



Explosive Blends

Technical Data Sheet

Product features



High energy with 76% ammonium nitrate content



Cleaner detonation produces fewer harmful emissions (e.g., soot and oxides of nitrogen), contributing to improved air quality



Low water content for greater blasting efficiency in highly reactive ground conditions



Formulated to reduce the likelihood of NO_x and CO fume generation



Single trace gas sensitisation with a non-dangerous goods gassing solution, achieving a usable density range of 0.9 to 1.25 kg/L

Properties

Property	Heavy ANFO					Gassed Emulsion				
	10/90	20/80	30/70	40/60	50/50	60/40	70/30	80/20	90/10	100
Mullafex 76 Emulsion (%)	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
ANFO (%)	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
Total Energy ¹ (MJ/kg)	3.69	3.57	3.46	3.37	3.27	3.13	3.03	2.93	2.83	2.72
Density (kg/L)	0.89	0.98	1.11	1.25	1.3	1.15	1.15	1.15	1.15	1.15
RBS ²	108	115	126	138	139	118	114	110	106	103
RWS ²	97	94	91	88	86	82	79	77	74	71
Minimum Diameter (mm)	89		102		127	89	76			
Brookfield Viscosity (cP)	30,000 cP to 45,000 cP									
Typical VoD ³ (m/s)	3,400 – 6,000									
Hole Type	Dry			Dry or Dewatered		Wet, Dry or Dewatered				
Delivery System	Auger					Pumped				
Maximum Sleep Time	Non-reactive ground: Up to 30 Days ⁴ Reactive Ground: 7 days nominal ⁵									

NOTES:

1. Total Energy (MJ/kg) calculated using Explo5 Thermochemical Computing Code
2. For calculation of Relative Weight Strength (RWS) and Relative Bulk Strength (RBS); ANFO – density 0.8g/cm³ and an energy of 3.82MJ/kg was used
3. Velocity of Detonation (VOD) range is atypical and is influenced by site specific blast geometry, initiation design and lithology
4. In ideal, dry hole conditions
5. Reactive ground sleep time is subject to conditions of AEISG CoP Elevated Conditions and Reactive Ground



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Application density, blast hole diameter and depth constraints

Explosive Density (kg/L)																
Ave in-hole density	0.90		0.95		1.00		1.05		1.10		1.15		1.20		1.25	
Blast hole depth (m)	Open Cup	Toe	Open Cup	Toe	Open Cup	Toe	Open Cup	Toe	Open Cup	Toe	Open Cup	Toe	Open Cup	Toe	Open Cup	Toe
0	0.90	0.90	0.95	0.95	1.00	1.00	1.05	1.05	1.10	1.10	1.15	1.15	1.20	1.20	1.25	1.25
3	0.86	0.93	0.91	0.98	0.96	1.03	1.02	1.08	1.07	1.12	1.12	1.17	1.18	1.22	1.24	1.26
6	0.83	0.95	0.88	1.00	0.93	1.05	0.99	1.09	1.04	1.14	1.10	1.18	1.16	1.23	1.22	1.27
9	0.80	0.97	0.85	1.02	0.90	1.06	0.96	1.11	1.01	1.15	1.08	1.19	1.14	1.23	1.21	1.27
12			0.82	1.03	0.87	1.07	0.93	1.12	0.99	1.16	1.05	1.20	1.12	1.24	1.19	1.27
15					0.85	1.08	0.90	1.12	0.96	1.16	1.03	1.20	1.10	1.24		
18					0.82	1.09	0.88	1.13	0.94	1.17	1.01	1.21	1.09	1.24		
21					0.80	1.09	0.86	1.13	0.92	1.17	0.99	1.21	1.07	1.24		
24							0.83	1.14	0.90	1.17	0.97	1.21	1.05	1.25		
27							0.81	1.14	0.88	1.18	0.95	1.21	1.04	1.25		
30									0.86	1.18	0.93	1.21	1.02	1.25		
	For use in hole diameters > 76 mm				For use in hole diameters > 115 mm				Not supported							

For use in hole diameters > 76 mm

For use in hole diameters > 115 mm

Not supported

Priming and initiation

Mullafex 76 is formulated to be booster sensitive. For best results, 400gm cast boosters, or greater should be used where possible. 250 gm cast boosters, or greater, can be used in hole diameters ranging from 125 to 200mm and 150 gm cast boosters, or greater, can be used in holes smaller than 125mm in diameter.

Smaller boosters may be used than the above recommended sizes, but the performance of the bulk explosive may be reduced.

Double priming is recommended in deep blast holes, or if disruption of the explosive column is likely to occur during blasting. The use of down hole detonation cord is not recommended.

Gas sensitisation

CSBP recommends that CSBP's Gassing Solution be used to gas Mullafex 76 Explosive Blends. Refer to the CSBP Gassing Solution TDS for appropriate trace chemical addition rates and allow at least 30 to 60 minutes before stemming the blast holes from the time of loading.

Contact a CSBP product support representative regarding the suitability of alternative gassing agents.

Reactive Ground Conditions

Mullafex 76 has been designed to be used in reactive ground conditions with ground temperatures up to 55°C. Contact a CSBP product support representative for advice before using Mullafex 76 in reactive ground conditions

Authorisation and transport

Authorised name of explosive: Mullafex 76		
	Unsensitised	Sensitised
Classification code	5.1 (Oxidising agent)	1.1D (Explosive)
UN proper shipping name	Ammonium Nitrate Emulsion	Explosive, Blasting, Type E
UN number	3375	0241

Disposal

Mullafex 76 explosive blends pose an explosion risk. Disposal can only be conducted by an authorised competent person. Contact a CSBP product support representative for disposal advice.

Safety and first aid

Mullafex 76 explosive blends are classed as an explosive and should only be used by a certified, competent and authorized personnel in approved conditions and applications.

More detailed safety information can be found in the Ammonium Nitrate Emulsion Blend Safety Data Sheet (SDS).