

# TECHNICAL DATA SHEET

## HiNEL Plus® - DHD Series



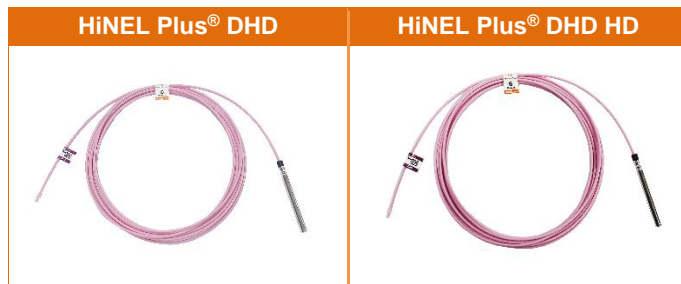
### Description

HiNEL Plus® DHD (Down Hole Delay) Series detonators are non-electric detonators specifically developed specifically for surface mines with enhanced delay time accuracy. HiNEL Plus® DHD Series detonator are designed to be used in combination with HiNEL Plus® SDD Series. The shock tube is constructed of high-strength, abrasion/impact/methane and oil resistant materials. The shock tube 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. J-Hook (optional) can be provided to sites where detonating cords are used instead of surface delay detonators.

### Features & Benefits

HiNEL Plus® DHD Series detonator consist of a non-electric detonator containing a delay element, a high strength Pentaerythritol Tetranitrate (PETN) base charge, a length of HiNEL Plus® shocktube or HiNEL Plus® heavy duty shocktube and J-Hook (optional). HiNEL Plus® DHD Series is also available with heavy duty shocktube. Labels showing the lengths and delay times are attached on shocktube.

HiNEL Plus® DHD Series have a base charge of grade #8 PETN to improve the reliability of the ignition of explosives. By adopting a 3 layered shocktube, rubber plug and triple crimping, HiNEL Plus® DHD Series also have enhanced tensile strength.



### Usage Instructions

HiNEL Plus® DHD Series detonators are made up of a 3 layer shoke tube. HiNEL Plus® DHD HD Series detonators are made up of HD shock tube that has enhanced tensile strength and impact resistance. However, moisture may present if shock tube is split or cut in any way, which may result in misfire.

HiNEL Plus® DHD Series detonator should be fully enclosed within a suitable booster or primer and never be placed inside blastholes or charging hoses directly. Excessive force should not be used when handling shock tubes connected to detonators or primers. A replacement should be used if a primer becomes stuck or non-retrievable.

If used inside blast holes, HiNEL Plus® DHD Series detonator should be reversed primed ensuring the detonator base is pointing towards the blasthole collar.

In case of using detonating cord, HiNEL Plus® DHD Series detonator should be attached via J-hook connector to the detonating cord trunklines. Each J-hook connector should be clipped to the trunkline, and the cord and shock tube should be kept at right angles. Pull the end of the shock tube through its J-hook until the tube is straight and firm between the connection and the blasthole collar. No shock tubes should cross over or lay within 300mm of the detonator cord. Using a detonating cord with a core charge of 5.0 g/m PETN, HiNEL Plus® DHD Series detonator can be reliably initiated.

Recommended sleep time of HiNEL Plus® DHD Series detonator is 2 weeks at temperatures below 40°C. Recommended sleep time of HiNEL Plus® DHD HD Series detonator is 4 months at temperatures below 40°C. Sleep time capability may reduce at temperatures above 40°C.

### Technical Data

HiNEL Plus® DHD detonator	
Base Charge	PETN, #8 (730mg)
Primary Charge	DDNP
Shell	Aluminum
Outer Diameter of Shell	7.5mm
Outer Diameter of Shock Tube	3.0mm
Length of Shell	From 80mm to 90mm
Tensile Strength of Shock Tube	Standard
	HD
Length of Shock Tube (m)	Nominal 45 kgf
	Nominal 51 kgf
	3.6 / 4.8 / 6.0 / 7.2 / 9.0 / 12 / 15 / 18 / 21 / 24 / 30 / 36 / 45 (Custom made possible)

### Standard Delay Range

Delay Time (ms)	Color of Shocktube	
400	Standard	HD
425	Pink	Pink
450		
475		
500		
550		
600		
650		

HiNEL Plus® – DHD Series AU

Revised on 25<sup>th</sup> May, 2021 (Ver 2.2)

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## HiNEL Plus® - DHD Series



### Packaging

HiNEL Plus® DHD Series detonators and HiNEL Plus® DHD HD Series detonators are packed in cardboard boxes. Each box contains only a single lead length and delay.

HiNEL Plus® DHD Series detonator should be stored in a properly conditioned magazine of cool and dry atmosphere.

HiNEL Plus® DHD Series detonator 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 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 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. Always comply with appropriate safety and risk prevention measures and with applicable laws.

This document and any accompanying information are 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.

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Grade UN 0360 / 1.1B (480 X 295 X 165mm)				
Winding Type	Length (m)	Each /Box	Net Weight (kg)	Gross Weight (kg)
Coil	3.6	70	2.0	3.5
	4.8	60	2.0	3.5
	6.0	50	2.5	4.0
	7.2	50	2.5	4.0
	9.0	40	3.0	4.5
	12	30	3.0	4.5
	15	30	3.0	4.5
	18	25	3.5	5.0
	21	20	3.0	4.5
	24	20	3.5	5.0
	30	15	3.0	4.5
Spool	30	12	4.0	6.0
	36	12	4.5	6.5
	45	12	5.5	7.5
	60	4	3.0	4.5
	80	4	3.5	5.0

### Hazard Classification

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

### Safety

HiNEL Plus® DHD Series detonators are designed to reduce the risk of initiation by static electricity, stray electrical currents and radio wave transmissions. However, 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. HiNEL Plus® DHD Series detonators should be isolated from energy sources including impact, heat or friction. HiNEL Plus® DHD Series detonators may be used in temperatures up to 70°C.

### Storage

All ignition sources, such as matches and lighters, are strictly prohibited within minimum of 8 meters radius of the detonators.

# TECHNICAL DATA SHEET

## HiNEL Plus<sup>®</sup> - DHD Series



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

Suite 701 10 Help street, Chatswood NSW 2067  
Australia

TEL. +61 456 778 375

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)

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