# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

## SECTION 1: Identification of the substance/mixture and of the company/ undertaking

· **1.1 Product identifier**

· **Trade name: Detonators, Electric (Class 1.1B)**

· **Article number:** 1076
· **Other product identifiers:**
ELECTRIC SUPER™ COAL
ELECTRIC SUPER™ LP
ELECTRIC SUPER™ SP
ELECTRIC SUPER™ STARTER
ELECTRIC INSTANT
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture**
Explosive product.
Commercial blasting applications

· **1.3 Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
Dyno Nobel Inc.
2795 East Cottonwood Parkway, Suite 500
Salt Lake City, Utah 84121
Phone: 801-364-4800
Fax: 801-321-6703
E-Mail: dnna.hse@am.dynonobel.com

· **1.4 Emergency telephone number:**
CHEMTREC
1-800-424-9300 (US/Canada)
+01 703-527-3887 (International)

## SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**
Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).
Hazard Statement H410 is not applicable to the OSHA US regulations.


exploding bomb

Expl. 1.1 H201 Explosive; mass explosion hazard.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

E; Explosive

R2: Risk of explosion by shock, friction, fire or other sources of ignition.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

(Contd. on page 2)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 1)

· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.
· **Additional information:**
There are no other hazards not otherwise classified that have been identified.
0 percent of the mixture consists of component(s) of unknown toxicity

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).
The product is classified and labelled according to the CLP regulation.
· **Hazard pictograms**

GHS01

· **Signal word** Danger

· **Hazard-determining components of labelling:**
pentaerythritol tetranitrate (PETN)
diazodinitro phenol (DDNP)
Nitrocellulose, colloided, granular
lead diazide
· **Hazard statements**
H201 Explosive; mass explosion hazard.
· **Precautionary statements**

| | |
|---|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P230 | Keep wetted. |
| P250 | Do not subject to grinding/shock/friction. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P240 | Ground/bond container and receiving equipment. |
| P373 | DO NOT fight fire when fire reaches explosives. |
| P370+P380 | In case of fire: Evacuate area. |
| P372 | Explosion risk in case of fire. |
| P401 | Store in accordance with local/regional/national/international regulations. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Additional information:**
EUH201 Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.
· **Hazard description:**
· **WHMIS-symbols:** Explosive products are not classified under WHMIS.
· **NFPA ratings (scale 0 - 4)** Not available.

· **HMIS-ratings (scale 0 - 4)** Not available

(Contd. on page 3)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 2)

| · **HMIS Long Term Health Hazard Substances** | |
|---|---|
| 13424-46-9 | lead diazide |
| 7758-97-6 | lead chromate |
| 13463-67-7 | titanium dioxide |
| 7778-74-7 | potassium perchlorate |

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Explosive Product Notice**
PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES - The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING - All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, DO NOT USE IT before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

## SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

| · **Dangerous components:** | |
|---|---|
| CAS: 13424-46-9<br>EINECS: 236-542-1<br>Index number: 082-003-00-7 | lead diazide<br>T Repr. Cat. 1, 3 R61; Xn R62-20/22; E R3; N R50/53 R33<br>Unst. Expl., H200<br>Carc. 1B, H350; Repr. 1A, H360Df; STOT RE 2, H373<br>Aquatic Acute 1, H400; Aquatic Chronic 1, H410<br>Acute Tox. 4, H302; Acute Tox. 4, H332 |
| CAS: 78-11-5<br>EINECS: 201-084-3<br>Index number: 603-035-00-5 | pentaerythritol tetranitrate (PETN)<br>E R3<br>Unst. Expl., H200 |
| CAS: 7440-33-7<br>EINECS: 231-143-9 | tungsten<br>substance with a Community workplace exposure limit |

