

SGX70™

BULK WATERGEL EXPLOSIVE



SGX 70 is a robust, mechanically sensitised high energy bulk explosive suitable for use in wet blast holes. Upon being pumped into the blast hole, the SGX 70 watergel matrix is cross-linked. Cross-linking transforms the product from a thickened gel suspension to a semi solid and provides the water resistance properties of the product.

Benefits

The benefits of SGX 70 watergel are:

- Excellent safety characteristics.
- SGX 70 has very good water resistance in wet holes providing extended sleep times in blast holes with no dynamic water.
- Due to the relatively low water content of SGX 70 it is ideal for applications requiring high shock and heave energy providing excellent fragmentation.
- No down hole variable gassing. The whole batch is mechanically sensitised to the required cup density and confirmed as correct prior to loading into the blast hole.
- Stemming can commence immediately after loading.
- The cross-linking action reduces stemming penetration into the product during stemming operations.
- The formulation is naturally reactive ground inhibited.

Application

SGX 70 is a high energy, low water content product ideal for wet blast holes in hard ground. SGX 70 is batch mixed on site before delivery into the blast hole. SGX 70 can be delivered into the hole at a wide range of densities ranging from 0.90 to 1.25 gm/cc at a delivery rate of 60 to 150 kg/min.

- In dry blast holes where no water is present, SGX 70 can be slept for up to 4 weeks.
- In blast holes where static water is present, depending on hole diameter, SGX 70 should ideally be fired within 48 hours from the loading time.
- In blast holes where dynamic water is present, depending on hole diameter, SGX 70 should ideally be fired on the same day as loading to no more than 24 hours from the loading time.

Specification

(Stated at 100MPa)

PROPERTIES	ANFO	SGX 70
Energy ¹ (MJ/kg)	3.77	3.20
Relative Weight Strength ¹	100	85
Relative Bulk Strength ¹	100	93-130
Normal Density Range ²	0.7-0.85	0.9-1.25
Minimum Hole Diameter	60	89
Water Resistance ³	0	4
Sleeping Time in Dry Holes ⁴	4 Weeks	4 Weeks

1. Energy values, 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.
2. A number of factors affect the final product density including in-hole conditions, ammonium nitrate density, matrix density, ammonium nitrate fines and the amount of air entrainment. The density of the SGX 70 product is able to range from 0.90gm/cc to 1.25gm/cc by entraining air into the matrix.

3. Water resistance is a qualitative measure with 0 being none, 3 being good and 5 being excellent.
4. Sleep times are dependent on in-hole water conditions. In general the longer a particular product sleeps the poorer blasting outcomes. Holes with dynamic water should be loaded and shot immediately, while in extreme dynamic water conditions extra precautions may be required. The sleep time in non-reactive rock types should never exceed 4 weeks.

Classification

UN No:	0241
Shipping Name:	Explosive, Blasting, Type E
Class:	1.1D

Recommendations for Use

SGX 70 is delivered into the blast hole by being pumped from the MPU through a small diameter hose. SGX 70 should always be loaded from the bottom of the hole displacing the water to the surface when filling the hole. Top loading is not recommended and proper hose handling techniques should be employed at all times.

Priming Requirements

In holes with a diameter equal or less than 127mm the minimum primer required is a 150gm cast booster. In holes with a diameter greater than 127mm the minimum primer required is a 400gm cast booster. It is recommended that an additional cast booster be used every 15 metres of column charge to reduce the risks associated with explosive column disruption.

Packaging

SGX 70 is only available in bulk, delivered through bulk MPU delivery systems.

Handling

Information regarding this product is available from the relevant Synegex product MSDS.

Transportation

All explosives are classified as Dangerous Goods and must be transported in accordance with relevant State and Commonwealth regulations. SGX 70 cannot be transported on a public road in the MPU. SGX 70 is batch manufactured when loaded into the MPU from non-explosive ingredients.

Storage & Security

All explosives are classified as Dangerous Goods and must be stored and secured in accordance with the relevant State and Commonwealth regulations.



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