Safety Data Sheet

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS
Trade Name: ELECTRIC SUPER™ (Detonators, Class 1.4B)

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.
6440 S. Millrock Drive, Suite 150
Salt Lake City, Utah 84121
Phone: 801-364-4800 Fax 801-321-6703
E-Mail: dnna.hse@am.dynonobel.com
www.dynonobel.com

SDS #: 1178
Date: 07/20/2020
Supersedes: 11/05/2017

1.1 Product Identifier

Trade Name: ELECTRIC SUPER™ (Detonators, Class 1.4B)
Article Number: 1178
Other Product Identifiers:

ELECTRIC SUPER™ MS
ELECTRIC SUPER™ LP
ELECTRIC SUPER™ COAL
ELECTRIC SUPER™ STARTER
ELECTRIC SUPER™ SEISMIC

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.
Uses advised against: Contact manufacturer

1.3 Emergency Telephone Number

CHEMTREC **1-800-424-9300** **(US/Canada)**
+01 703-527-3887 **(International)**

SECTION 2 – HAZARD(S) IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification According to Regulation (EC) No 1272/2008

Classifications listed are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).
Expl. 1.4 H204 Fire or projection hazard.

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 : Warning
Hazard-determining components of labelling : perhydro-1,3,5-trinitro-1,3,5-triazine (RDX)
2,2',4,4',6,6'-hexanitrostilbene (HNS)
lead diazide / lead azide

	pentaerythritol tetranitrate (PETN) barium chromate orange lead
Hazard Statements	: H204 - Fire or projection hazard.
Precautionary Statements	: P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P240 - Ground/bond container and receiving equipment. P250 - Do not subject to grinding/shock/friction. P280 - Wear eye protection. P370+P380 - In case of fire: Evacuate area. P372 - Explosion risk in case of fire. P373 - DO NOT fight fire when fire reaches explosives. 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	: Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

2.3 Other Hazards: There are no other hazards not otherwise classified that have been identified.

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 they are dealing with a powerful force and that various devices and methods have been developed to assist them in directing this force. They should realize that this force, if misdirected, may either kill or injure both themself and their 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, they should consult the manufacturer before use.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Components:		
CAS: 7440-66-6 EINECS: 231-175-3 Index number: 030-001-01-9 Reg.nr.: 01-2119467174-37-XXXX	zinc powder -zinc dust (stabilized) Aquatic Acute 1, H400; Aquatic Chronic 1, H410	45-55%
CAS: 121-82-4 EINECS: 204-500-1 Reg.nr.: 01-2119990795-17-XXXX	perhydro-1,3,5-trinitro-1,3,5-triazine (RDX) Expl. 1.1, H201 Acute Tox. 3, H301	0-15%
CAS: 20062-22-0 EINECS: 243-494-5	2,2',4,4',6,6'-hexanitrostilbene (HNS) Expl. 1.1, H201	0-15%

	Acute Tox. 3, H301	
CAS: 78-11-5 EINECS: 201-084-3 Index number: 603-035-00-5 Reg.nr.: 01-2119557827-23-XXXX	pentaerythritol tetranitrate (PETN) Unst. Expl., H200	0-15%
CAS: 13424-46-9 EINECS: 236-542-1 Index number: 082-003-00-7 Reg.nr.: 01-2119475503-38-XXXX	lead diazide / lead azide Unst. Expl., H200 Carc. 1B, H350; Repr. 1A, H360Df; STOT RE 2, H373 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 Acute Tox. 4, H302; Acute Tox. 4, H332	0-2%
CAS: 1314-41-6 EINECS: 215-235-6 Index number: 082-001-00-6 Reg.nr.: 01-2119517589-27-XXXX	orange lead Repr. 1A, H360Df; STOT RE 2, H373 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 Acute Tox. 4, H302; Acute Tox. 4, H332	0-2%
CAS: 7440-42-8 EINECS: 231-151-2 Reg.nr.: 01-2119978866-12-XXXX	boron	0-2%
CAS: 7440-21-3 EINECS: 231-130-8 Reg.nr.: 01-2119480401-47-XXXX	silicon Flam. Sol. 2, H228	0-2%
CAS: 10294-40-3 EINECS: 233-660-5 Index number: 056-002-00-7	barium chromate Acute Tox. 4, H302; Acute Tox. 4, H332	0-2%
SVHC		
13424-46-9 lead diazide / lead azide		
1314-41-6 orange lead		

Additional information: For the listed ingredient(s), the identity and/or exact percentages are being withheld as a trade secret.
For the wording of the listed Hazard Statements refer to section 16.