(Contd. on page 4)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 3)

| | |
|---|---|
| CAS: 10294-40-3<br>EINECS: 233-660-5<br>Index number: 056-002-00-7 | barium chromate<br>Xn R20/22<br>Carc. 1A, H350<br>Acute Tox. 4, H302; Acute Tox. 4, H332 |
| CAS: 7440-36-0<br>EINECS: 231-146-5 | antimony<br>substance with a Community workplace exposure limit |
| CAS: 7440-21-3<br>EINECS: 231-130-8 | silicon<br>F R11<br>Flam. Sol. 2, H228 |
| CAS: 1314-41-6<br>EINECS: 215-235-6<br>Index number: 082-001-00-6 | orange lead<br>T Repr. Cat. 1, 3 R61; Xn R62-20/22; N R50/53<br>R33<br>Carc. 1B, H350; Repr. 1A, H360Df; STOT RE 2, H373<br>Aquatic Acute 1, H400; Aquatic Chronic 1, H410<br>Acute Tox. 4, H302; Acute Tox. 4, H332 |
| CAS: 7439-92-1<br>EINECS: 231-100-4 | lead<br>T Repr. Cat. 1 R60-61-48/23/25; N R50/53<br>Repr. 1A, H360FD; STOT RE 1, H372<br>Aquatic Acute 1, H400; Aquatic Chronic 1, H410 |
| CAS: 7758-97-6<br>EINECS: 231-846-0<br>Index number: 082-004-00-2 | lead chromate<br>T Carc. Cat. 2, Repr. Cat. 1, 3 R45-61; Xn R62; N R50/53<br>R33<br>Carc. 1B, H350; Repr. 1A, H360Df; STOT RE 2, H373<br>Aquatic Acute 1, H400; Aquatic Chronic 1, H410 |
| CAS: 7782-49-2<br>EINECS: 231-957-4<br>Index number: 034-001-00-2 | selenium<br>T R23/25<br>R33-53<br>Acute Tox. 3, H301; Acute Tox. 3, H331<br>STOT RE 2, H373<br>Aquatic Chronic 4, H413 |
| CAS: 13463-67-7<br>EINECS: 236-675-5 | titanium dioxide<br>substance with a Community workplace exposure limit |
| CAS: 7727-43-7<br>EINECS: 231-784-4 | barium sulphate, natural<br>substance with a Community workplace exposure limit |
| CAS: 7440-42-8<br>EINECS: 231-151-2 | boron |
| CAS: 7778-74-7<br>EINECS: 231-912-9<br>Index number: 017-008-00-5 | potassium perchlorate<br>Xn R22; O R9<br>Ox. Sol. 1, H271<br>Acute Tox. 4, H302 |

(Contd. on page 5)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 4)

| | |
|---|---|
| CAS: 4682-03-5 | diazodinitro phenol (DDNP)<br>Xi R36/38; Xi R43; E R3<br>Unst. Expl., H200<br>Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 |
| CAS: 9004-70-0<br>EC number: 603-037-0 | Nitrocellulose, colloided, granular<br>E R3<br>Expl. 1.1, H201 |

· **SVHC**

| | |
|---|---|
| 13424-46-9 | lead diazide |
| 7758-97-6 | lead chromate |
| 1314-41-6 | orange lead |

· **Additional information:**
For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.
For the wording of the listed risk phrases refer to section 16.

## SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:**
Unlikely route of exposure.
Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Generally the product does not irritate the skin.
Wash with soap and water.
If skin irritation is experienced, consult a doctor.
· **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Unlikely route of exposure.
Do not induce vomiting; call for medical help immediately.
· **4.2 Most important symptoms and effects, both acute and delayed** Blast injury if mishandled.
· **Hazards** Danger of blast or crush-type injuries.
· **4.3 Indication of any immediate medical attention and special treatment needed**
Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

## SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** DO NOT fight fire when fire reaches explosives.
· **For safety reasons unsuitable extinguishing agents:** None.
· **5.2 Special hazards arising from the substance or mixture**
DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Can explode or detonate under fire

(Contd. on page 6)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 5)

conditions. Burning material may produce toxic vapors. It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications.
Explosive; mass explosion hazard.

· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Eliminate all ignition sources if safe to do so.
Flammability Classification: (defined by 29 CFR 1910.1200) Explosive. Can explode under fire conditions. Individual devices will randomly explode. Mass explosion of multiple devices is possible under certain conditions. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2012 Emergency response Guidebook for further information.

## SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Remove persons from danger area.
Wear protective clothing.
Ensure adequate ventilation
Protect from heat.
Isolate area and prevent access.
· **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.
· **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Dispose unusable material as waste according to item 13.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Open and handle receptacle with care.
Handle with care. Avoid jolting, friction and impact.
Use only in well ventilated areas.
Do not subject to grinding/shock/friction.
· **Information about fire - and explosion protection:**
Protect from heat.
Prevent impact and friction.
Emergency cooling must be available in case of nearby fire.

(Contd. on page 7)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 6)

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Avoid storage near extreme heat, ignition sources or open flame.
· **Information about storage in one common storage facility:** Store away from foodstuffs.
· **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Keep away from heat.
· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

| · **Ingredients with limit values that require monitoring at the workplace:** | |
|---|---|
| **13424-46-9 lead diazide** | |
| PEL (USA) | Long-term value: 0,05 mg/m³<br>as Pb; See 29 CFR 1910,1025 |
| REL (USA) | Long-term value: 0,05* mg/m³<br>as Pb;*8-hr TWA; See Pocket Guide App. C |
| TLV (USA) | Long-term value: 0,05 mg/m³<br>as Pb; BEI |
| EL (Canada) | Long-term value: 0,05 mg/m³<br>as Pb; IARC 2A, R |
| **10294-40-3 barium chromate** | |
| PEL (USA) | Long-term value: 0,005* mg/m³<br>Ceiling limit: 0,1** mg/m³<br>*as Cr(VI) **as CrO3; see 29 CFR 1910,1026 |
| REL (USA) | Long-term value: 0,0002 mg/m³<br>as Cr; See Pocket Guide Apps. A and C |
| TLV (USA) | Long-term value: 0,01 mg/m³<br>as Cr |
| EL (Canada) | Long-term value: 0,01 mg/m³<br>as Cr; ACGIH A1 IARC 1 |
| **7440-36-0 antimony** | |
| PEL (USA) | Long-term value: 0,5 mg/m³<br>as Sb |
| REL (USA) | Long-term value: 0,5 mg/m³<br>as Sb |
| TLV (USA) | Long-term value: 0,5 mg/m³<br>as Sb |

(Contd. on page 8)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 7)

| | |
|---|---|
| EL (Canada) | Long-term value: 0,5 mg/m³ |
| EV (Canada) | Long-term value: 0,5 mg/m³ |
| **7758-97-6 lead chromate** | |
| IOELV (EU) | Long-term value: 2 mg/m³<br>as Cr |
| PEL (USA) | Long-term value: 0,005* mg/m³<br>Ceiling limit: 0,1** mg/m³<br>*as Cr(VI) **as CrO3; see 29 CFR 1910,1026 |
| REL (USA) | Long-term value: 0,0002 mg/m³<br>as Cr; See Pocket Guide Apps. A and C |
| TLV (USA) | Long-term value: 0,05* 0,012** mg/m³<br>*as Pb; BEI ; **as Cr |
| EL (Canada) | Long-term value: 0,05* 0,012** mg/m³<br>ACIGH A2, IARC 2A; R; *as Pb;**as Cr |
| EV (Canada) | Long-term value: 0,012* 0,05** mg/m³<br>*as Cr, **as Pb |
| **7440-33-7 tungsten** | |
| PEL (USA) | and insoluble compounds, as We |
| REL (USA) | Short-term value: 10 mg/m³<br>Long-term value: 5 mg/m³<br>as W |
| TLV (USA) | Short-term value: 10 mg/m³<br>Long-term value: 5 mg/m³<br>as W |
| EL (Canada) | Short-term value: 10 mg/m³<br>Long-term value: 5 mg/m³<br>as W |
| EV (Canada) | Short-term value: 10* 3** mg/m³<br>Long-term value: 5* 1** mg/m³<br>(as tungsten; compds.:*water-insol.;**water-sol. |
| **7440-21-3 silicon** | |
| PEL (USA) | Long-term value: 15* 5** mg/m³<br>*total dust **respirable fraction |
| REL (USA) | Long-term value: 10* 5** mg/m³<br>*total dust **respirable fraction |
| TLV (USA) | TLV withdrawn |
| EL (Canada) | Long-term value: 10* 3** mg/m³<br>*total dust;**respirable fraction |
| EV (Canada) | Long-term value: 10 mg/m³<br>total dust |

