

# TECHNICAL DATA SHEET

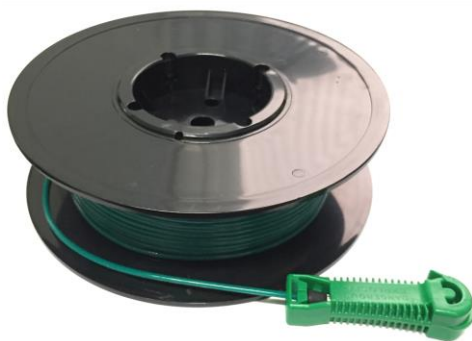
## HiNEL Plus® - Starter



### Description

HiNEL Plus® Starter is a non-electric detonator produced by Hanwha that is used to start a blast in both open pit and underground applications. HiNEL Plus® Starter detonators have a zero (0ms) delay time and can initiate up to six shock tubes at the same time. It can also be extended to provide a greater separation from the blasting area.

The shock tube is both abrasion resistant and high-strength and transmits the signal to detonator in order to initiate. The shock tube is crimped into the detonator shell at one end and closed by a waterproof seal at the other.



### Features & Benefits

HiNEL Plus® Starter detonators consist of a non-electric detonator containing a delay element, a low strength Diazo Dinitro Phenol (DDNP) base charge, a connector block, a length of green shock tube and a J-hook connector(optional).



HiNEL Plus® Starter detonators have a base charge of DDNP to optimally deliver effective blasting signals whilst minimizing damage to the connectors and preventing cut-offs. By adopting a 3 layer shock tube, rubber plug and triple crimping, HiNEL Plus® Starter also have enhanced tensile strength.

### Usage Instructions

HiNEL Plus® Starter detonators are made up of a 3 layer shock tube and have enhanced tensile strength, however moisture may become present if the tubing is split or cut in any way, and this may result in a misfire. HiNEL Plus® Starter shock tube and connector should be protected from impact or damage. Misfires may occur if shock tube is damaged or cut.

Using the "clip and slide" technique, clip each shock tube individually into connector block, ensuring that connector tube is kept at right angles..

### Technical Data

HiNEL Plus® Starter	
Base Charge	DDNP (200mg)
Shell	Aluminum
Outer Diameter of Shell (mm)	7.5
Outer Diameter of Shock Tube (mm)	3.0
Length of Shell (mm)	59
Tensile Strength of Shock Tube	Nominal 45 kgf
Length of Shock Tube (m)	500 m (Custom made possible)

### Standard Delay Range

Delay Time (ms)	Color of the Shock Tube
0 (~10)	Green

### Hazard classification

UN No. (Class / Division):	0360(1.1B) / 0500 (1.4S)
Proper Shipping Name	DETONATOR ASSEMBLIES, NON- ELECTRIC for blasting
EmS	F-B, S-X (1.1B / 1.4S)

### Packaging

HiNEL Plus® Starter detonators are packaged in cardboard boxes

UN 0500 / 1.4S, UN 0360/ 1.1B (470 x 295 x 315mm)				
Grade	Length	Each/Box	Net Weight (kg)	Gross Weight (kg)
	30m	10	5	6.5
	50m	10	6.5	8.0
	100m	10	9	10.5
	150m	10	12	14.0

UN 0500 / 1.4S, UN 0360/ 1.1B (225 x 440 x 250mm)				
Grade	Length	Each/Box	Net Weight (kg)	Gross Weight (kg)
	500m	2	5	9.0

\* Based on one box (UN certified)

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### Safety

HiNEL Plus® Starter detonators are designed to reduce the risk of initiation by static electricity, stray electrical currents and radio wave transmissions. As high-electrical shocks, such as lightning, may cause initiation, it is recommended that personnel evacuate to a safe distance and keep away from the blasting site whenever this hazard is present. HiNEL Plus® Starter Series detonators should be isolated from energy sources including impact, heat or friction. HiNEL Plus® Starter detonators may be used in temperatures up to 70°C.

### Storage

All ignition sources, such as matches and lighters, are strictly prohibited within 8 meters of explosives.

HiNEL Plus® Starter detonators should be stored in a properly conditioned magazine of cool and dry atmosphere.

HiNEL Plus® Starter detonators must be used within 12 months after opening the packaging. Detonators that are older than four years should not be used.

Store in a secure magazine, access to products and storage should be restricted to authorized personnel.

Delay detonators should be used in order of manufacturing date as they deteriorate with age. Use oldest stored product first.

### Disclaimer

The information in this Technical Data Sheet is believed to be correct as of the date issued but 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 expressed 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 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.

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 Product, please contact your distributor or sales representative directly.

**Please contact the following offices for any emergency or enquiry.**

#### Head Office (Korea)

##### Hanwha Corporation

Hanwha Building 17th floor  
86 Cheonggyecheon-ro, Jung-gu  
Seoul, Korea 04541

TEL. +82 2 729 1629

FAX. +82 2 729 1850

E-mail [commercial@hanwha.com](mailto:commercial@hanwha.com)

#### HMS INDONESIA

##### PT. Hanwha Mining Services Indonesia

Talavera Office Park, Suite Area, 21th Floor  
JL. TB Simatupang Kav 22 Cilandak  
Barat Jakarta Selatan 12430

TEL. +62 21 2782 8378

FAX. +62 21 2782 8643

E-mail [hmsindonesia@hanwha.com](mailto:hmsindonesia@hanwha.com)

#### HMS AUSTRALIA

##### Hanwha Mining Services Australia Pty Ltd

Level 9, 132 Arthur Street North Sydney NSW 2060  
Australia

TEL. +61 416 770 529

Emergency 1800 054 055

E-mail [australia@hanwha.com](mailto:australia@hanwha.com)

#### HMS LATIN AMERICA

##### Hanwha Mining Services Chile

Alonso de Cordova 5870, Office 707, Las Condes,  
Santiago, Chile

TEL. +56 2 2993 7546

E-mail [hmschile@hanwha.com](mailto:hmschile@hanwha.com)

#### HMS USA

##### Hanwha Mining Services USA

420 East South Temple Suite 260, Salt lake City  
UTAH 84111, USA

TEL. +1 801 336 1553, 1602

FAX. +1 801 384 0567

E-mail [leehw@hanwha.com](mailto:leehw@hanwha.com)

#### SOUTH AFRICA

##### Hanwha Corporation Johannesburg

Cedar Office estate Block 1, Unit 1A  
Corner Stinkwood Cl & Cedar Rd broad acres  
2021, Johannesburg, South Africa

TEL. +27 11 317 7300

FAX. +27 11 465 0499

E-mail [yhlee@hanwha.com](mailto:yhlee@hanwha.com)

HiNEL Plus® – Starter

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[www.hanwhacorp.co.kr/eng/explosives](http://www.hanwhacorp.co.kr/eng/explosives)