

SDS no. : 3016  
Issue : 02  
Date : 2010-09-10

## 1 Identification of the Substance/preparation and of the company / manufacturer

### *Product-name:*

Exel™ MS, Exel™ LP, Exel™ Handidet, Exel™ Handidet SL, Exel™ Connectadet,  
Exel™ Connectadet SL, Exel™ U Det, Exel™ B Connector, Exel™ Lead-In Line, Exel™ Starter

### *Usage:*

Detonators for the initiation of capsule-sensitive explosive agents and detonating-cords.

### *Manufacturer/Supplier:*

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## 2 Hazards identification

### *Possible dangers:*

Fire and explosion: Risk of explosion by shock, friction, fire or other sources of ignition.  
Risk of explosion, an uncontrolled explosion may cause great physical damage.

Health: Exposure concerns are primarily with post-detonation reaction products.  
Splinters from the detonation may cause considerable burns and wounds.  
Inhalation of gas is considered to be neglectable.  
At detonation the amount of explosive per igniter will maximum generate 1 l of gas.

Environment: The product is not classified as harmful to the environment.

### *Other hazards:*

Exel™ Lead-In Line has no classification.

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### 3 Composition / information on ingredients:

#### DETONATOR / CONNECTION UNITS:

<i>Dangerous contents:</i>	<i>CAS No.</i>	<i>EINECS no.</i>	<i>Code letters of danger symbol</i>	<i>R phrases</i>	<i>Contents</i>
Pentaerythritol tetranitrate	78-11-5	201-084-3	E	R3	~ 0,2 g
Polyethylene	25087-34-7				
Aluminium (detonator case)	7429-90-5	231-072-3			
Rubber (sealing case)	144046-11-7				

#### HIGH STRENGTH DETONATORS:

<i>Dangerous contents:</i>	<i>CAS No.</i>	<i>EINECS no.</i>	<i>Code letters of danger symbol</i>	<i>R phrases</i>	<i>Contents</i>
Hexogen (RDX)	121-82-4	204-500-1	E; T	R2; R25	0,5 - 1,0 g
Pentaerythritol tetranitrate	78-11-5	201-084-3	E	R3	0,5 - 1,0 g

#### TUBE:

<i>Dangerous contents:</i>	<i>CAS No.</i>	<i>EINECS no.</i>	<i>Code letters of danger symbol</i>	<i>R phrases</i>	<i>Contents</i>
Octogen (HMX)	2914-29-6	220-260-0	E; T	R2; R25	0,01 - 0,02
Aluminium powder (pyrophoric)	7429-90-5	231-072-3	F	R15; R17	0,01 - 0,005
Ionomer (plastic inner)	25608-26-6				~ 2
Polyethylene (middle and exterior layer)	25087-34-7				~ 4

#### DETONATING FUSE:

<i>Dangerous contents:</i>	<i>CAS No.</i>	<i>EINECS no.</i>	<i>Code letters of danger symbol</i>	<i>R phrases</i>	<i>Contents</i>
Pentaerythritol tetranitrate	78-11-5	201-084-3	E	R3	~ 5

#### Component comments:

The contents without denominations shall have g/m.  
See section 16 for explanation of Risk-phrases listed above.

Different detonator assemblies:

High strength detonators with aluminium case, tubes with interior coating of explosive material.  
Connection units in plastic, containing detonators like above, but the charge is reduced.

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#### 4 First aid measures

- General:** If in doubt, get medical advice. Inhalation Fresh air and rest.  
Get medical attention if any discomfort continues.
- Skin contact:** Splinters from steel or aluminium may cause great damage, possibly blood poisoning.  
Consult a doctor if symptoms should occur.
- Eye contact:** Splinters from steel or aluminium may cause damage. Immediately consult a doctor.
- Ingestion:** Not relevant. Rinse the mouth. Consult a doctor.

#### 5 Fire-fighting measures

- Suitable extinguishing media:** Extinguish surrounding fires with suitable extinguisher.
- Improper extinguishing media:** Do not fight fires involving explosives, risk of explosion.  
Fire in explosives can not be extinguished with any fire fighter equipment. Fire fighting should be limited to preventing spread of other fires.
- Fire and explosion hazards:** Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- Personal protective equipment:** Use self-contained breathing protection when the product is involved in fire.  
In case of evacuation, an approved protection mask should be used.  
See also sect. 8.
- Other Information:** Evacuate all personnel to a predetermined safe location.  
Notify authorities in accordance with emergency response procedures.  
If possible without risk, immediately remove containers close to the fire.

#### 6 Accidental release measures

- General measures:** Accident release to soil can easily be cleaned up because of the packaging of the product.
- Personal precautions:** Use protection equipment as given in section 8.  
Avoid contact with skin and eyes.
- Environmental precautions:** Do not allow to enter into sewer, water system or soil.
- Methods for cleaning:** Detonators must be picked up mechanically and put in approved, labelled containers.  
Make sure there are no explosives with the detonators.  
The product is hazardous waste and should be transferred to a closable, labelled salvage container for disposal by an appropriate method (See sect. 13)
- Other instructions:** -

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## 7 Handling and storage

### Handling:

Only to be handled by authorized personnel.  
Place the explosives under supervision and unavailable for persons not concerned.  
Avoid smoking and use of open fire.  
Protect against heating.  
Protect against physical damage and/or friction.