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures
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: 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 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.
Product may explode if burned in confined space. Individual cartridges may explode. Mass explosion of many cartridges at once is unlikely.
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. W ill not mass explode if multiple devices are involved. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2008 Emergency response Guidebook for further information.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures
Ensure adequate ventilation
Wear protective clothing.
Protect from heat.
Evacuate area.
Isolate area and prevent access.
6.2 Environmental Precautions
Avoid release to the environment.
6.3 Methods and Material for Containment and Cleaning Up
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
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
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.
Emergency cooling must be available in case of nearby fire.

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 in cool, dry conditions in well-sealed receptacles.
Keep away from heat.

7.3 Specific End Use(s): No further relevant information available.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Ingredients with Limit Values that Require Monitoring at the Workplace:	
121-82-4 perhydro-1,3,5-trinitro-1,3,5-triazine (RDX)	
REL (USA)	Short-term value: 3 mg/m³ Long-term value: 1.5 mg/m³ Skin
TLV (USA)	Long-term value: 0.5 mg/m³ Skin
13424-46-9 lead diazide / lead azide	
PEL (USA)	Long-term value: 0.05 mg/m³ as Pb; See 29 CFR 1910.1025
REL (USA)	Long-term value: 0.05* mg/m³ as Pb; *8-hr TWA; See Pocket Guide App. C
TLV (USA)	Long-term value: 0.05 mg/m³ as Pb; BEI
1314-41-6 orange lead	
BOELV (EU)	Long-term value: 0.15 mg/m³ as Pb
PEL (USA)	Long-term value: 0.05 mg/m³ as Pb; See 29 CFR 1910.1025
REL (USA)	Long-term value: 0.05* mg/m³ as Pb; *8-hr TWA; See Pocket Guide App. C
TLV (USA)	Long-term value: 0.05 mg/m³ as Pb; BEI
7440-21-3 silicon	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV (USA)	TLV withdrawn
10294-40-3 barium chromate	
PEL (USA)	Long-term value: 0.005* mg/m³ Ceiling limit: 0.1** mg/m³ *as Cr(VI) **as CrO3; see 29 CFR 1910.1026
REL (USA)	Long-term value: 0.0002 mg/m³ as Cr; See Pocket Guide Apps. A and C
TLV (USA)	Long-term value: 0.01 mg/m³ as Cr

DNELs: No further relevant information available.**NECs:** No further relevant information available.

Ingredients with biological limit values:	
13424-46-9 lead diazide / lead azide	
BEI (USA)	30 µg/100 ml Medium: blood Time: not critical Parameter: Lead
1314-41-6 orange lead	
BEI (USA)	30 µg/100 ml Medium: blood Time: not critical Parameter: Lead
10294-40-3 barium chromate	
BEI (USA)	25 µg/L Medium: urine Time: end of shift at end of workweek Parameter: Total chromium (fume) 10 µg/L Medium: urine Time: increase during shift Parameter: Total chromium (fume)

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.
Eye Protection:

Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.
Body Protection: Protective work 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

Appearance		
Form	:	Solid material
Colour	:	According to product specification
Odour	:	Odourless
Odour Threshold	:	Not determined.
pH-Value	:	Not applicable.

Melting point/freezing point	:	Not determined.
Initial boiling point and boiling range	:	Not determined.
Flash point	:	Not applicable.
Flammability (solid, gas)	:	Fire or projection hazard.
Auto/Self-ignition temperature	:	Not determined.
Decomposition temperature	:	Not determined.
Explosive properties	:	Heating may cause an explosion.
Explosion limits		
Lower	:	Not determined.
Upper	:	Not determined.
Vapour pressure	:	Not applicable.
Density		
Relative density	:	Not determined.
Vapour density	:	Not applicable.
Evaporation rate	:	Not applicable.
Solubility in / Miscibility with water	:	Insoluble.
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: No further relevant information available.

10.2 Chemical Stability:

Thermal Decomposition / Conditions to be Avoided: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. - No smoking.

10.3 Possibility of Hazardous Reactions: Fire or projection hazard.
Toxic fumes may be released if heated above the decomposition point.

