



Explosive Blends

Technical Data Sheet

Product features



High energy content for greater blasting efficiency with 76% ammonium nitrate content



Cleaner detonation produces fewer harmful emissions (e.g., soot and oxides of nitrogen),



Increased downstream value through instantaneous dig rates and ore comminution



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%
Spinifex 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)	3.7	3.58	3.47	3.36	3.26	3.13	3.02	2.91	2.81	2.7
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	109	106	102
RWS ²	97	94	91	88	85	82	79	76	73	71
Minimum Diameter (mm)	89		102		127	89	76			
Brookfield Viscosity (cP)	30,000 cP to 45,000 cP									
Typical VoD ² (m/s)	3,400 - 6,000									
Hole Type	Dry			Dry or Dewatered		Wet, Dry or Dewatered				
Delivery System	Auger					Pumped				
Maximum Sleep Time	Up to 30 days ⁴									

NOTES:

1. Total Energy (MJ/kg) calculated using Thermochemical Computing Code EXPL05.
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



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Application density, blast hole diameter and depth constraints

Ave in-hole density	Explosive Density (kg/L)															
	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

Priming and initiation

Spinifex 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 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 Spinifex 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.

Authorisation and transport

Authorised name of explosive: Spinifex 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

Spinifex 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

Spinifex 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).