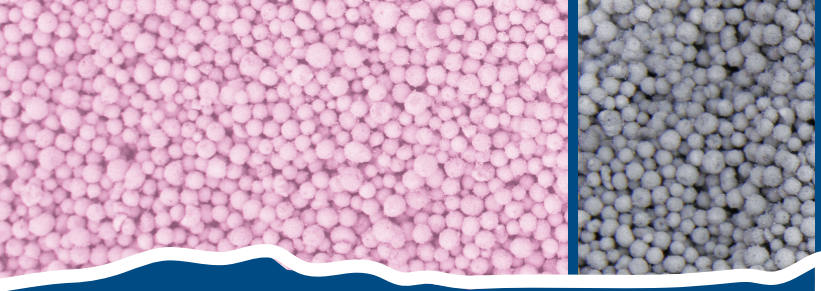


JOHNEX explosives

ANFO

JOHNEX ANFO is a free flowing mixture of porous prilled Ammonium Nitrate and Fuel Oil, formulated to be oxygen balanced for use in dry blastholes.

ANFO is suitable for most dry blasting applications in borehole temperatures up to 55 ° C.

JOHNEX HIGH ENERGY ANFO (ANFO HE) is a free flowing silver/grey mixture of porous prilled Ammonium Nitrate and Fuel Oil formulated to be used where harder rock geologies occur and higher energy is required.

JOHNEX SANFO is a free flowing low energy ANFO mixture that is designed for areas that require a minimised shock pulse transferred into the host rock. This is best used in areas that require trimming, stripping or profile blasting in softer rock formations.

APPLICATION

JOHNEX ANFO and JOHNEX ANFO HE are used in both open pit and underground blast applications. JOHNEX SANFO is best suited for pneumatically loaded underground applications.

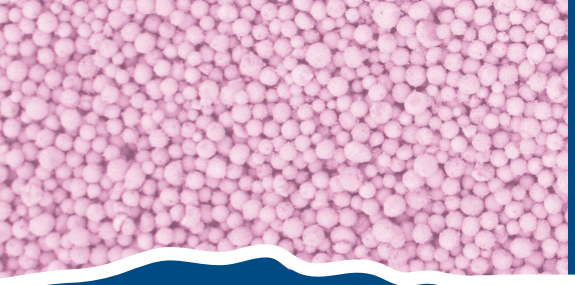
FEATURES AND BENEFITS

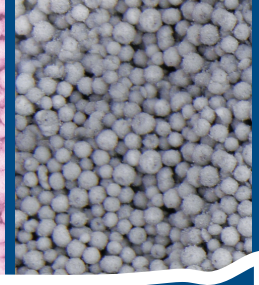
- JOHNEX ANFO can be augured, poured, or loaded with a standard ANFO pressure loader and is ideal for dry stopes, drives and open pit operations.
- ANFO HE is state of the art technology specially formulated for blasting extremely hard rock.
- ANFO HE can replace costly cartridge products or bulk emulsions in dry hole applications including development faces.
- Cost reductions of 20% are achievable when compared to the normal drilling and charging costs that are incurred when obtaining higher explosive energy per m^3.
- Loading time halved when compared with time consuming cartridge or emulsion loading.
- Fragmentation increased due to higher weight strength and higher gas volume with ANFO HE.
- SANFO can be used as a perimeter control product where ANFO or emulsion is showing to damage the perimeter and conditions are dry. The flowing nature of the product means it can be used with the standard ANFO delivery system without any modifications.

PHYSICAL PROPERTIES

	ANFO	HE110	HE115	HE120	SANFO50	SANFO40	SANFO30	ANFO*P	SANFO*P
Poured Density (g/cm^3)	0.80	0.85	0.87	0.89	0.60	0.56	0.50	0.78	0.62
Blow Loaded Density (g/cm^3)	0.96	1.02	1.05	1.07	0.70	0.65	0.58	0.94	0.72
Minimum Blasthole Diameter (mm) (poured)	65	65	65	65	65	65	65	65	65
Minimum Initiation Primer	Mighty Atom 75g Pentolite Booster EziPrime 50								
Typical VOD (m/s)	2500 to 4800	2500 to 4500	2500 to 4200	2500 to 4000	2500 to 3000	2000 to 3000	2000 to 3000	2500 to 4800	2500 to 3000
Relative Weight Strength	100%	125%	140%	145%	80%	71%	61%	98%	78%
Relative Bulk Strength	100%	130%	147%	160%	48%	39%	29%	94%	41%
Explosive Class 1.1D UN Number 0082									

*Relative Weight Strength and Relative Bulk Strength are calculated using an in-house Thermodynamic code. This traditional way of calculating energy is directly related to density and does not take into account the distribution of energy.