10.4 Conditions to Avoid: Excessive heat.

10.5 Incompatible Materials: Oxidisers, strong bases, strong acids

10.6 Hazardous Decomposition Products: Carbon monoxide and carbon dioxide
Hydrocarbons
Leadoxide vapour
Nitrogen oxides
Chlorine compounds
Danger of forming toxic pyrolysis products.
Toxic metal oxide smoke

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification: None.

Primary irritant effect

Skin corrosion/irritation:
Not a skin irritant in unused form. Vapours/particles from used product are possibly irritating to skin.

Serious eye damage/irritation:
Not an eye irritant in unused form. Vapours/particles from used product are possibly irritating to eyes.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Carcinogenic categories

IARC (International Agency for Research on Cancer):	
10294-40-3 barium chromate	1
7758-97-6 lead chromate	1
13424-46-9 lead diazide / lead azide	2A
1314-41-6 orange lead	2A
NTP (National Toxicology Program):	
13424-46-9 lead diazide / lead azide	R
1314-41-6 orange lead	R
10294-40-3 barium chromate	K
OSHA-Ca (Occupational Safety & Health Administration):	
None of the ingredients are listed.	

Probable routes of exposure: Skin contact.
Acute effects (acute toxicity, irritation and corrosivity): Danger of blast or crush-type injuries.
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure: Based on available data, the classification criteria are not met.
STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.

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: The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment cannot 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. Damaged materials pose a danger to anyone in the immediate area; consult experts for disposal of damaged products.
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. 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, IATA : UN0255
14.2 UN Proper Shipping Name
DOT, ADR, IMDG, IATA : DETONATORS, ELECTRIC
14.3 Transport Hazard Class(es)
DOT
Class : 1.4
Label : 1.4B

ADR, IMDG, IATA
Class : 1.4
Label : 1.4B

14.4 Packing group : This UN-number is not assigned a packing group.
14.5 Environmental Hazards :
Marine Pollutant : No
14.6 Special Precautions for User : Not applicable.
EMS Number : F-B,S-X
Segregation Groups : Lead and its compounds
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not applicable.
Transport/Additional information:
IATA

Cargo Aircraft Only.

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)

All ingredients are listed.	
TSCA (Toxic Substances Control Act)	
All ingredients are listed.	
Proposition 65 (California)	
Chemicals known to cause cancer	
13424-46-9 lead diazide / lead azide	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
1314-41-6 orange lead	
Chemicals known to cause reproductive toxicity for females	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
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 / lead azide	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
Carcinogenic Categories	
EPA (Environmental Protection Agency)	
13424-46-9 lead diazide / lead azide	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
7440-42-8 boron	I (oral)
IARC (International Agency for Research on Cancer)	
13424-46-9 lead diazide / lead azide	2A
10294-40-3 barium chromate	1
7758-97-6 lead chromate	1
1314-41-6 orange lead	2A
NIOSH-Ca (National Institute for Occupational Safety and Health)	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
Canadian Domestic Substances List (DSL)	
All ingredients listed on DSL or NDSL.	
Other regulations, limitations and prohibitive regulations	
Some components are listed on the NDSL.	
All ingredients are listed.	
Substances of very high concern (SVHC) according to REACH, Article 57	
13424-46-9 lead diazide / lead azide	
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

Relevant Phrases

- H200 Unstable explosives.
- H201 Explosive; mass explosion hazard.
- H228 Flammable solid.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H332 Harmful if inhaled.
- H350 May cause cancer.
- H360Df May damage the unborn child. Suspected of damaging fertility.
- 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.

Abbreviations and Acronyms:

- ADR: 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
- 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)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistant, Bio-accumulable, Toxique
- SVHC: Substances of Very High Concern
- vPvB: very Persistent and very Bioaccumulative
- NIOSH: l'Institut national de recherche sur la sécurité et la santé au travail / National Institute for Occupational Safety (États-Unis)
- OSHA: Occupational Safety & Health Administration
- Expl. 1.1: Explosives – Division 1.1
- Expl. 1.4: Explosives – Division 1.4
- Unst. Expl.: Explosives – Unstable explosive
- Flam. Sol. 2: Flammable solids – Category 2
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Carc. 1B: Carcinogenicity – Category 1B

- Repr. 1A: Reproductive toxicity – Category 1A
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
- Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Sources

Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed.,
ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers

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