case of accidental fire, use water or a water-based extinguisher. Do not cover the fire with soil, sand or stones. If the situation becomes critical, evacuate immediately and clear personnel from the surrounding area.		

8. Safety

01	After blasting, personnel may re-enter the blast area only when adequate ventilation has been ensured.
02	Impact, friction, mechanical shock and heat may initiate explosives. Exercise extreme care during storage, shipping and use.

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Disclaimer

All ammonium nitrate-based explosives may react with sulfur-bearing ground and create potential hazards. Handar accepts no responsibility for such incidents.
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