

## TECHNICAL SPECIFICATION

# NITRONEL LP (0-70)

## NON-ELECTRIC, ROCK, DECISECOND DETONATOR DELAY NUMBER (0-70)

### GENERAL INFORMATION

- 1. Application in specific conditions:**
  - **NITRONEL LP (0-70)** is recommended for use in the underground mines, open pit mines and construction - engineering works.
  - **NITRONEL LP (0-70)** cannot be used in conditions where the danger of coal dust and/or methane explosion exists.
- 2. Information about the allowable period of storage:**
  - The shelf life of **NITRONEL LP (0-70)** is 12 (twelve) months from the date of manufacture.
- 3. Storage conditions:**
  - **NITRONEL LP (0-70)** have to be stored in original package in the temperature range 0 °C ÷ 45 °C.
- 4. Disposal:**
  - Waste of non – electric detonators and expired non – electric detonators and non – electric detonators as well as packaging wastes should be delivered to a company with a proper permission to destroying.

### ADDITIONAL INFORMATION

- 1. Information about physical form and dimensions:**
  - Shell material - aluminium  
On the bottom of shell should be stamped the symbol of belonging to a group, that is the letter "S" and the number of degree of delay.
  - Shock tube colour: red or according to customers specification.
  - Length of shock tube: according to customers specification.
- 2. Information about initiating sensitivity:**
  - A single detonator contains 700 mg of PETN, used as a secondary explosive (equiv. standard cap 8).
  - To be sure that initiation of non-electric detonators **NITRONEL LP (0-70)** is proper, it is recommended to use the appropriate initiation device or other approved for this purpose authorized means, included detonating cord, with amount of PETN 6 ÷ 12 g/m or electric detonators.
- 3. Information about loading conditions:**
  - **NITRONEL LP (0 -70)** can be loaded to dry and wet blasting holes.
- 4. Information about application in humid conditions:**
  - **NITRONEL LP (0-70)** can be used under water at the depth 3 m within 48 hours.
- 5. Information about application in high and low temperature:**
  - **NITRONEL LP (0-70)** have to be used in the temperature range -25 °C ÷ 50 °C.

6. Information about technical parameters:

- > Nominal delay time of NITRONEL LP (0-70) for particular delay time according to Table 1.

Table 1

Delay number	Nominal delay time [ms]	Delay number	Nominal delay time [ms]
0	max. 10 ms	16	1600
1	100	18	1800
2	200	20	2000
3	300	25	2500
4	400	30	3000
5	500	35	3500
6	600	40	4000
7	700	45	4500
8	800	50	5000
9	900	55	5500
10	1000	60	6000
12	1200	65	6500
14	1400	70	7000

- > Technical parameters for NITRONEL LP (0-70) according to Table 2.

Table 2

VOD inside shock tube	2000 ± 200 m/s
Thermal stability in temperature 75 °C	48 h
Permissible pressure of use	max 0,30 MPa

7. Certificates:

- > EC Type-Examination Certificate No. 1453.EXP.07.0139 issued by Central Mining Institute in Katowice, with attachments.
- > Classification Certificate No. 019/IPO-BW/2009 issued by Institute of Industrial Organic Chemistry in Warsaw (Class/classification code: 1/1.1 B).
- > Classification Certificate – No. 013/IPO-BW/2011 issued by Institute of Industrial Organic Chemistry in Warsaw (Class/classification code: 1/1.4 B).
- > Classification Certificate – No. 009/IPO-BW/2012 issued by Institute of Industrial Organic Chemistry in Warsaw (Class/classification code: 1/1.4 S).

8. Packaging (class/classification code: 1/1.1 B):

- > Elementary – bundles of 5 or 10 pieces with the same degree of delay – depending on length of shock tube in reel.
- > Collective – PE bags.
- > Transport – cardboard boxes arranged on wooden pallet. A cargo placed on pallet is wrapped with stretch film.

At customer's request, another way of packing is acceptable.

9. Transport guidelines:

- > Proper transport name: **DETONATOR ASSEMBLIES, NON-ELECTRIC**
- > Class: **1**
- > Classification code: **1.1 B      1.4 B      1.4 S**
- > No. identification of material: **UN 0360      UN 0361      UN 0500**

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