(Contd. on page 9)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 8)

| | |
|---|---|
| **1314-41-6 orange lead** | |
| PEL (USA) | Long-term value: 0,05 mg/m³<br>as Pb; See 29 CFR 1910,1025 |
| REL (USA) | Long-term value: 0,05* mg/m³<br>as Pb;*8-hr TWA; See Pocket Guide App. C |
| TLV (USA) | Long-term value: 0,05 mg/m³<br>as Pb; BEI |
| EL (Canada) | Long-term value: 0,05 mg/m³<br>as Pb; IARC 2A, R |
| EV (Canada) | Long-term value: 0,05 mg/m³<br>as Pb, Skin (organic compounds) |
| **7782-49-2 selenium** | |
| PEL (USA) | Long-term value: 0,2 mg/m³<br>as Se |
| REL (USA) | Long-term value: 0,2 mg/m³<br>as Se |
| TLV (USA) | Long-term value: 0,2 mg/m³<br>as Se |
| EL (Canada) | Long-term value: 0,1 mg/m³ |
| EV (Canada) | Long-term value: 0,2 mg/m³ |
| **13463-67-7 titanium dioxide** | |
| PEL (USA) | Long-term value: 15* mg/m³<br>*total dust |
| REL (USA) | See Pocket Guide App. A |
| TLV (USA) | Long-term value: 10 mg/m³<br>withdrawn from NIC |
| EL (Canada) | Long-term value: 10* 3** mg/m³<br>*total dust;**respirable fraction; IARC 2B |
| EV (Canada) | Long-term value: 10 mg/m³<br>total dust |
| **7727-43-7 barium sulphate, natural** | |
| PEL (USA) | Long-term value: 15* 5** mg/m³<br>*total dust **respirable fraction |
| REL (USA) | Long-term value: 10* 5** mg/m³<br>*total dust **respirable fraction |
| TLV (USA) | Long-term value: 5* mg/m³<br>*inhalable fraction; E |
| EL (Canada) | Long-term value: 10* 3** mg/m³<br>*total dust, **respirable fraction |
| EV (Canada) | Long-term value: 10 mg/m³<br>total dust |

· **DNELs** No further relevant information available.

(Contd. on page 10)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 9)

· **PNECs** No further relevant information available.

| · **Ingredients with biological limit values:** | |
|---|---|
| **13424-46-9 lead diazide** | |
| BEI (USA) | 30 µg/100 ml<br>Medium: blood<br>Time: not critical<br>Parameter: Lead |
| **10294-40-3 barium chromate** | |
| BEI (USA) | 25 µg/L<br>Medium: urine<br>Time: end of shift at end of workweek<br>Parameter: Total chromium (fume)<br><br>10 µg/L<br>Medium: urine<br>Time: increase during shift<br>Parameter: Total chromium (fume) |
| **7758-97-6 lead chromate** | |
| BEI (USA) | 30 µg/100 ml<br>Medium: blood<br>Time: not critical<br>Parameter: Lead<br><br>10 µg/100 ml<br>Medium: blood<br>Time: not critical<br>Parameter: Lead (women of child bearing potential) |
| **1314-41-6 orange lead** | |
| BEI (USA) | 30 µg/100 ml<br>Medium: blood<br>Time: not critical<br>Parameter: Lead |

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
· **Respiratory protection:**
Not required under normal conditions of use.
Respiratory protection may be required after product use.
· **Protection of hands:**
Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

(Contd. on page 11)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 10)

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Safety glasses

Face protection
· **Body protection:** Impervious protective clothing
· **Limitation and supervision of exposure into the environment**
No further relevant information available.
· **Risk management measures**
Organizational measures should be in place for all activities involving this product.

## SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

| | |
|---|---|
| **Form:** | Solid material |
| **Colour:** | According to product specification |
| · **Odour:** | Odourless |
| · **Odour threshold:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Change in condition** | |
| **Melting point/Melting range:** | Not Determined. |
| **Boiling point/Boiling range:** | Undetermined. |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not determined. |
| · **Auto/Self-ignition temperature:** | Not determined. |
| · **Decomposition temperature:** | Not determined. |
| · **Self-igniting:** | Product is not self-igniting. |
| · **Danger of explosion:** | Risk of explosion by shock, friction, fire or other sources of ignition. |
| · **Explosion limits:** | |
| **Lower:** | Not determined. |

(Contd. on page 12)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 11)

| | |
|---|---|
| **Upper:** | Not determined. |
| · **Vapour pressure:** | Not applicable. |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with water:** | Variable, dependent upon product composition and packaging. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **9.2 Other information** | No further relevant information available. |

## SECTION 10: Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
· **10.3 Possibility of hazardous reactions**
Danger of explosion.
Toxic fumes may be released if heated above the decomposition point.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Leadoxide vapour
Nitrogen oxides
Chlorine compounds
Hydrocarbons
Toxic metal oxide smoke
Danger of forming toxic pyrolysis products.

## SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**

| · **LD/LC50 values relevant for classification:** | | |
|---|---|---|
| **7758-97-6 lead chromate** | | |
| Oral | LD50 | 12000 mg/kg (mouse) |

(Contd. on page 13)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 12)

| 7782-49-2 selenium | | |
|---|---|---|
| Oral | LD50 | 6700 mg/kg (rat) |

· **Primary irritant effect:**
· **on the skin:**
Not a skin irritant in unused form. Vapors/particles from used product are possibly irritating to skin.
· **on the eye:**
Not an eye irritant in unused form. Vapors/particles from used product are possibly irritating to eyes.
· **Sensitisation:** No sensitising effects known.
· **Subacute to chronic toxicity:** No further relevant information available.
· **Acute effects (acute toxicity, irritation and corrosivity):** Danger of blast or crush-type injuries.
· **Repeated dose toxicity:** No further relevant information available.

## SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** Toxic for aquatic organisms
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** May be accumulated in organism
· **12.4 Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary
Very toxic for aquatic organisms
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 14)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 13)

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

· **14.1 UN-Number**
· **DOT, ADR, IMDG** UN0030
· **IATA** FORBIDDEN
· **14.2 UN proper shipping name**
· **DOT** Detonators, Electric
· **ADR** 0030, DETONATORS, ELECTRIC
· **IMDG** DETONATORS, ELECTRIC
· **IATA** FORBIDDEN
· **14.3 Transport hazard class(es)**

· **DOT**

· **Class** 1.1
· **Label** 1.1

· **ADR, IMDG**

· **Class** 1.1
· **Label** 1.1B

· **IATA**
· **Class** FORBIDDEN
· **Label** -
· **14.4 Packing group**
· **DOT, ADR, IMDG** II
· **IATA** FORBIDDEN
· **14.5 Environmental hazards:**
· **Marine pollutant:** Yes
· **Special marking (IATA):** FORBIDDEN BY AIR.
· **14.6 Special precautions for user** Not applicable.
· **EMS Number:** F-B, S-
· **Segregation groups** Lead and its compounds

(Contd. on page 15)

# Safety Data Sheet
**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 14)

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**
· **Limited quantities (LQ)** 0
· **Excepted quantities (EQ)** Code: E0
Not permitted as Excepted Quantity
· **Tunnel restriction code** (1)

· **IATA** FORBIDDEN.
· **UN "Model Regulation":** UN0030, DETONATORS, ELECTRIC, 1.1B, II

## SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

· **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 13424-46-9 | lead diazide |
| 10294-40-3 | barium chromate |
| 7440-36-0 | antimony |
| 7758-97-6 | lead chromate |
| 1314-41-6 | orange lead |
| 7782-49-2 | selenium |
| 7727-43-7 | barium sulphate, natural |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 13424-46-9 | lead diazide |
| 10294-40-3 | barium chromate |
| 7758-97-6 | lead chromate |
| 1314-41-6 | orange lead |
| 13463-67-7 | titanium dioxide |

· **Chemicals known to cause reproductive toxicity for females:**

| | |
|---|---|
| 10294-40-3 | barium chromate |
| 7758-97-6 | lead chromate |

(Contd. on page 16)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 15)

· **Chemicals known to cause reproductive toxicity for males:**

| | |
|---|---|
| 10294-40-3 | barium chromate |
| 7758-97-6 | lead chromate |

· **Chemicals known to cause developmental toxicity:**

| | |
|---|---|
| 13424-46-9 | lead diazide |
| 10294-40-3 | barium chromate |
| 7758-97-6 | lead chromate |

