

TECHNICAL DATA SHEET



HiMEX[®] – Bulk Emulsion Explosives

Description

HiMEX[®] products are a range of high energy bulk products for use in both dry and wet blasthole applications. The HiMEX[®] range of high energy bulk products are ideal for hard rock blasting applications.

Features & Benefits

The HiMEX[®] bulk product range are booster sensitive with low viscosity, which allows the product to be pumped or augured into the borehole at constant rates.

When used as a pumped bulk product, the HiMEX[®] range has excellent water resistance enabling long sleep times in wet conditions. The relatively high shock energy of the pumped bulk products can deliver excellent fragmentation in hard rock while the relatively high heave energy of the Heavy ANFO bulk products can deliver excellent digability.

The manufacture of the HiMEX[®] bulk products range through MPUs provides customers with the ability to tailor products to suit their individual ground condition and desired blast outcome. HiMEX[®] pumped bulk products are designed to be chemically gassed, providing customers with the option of various in-hole densities.



Technical Data

Usage Instructions

Heavy ANFO Bulk Products

HiMEX[®] Heavy ANFO bulk products are suitable for loading into dry blastholes only. Please contact your Hanwha technical representative for application in dewatered blastholes.

Pumped Bulk Products

HiMEX[®] pumped bulk products can be slept for up to 3 weeks in blastholes containing static water, while blastholes containing dynamic water should be loaded and fired as soon as possible.

Priming Requirements

The minimum primer recommended for use with HiMEX[®] 70 or higher proportion of emulsion (>70%) bulk products is a 150g pentolite cast booster and for use with others is a 400g pentolite cast booster. For advice on the use of alternative primers, please contact your Hanwha technical representative. Where ground conditions may result in product column dislocation during blasting, use of additional primers is recommended to ensure complete initiation of the bulk product.

Charging Length

HiMEX[®] bulk products are suitable for loading into blast holes up to 45–70 meters in depth. Blasthole diameter, inclination, product density and presence of water will impact on suitability of the selected product for a specific application. Please contact your Hanwha technical representative for further information.

Sleep Times

Under ideal conditions, the maximum recommended sleep time for HiMEX[®] bulk products is 21 days. However, site conditions such as groundwater may affect this period. Please contact your Hanwha technical representative for specific applications.

Name	Augured Bulk Products					
	HiMEX [®] 10	HiMEX [®] 20	HiMEX [®] 30	HiMEX [®] 40	HiMEX [®] 50	HiMEX [®] 60
Product Blend (Emulsion:ANFO)	10 : 90	20 : 80	30 : 70	40 : 60	50 : 50	60 : 40
Effective Energy (MJ/kg)	2.54	2.62	2.67	2.80	2.80	2.57
Relative Weight Strength (%)	104	107	109	114	114	105
Relative Bulk Strength (%)	117	133	150	179	186	151
Velocity of Detonation (km/s)	4.0 – 4.6	4.0 – 4.6	4.0 – 4.7	4.0 – 5.2	4.0 – 5.2	5.0 – 5.7
Nominal Density Range (g/cm ³)	0.85 – 0.94	0.95 – 1.05	1.06 – 1.16	1.17 – 1.30	1.25 – 1.35	1.05 – 1.25
Minimum Hole Diameter (mm)	100	115	140	152	152	89
Water Resistance	None	Poor	Poor	Moderate	Moderate	Moderate
Maximum Sleep Time (Dry)	21 days	21 days	21 days	21 days	21 days	21 days
Delivery Method	Auger	Auger	Auger	Auger	Auger	Auger

HiMEX[®]

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TECHNICAL DATA SHEET



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Pumped Bulk Products				
Name	HiMEX [®] 70	HiMEX [®] 80	HiMEX [®] 90	HiMEX [®] 100
Product Blend (Emulsion:AN)	70 : 30	80 : 20	90 : 10	100 : 0
Effective Energy (MJ/kg)	2.52	2.41	2.29	2.20
Relative Weight Strength (%)	103	99	93	90
Relative Bulk Strength (%)	148	142	134	129
Velocity of Detonation (km/s)	5.0 – 5.7	5.0 – 5.7	5.2 – 5.8	5.2 – 5.8
Nominal Density Range (g/cm ³)	1.05 – 1.25	1.05 – 1.25	1.05 – 1.25	1.05 – 1.25
Minimum Hole Diameter (mm)	64	64	64	64
Water Resistance	Excellent	Excellent	Excellent	Excellent
Maximum Sleep Time (Dry)	21 days	21 days	21 days	21 days
Delivery Method	Pump	Pump	Pump	Pump

1. Energy values and relative strengths are calculated using ideal detonation modelling (for reference, ANFO = 2.45MJ/kg).
2. Velocity of Detonation (VoD) values are approximate only and may vary according to site conditions.
3. Product density values are approximate only and may vary according to component density, charge length and site conditions

Elevated Temperature

HiMEX[®] bulk products are not suitable for use in blastholes that are defined as elevated temperature. Please contact your Hanwha technical representative for specific applications.

Reactive Ground

HiMEX[®] bulk products are not suitable for loading in blastholes defined as either reactive or hot, according to the AEISG Code of Practice for Elevated Temperature and Reactive Ground.

Hazard Classification

UN No. (Class / Division)	0241 / 1.1D
Proper Shipping Name	EXPLOSIVE, BLASTING, TYPE E
Packing Group	II
Hazchem Code	E
EMS	F-B, S-X

Safety

When using HiMEX[®] bulk products, avoid contact with eyes or skin and wash hands thoroughly after handling. Keep HiMEX[®] bulk products away from sources of heat, sparks, flame or hot surfaces and avoid mixing with combustibles or incompatible materials.

Handling Instructions

HiMEX[®] bulk products are available in bulk and are manufactured on site using Mobile Processing Units (MPU).

Storage

All explosives are classified as Dangerous Goods and must be stored and secured in accordance with relevant local and national regulations.

Disclaimer

The information in this Technical Data Sheet is correct as of the date issued and are subject to periodic review. Hanwha reserves the right in its sole discretion and without prior written notice to modify the product(s) and/or specifications described herein ("Product"). Hanwha disclaims any warranties with respect to Product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of Product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Product to determine whether it is fit for a particular purpose and suitable for the user's method of use or application.

The use of Product is an intrinsically dangerous activity and must be restricted to qualified and trained users in possession of any necessary permits and licenses, and comply at all times with appropriate safety and risk prevention measures and with applicable laws.

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This document and any accompanying information is not intended to constitute – and shall not be construed as – an offer or contractual commitment on Hanwha’s side. For further information about Hanwha Products, please contact your distributor or sales representative directly.

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