### Storage:

Store in a dry well ventilated place.  
Storage room must be locked and secured from fire.  
Keep away from heat, flame, ignition sources and strong shock  
Store separated from: explosives.  
To be stored at temperatures between 0 °C and 30 °C.

**Special risks and properties:** Extreme risk of explosion by shock, friction, fire or other sources of ignition

## 8 Exposure controls / personal protection

### Exposure limit values:

Component name	Identification		Unit	Year
	CAS No.	EINECS no.		
Aluminium powder	7429-90-5	231-072-3	8 h : 2 mg/m <sup>3</sup>	1996

### Exposure controls:

#### Other Information:

The exposure limit values are Swedish limits.  
Be aware that limit values in other countries may differ from these.  
The last edition of Occupational exposure limit values and measures against air contaminants is from 2007.  
The given safety equipment is a suggestion.  
Risk assessment (actual risk) may lead to other requirements.

**Occupational exposure controls:** No eating, drinking or smoking while working with this material.  
Wash hands at the end of each work shift and before eating, smoking and using the toilet.

#### Respiratory protection:

Normally not required.

#### Hand protection:

Use gloves suitable for the work.

#### Eye protection:

Normally not necessary.

#### Skin protection:

(other than of the hands)

Wear appropriate anti-static clothing.

#### Other Information:

Eye wash facilities should be available when handling this product.

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## 9 Physical and chemical properties

<b>Physical state:</b>	Different detonator assemblies. See section 3, or the Technical Data Sheet for each product.
<b>Odour:</b>	None
<b>Specific gravity:</b>	<b>Value:</b> 1500 kg/m <sup>3</sup> <b>Comments:</b> The value is for the plastics in the tube.
<b>Melting point/melting range:</b>	<b>Value:</b> >120 °C <b>Comments:</b> The value is for the plastics in the tube. Melting point for detonators is 141 °C (Pentaerythritoltetranitrate)
<b>Flash point:</b>	<b>Value:</b> >220 °C <b>Comments:</b> The value is for the plastics in the tube.
<b>Spontaneous combustability:</b>	<b>Value:</b> ~ 260 °C <b>Comments:</b> The value is for the plastics in the tube. Spontaneous combustability for detonators is 202 °C (charge in detonator)
<b>Other physical and chemical properties:</b>	See Technical Data Sheet for each product for more information.

## 10 Stability and Reactivity

<b>Conditions to avoid:</b>	May detonate with impact, friction or on heating. Do not expose to temperatures above 50 °C.
<b>Stability:</b>	Stable under normal temperature conditions and recommended use.



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## 11 Toxicological information

<b>General:</b>	Exposure concerns are primarily with post-detonation reaction products. Splinters from the detonation may cause considerable burns and wounds to the skin and eyes.
<b>Inhalation:</b>	Gas or vapour may irritate respiratory system.
<b>Skin contact:</b>	Not relevant.
<b>Eye contact:</b>	Moderately irritating.
<b>Ingestion:</b>	Not likely, due to the packaging. Harmful if swallowed.
<b>Chronic effects:</b>	No known chronic or acute health hazards.
<b>Sensitisation:</b>	Sensitizing properties are not known.
<b>Carcinogenicity:</b>	Carcinogenic properties are not known.
<b>Teratogenic properties:</b>	Effects on fetus development are not known.
<b>Reproductive toxicity:</b>	Effects harmful to reproduction are not known.
<b>Mutagenicity:</b>	Mutagenic properties are not known.

## 12 Ecological information

<b>Ecotoxicity:</b>	The product is not classified as dangerous for the environment.
<b>Mobility:</b>	Insoluble in water.
<b>Persistence and degradability:</b>	Not readily biodegradable.
<b>Bioaccumulative potential:</b>	Will not bio-accumulate.

## 13 Disposal considerations

<b>Product classified as hazardous waste:</b>	Yes
<b>Packaging classified as hazardous waste:</b>	Yes
<b>Specify the appropriate methods of disposal:</b>	Dispose of in a regulated landfill site or other method for hazardous or toxic wastes. Residues of explosives must immediately be removed for intermediate storage and disposed for safely destruction. Product and package is hazardous waste. Deliver to approved depot.



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## 16 Other information

### ***Recommended restrictions on use:***

Handling of explosives and explosive articles should only be allowed to qualified persons and in accordance with the specific national regulations.

### ***Supplier's notes:***

Information in this document is to be made available for all who handle the product.

### ***List of relevant R phrases (under headings 2 and 3):***

- R2 - Risk of explosion by shock, friction, fire or other sources of ignition.
- R3 - Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R15 - Contact with water liberates extremely flammable gases.
- R17 - Spontaneously flammable in air.
- R25 - Toxic if swallowed.

### ***Technical contact point***

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This Safety Data Sheet is handed only in the form of a machine-written original document, any copies are not authorized.

The information contained is based on the present state of our knowledge.

It characterizes the product with regard to the appropriate safety precautions, but does not represent any guarantee with regard to product properties fixed by contract.

As being machine-written this Safety Data Sheet is not signed.