

## NONEL<sup>®</sup> Bunch Connector

<b>Manufactured by</b>	Dyno Nobel Sweden AB Gyttorp S-713 82 NORA SWEDEN Phone +46 587 850 00	<b>Issued on</b>	2000-02-24
		<b>Version</b>	4
		<b>Compiled by</b>	Thomas Brandel

### 1 IDENTIFICATION

**Trade name:** Nonel<sup>®</sup> Bunch Connector

**Chemical/technical classification:** Detonators assemblies, non-electric, for blasting

### 2 COMPOSITION

<u>Substances which may render the product hazardous to health</u>	<u>CAS No</u>	<u>Content %</u>	<u>TLW</u>	<u>Remarks</u>
<i>Detonators:</i>				
PETN	78-11-5	~0.2 g/cap		
<i>Detonating cord:</i>				
PETN	78-11-5	~5 g/m		0.6 m/bunch
<i>Nonel tube:</i>				
Octogen (HMX)	2914-29-6	16 mg/m		
Aluminium powder	7429-90-5	2 mg/m		
<b><u>Other substances</u></b>				
<i>Nonel tube:</i>				
Inner layer: Ionomer	25608-26-6	~2 g/m		
Middle & outer layer: Polyethylene	25087-34-7	~2 + 2 g/m		
<i>Connector:</i>				
Polyethylene	25087-34-7			
<i>Detonator:</i>				
Aluminium shell	7429-90-5			
Sealing element (EPDM/PP rubber)	144046-11-7			

### 3 HEALTH HAZARDS

**Inhalation:**

**Eyes:** Risk of splinters from uncontrolled detonations

**Skin:** Risk of splinters from uncontrolled detonations

**Ingestion:**

**4 FIRST AID**

**Inhalation:**

**Eyes:**

**Skin:**

**Ingestion:**

**Information to physician:** The blasting cap produces steel and aluminium splinters

**5 FIRE PROTECTION**

**Specific fire hazard or explosion risk:** Risk of explosion in the event of fire, or high pressure impact

**Safety measures:**

**Extinguishing agent:**

**Extinguishing agent  
NOT to be used:**

**6 MEASURES IN THE EVENT OF SPILLAGE**

Defective and damaged caps should be destroyed according to the manufacturers recommendations.

Individual detonators and detonating cord can be destroyed by detonating them in conjunction with the firing of a round. Cut the tubes off the detonators and drop the detonators and detonating cord bunches one-by-one into one or more of the drill holes. They will detonate when the round is fired.

If larger quantities of detonators need to be destroyed due to damage or age, please contact Dyno Nobel or nearest Dyno Nobel representative.

*Destroying Nonel tubes:*

With the aid of a DynoStart blasting machine, initiate and burn out the reactive substance in the tube and then send it to:

1. A recycling site
2. A garbage dump
3. An incineration site

## MATERIAL SAFETY DATA SHEET

### 7 STORAGE AND HANDLING

**Storage:** Storage of explosives according to local restrictions and authorities regulations.

**Handling:** The products should be handled as specified in the manufacturer's instructions.

### 8 PRECAUTIONS DURING STORAGE AND HANDLING

**Preventive measures:** **No smoking, fire, sparks or welding. Static electricity must be avoided.**

**Personal protection gear:** When handling blasting caps it is recommended that protective goggles are used.

### 9 PHYSICAL/CHEMICAL PROPERTIES

**Description of product:** Blasting cap of aluminium with non-electric signal conductor of low-energy type (plastic tubing covered inside with a reactive substance). Connectors of polyethylene. Detonating cord with waxed textile over layer.

<b>Boiling point (°C):</b>	<b>Solidifying/melting point (°C)</b>	Plastic of the tube 120°C PETN 141°C
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<b>Density (kg/m<sup>3</sup>):</b>	<b>Relative vapour density (air = 1)</b>
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<b>Flash point (°C):</b>	<b>Ignition temp (°C)</b>	202°C
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<b>Explosion range in air: (vol%)</b>	<b>Solubility in organic solvents</b>
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<b>Vapour pressure (°C): (mm Hg) (kPa)</b>	<b>pH of concentrate pH of ready-to-use solution (%)</b>
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**Relative evaporation rate:**  
(Ether = 1)  
(BuAc = 100)

## MATERIAL SAFETY DATA SHEET

### 10 STABILITY AND REACTIVITY

<b>Stability:</b>	It is recommended that Nonel Bunch Connector is stored at a maximum temperature of 50°C.
<b>Avoid mixing with:</b>	During storage avoid store together with other explosives material.
<b>Dangerous decomposition products:</b>	
<b>Dangerous combustion products:</b>	Nitrous gases (NO <sub>x</sub> ), carbon monoxide and 0.03 g Pb. When a blasting cap is detonated, steel splinters are created.

### 11 TOXICOLOGICAL DATA

### 12 ECO-TOXICOLOGICAL DATA

### 13 DESTRUCTION

Contact the supplier for instructions

### 14 TRANSPORT REGULATIONS

<b>UN No :</b>	0360	<b>Packaging group</b>	II		
<b>ADR/RID:</b>	1.1B	<b>Substance No</b>	1, 35, 47		
<b>IMDG Class:</b>	As above	<b>Page</b>	1256	<b>EmS No</b>	1-01, 1-04
<b>MFAG No:</b>	See subsection 7.3				
<b>DGR:</b>	See ADR				
<b>Description of goods:</b>	Detonator assemblies, non-electric, for blasting				
<b>Miscellaneous:</b>					

**MATERIAL SAFETY DATA SHEET**

**15 CLASSIFICATION AND MARKING**

<b>Chemical product hazardous to health:</b>	No		
<b>Chemical product hazardous to the environment:</b>	No		
<b>Flammable product:</b>		<b>Class</b>	
<b>Explosive product:</b>	Yes		
<b>Marking category(ies):</b>	Explosive		
<b>Danger symbol:</b>	Bomb label	<b>Main text</b>	Explosive
<b>R(isk) texts:</b>	Explosive		
<b>S(afety) texts:</b>			

**16 OTHER INFORMATION**

Permission is required for the handling of blasting caps.

The cap within the connector is designed only for initiation of the adapted detonating cord. No other use is recommended.

Nonel blasting caps do not contain any carcinogenic components or raw materials and the amount of lead is very low. By using new substances which are not classified as hazardous to the environment we have greatly reduced the amount of dangerous residues produced when the blasting caps are detonated. It is our aim to develop products which are as environmentally friendly as possible. Lead, for example, has to a great extent been replaced by non-classified substances.