JOHNEX explosives

ANFO

STANDARD PACKAGING

PRODUCT	ANFO	HE110	HE115	HE120	SANFO
20kg Bags	✓	✓	✓	✓	✓
500kg Bags	✓	✓	✓	✓	✓

STORAGE AND HANDLING

ANFO should be stored in a cool, dry high explosives magazine licensed for Class 1.1D explosives.

SHELF LIFE

Shelf life is 12 months when stored in ideal conditions as per AS 2187.1. Once package is open, product must be used within 3 months.

Once loaded, ANFO has a sleep time of up to 6 weeks in ideal conditions. Factors that can influence the sleep time include the ground conditions, initiation methods used and presence of water.

SAFETY

ANFO is relatively insensitive to accidental initiation by shock, friction or mechanical impact under normal conditions of use. Detonation may occur from heavy impact or excessive heating particularly under conditions of confinement. No adverse health effects are expected if the product is handled according to directions. If it comes in contact with any part of the body, wash with large amounts of soapy water.

More detailed information can be found in the product Material Safety Data Sheet.

ADDITIONAL INFO

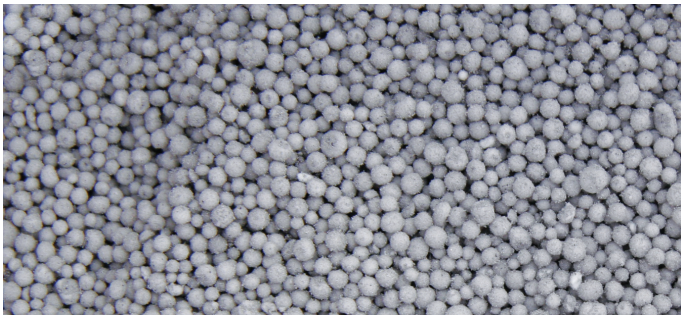
Do not bottom prime with detonating cord tracing the explosive column length. The pressure loading kettle must be dry before loading. Explosives based on Ammonium Nitrate such as ANFO may react with pyritic materials in the ground and create potentially hazardous situations.

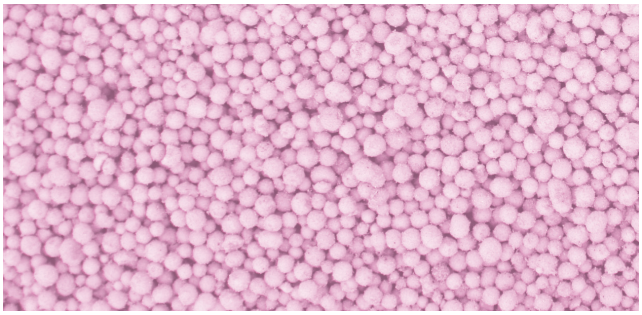
HOLE DIAMETER VS EXPLOSIVES INTIATION COMBINATIONS

	42mm	64mm	76mm	89mm	102mm	115mm	127mm	140mm	150mm
EZIPRIME 50	✓								
75g Mighty Atom	✓	✓							
80g Megaprime Edge	✓	✓							
100g Megaprime	✓	✓	✓	✓					
150g Megaprime		✓	✓	✓	✓	✓			
OZIPRIME 250			✓	✓	✓	✓	✓	✓	✓
400g Megaprime					✓	✓	✓	✓	✓
OZIPRIME 500			✓	✓	✓	✓	✓	✓	✓

OTHER INFORMATION

Site specific formulations to suit ground conditions can be made to order.





ANFO – TECHNICAL DATA SHEET

JOHNEX explosives