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 13424-46-9 | lead diazide | B2 |
| 10294-40-3 | barium chromate | A(inh), D(oral), K/L(inh), CBD(oral) |
| 7758-97-6 | lead chromate | K |
| 1314-41-6 | orange lead | B2 |
| 7782-49-2 | selenium | D |
| 7727-43-7 | barium sulphate, natural | D, CBD(inh), NL(oral) |
| 7440-42-8 | boron | I (oral) |
| 7778-74-7 | potassium perchlorate | NL |

· **IARC (International Agency for Research on Cancer)**

| | | |
|---|---|---|
| 13424-46-9 | lead diazide | 2A |
| 10294-40-3 | barium chromate | 1 |
| 7758-97-6 | lead chromate | 1 |
| 1314-41-6 | orange lead | 2A |
| 7782-49-2 | selenium | 3 |
| 13463-67-7 | titanium dioxide | 2B |

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 13424-46-9 | lead diazide | A3 |
| 10294-40-3 | barium chromate | A1 |
| 7758-97-6 | lead chromate | A2 |
| 1314-41-6 | orange lead | A3 |
| 13463-67-7 | titanium dioxide | A4 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

| | |
|---|---|
| 10294-40-3 | barium chromate |
| 7758-97-6 | lead chromate |
| 13463-67-7 | titanium dioxide |

· **Canada**

· **Canadian Domestic Substances List (DSL)**

Some components are listed on the NDSL.

Not all ingredients listed.

(Contd. on page 17)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 16)

| · **Canadian Ingredient Disclosure list (limit 0.1%)** | |
|---|---|
| 10294-40-3 | barium chromate |
| 7758-97-6 | lead chromate |
| 7782-49-2 | selenium |

| · **Canadian Ingredient Disclosure list (limit 1%)** | |
|---|---|
| 7440-36-0 | antimony |
| 7440-33-7 | tungsten |

· **Other regulations, limitations and prohibitive regulations**
This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

| · **Substances of very high concern (SVHC) according to REACH, Article 57** | |
|---|---|
| 13424-46-9 | lead diazide |
| 7758-97-6 | lead chromate |
| 1314-41-6 | orange lead |

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

Disclaimer
Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, the information contained herein, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. The information contained herein is provided for reference purposes only and is intended only for persons having relevant technical skills. Because conditions and manner of use are outside of our control, the user is responsible for determining the conditions of safe use of the product. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product or information. Under no circumstances shall either Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

· **Relevant phrases**
H200 Unstable explosives.
H201 Explosive; mass explosion hazard.
H228 Flammable solid.
H271 May cause fire or explosion; strong oxidiser.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H350 May cause cancer.

(Contd. on page 18)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 17)

H360Df May damage the unborn child. Suspected of damaging fertility.
H360FD May damage fertility. May damage the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

R11 Highly flammable.
R20/22 Harmful by inhalation and if swallowed.
R22 Harmful if swallowed.
R23/25 Toxic by inhalation and if swallowed.
R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R33 Danger of cumulative effects.
R36/38 Irritating to eyes and skin.
R43 May cause sensitisation by skin contact.
R45 May cause cancer.
R48/23/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53 May cause long-term adverse effects in the aquatic environment.
R60 May impair fertility.
R61 May cause harm to the unborn child.
R62 Possible risk of impaired fertility.
R9 Explosive when mixed with combustible material.

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Expl. 1.1: Explosives, Division 1.1
Unst. Expl.: Explosives, Unstable explosives
Flam. Sol. 2: Flammable solids, Hazard Category 2
Ox. Sol. 1: Oxidising Solids, Hazard Category 1
Acute Tox. 3: Acute toxicity, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Carc. 1A: Carcinogenicity, Hazard Category 1A

(Contd. on page 19)

# Safety Data Sheet

**according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

**Trade name: Detonators, Electric (Class 1.1B)**

(Contd. of page 18)

Carc. 1B: Carcinogenicity, Hazard Category 1B
Repr. 1A: Reproductive toxicity, Hazard Category 1A
Repr. 1A: Reproductive toxicity, Hazard Category 1A
STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
Aquatic Chronic 4: Hazardous to the aquatic environment - Chronic Hazard, Category 4

· **Sources**

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