Safety Data Sheet

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS
Trade Name: Detonators, Electronic (Class 1.1B)

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

Name, Address, and Telephone of the Responsible Party

SDS-DNNA-DNIS-TRON.0001
SDS #: 1152-1.1
Date: 07/20/2020
Supersedes: 05/22/2015

Dyno Nobel Inc.
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1.1 Product Identifier
Trade Name: Detonators, Electronic (Class 1.1B)
Article Number: 1152
Other Product Identifiers:

DigiShot®
DigiShot® Plus
GeoShot
SmartShot™
DriftShot™
DriftShot Starter™

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. 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 also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).


exploding bomb

Expl. 1.1B 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.
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) lead diazide lead
Hazard Statements	: H201 Explosive; mass explosion hazard.
Precautionary Statements	: P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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. P273 - Avoid release to the environment. 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. EUH209 Can become highly flammable in use.
Hazard Description	
WHMIS-Symbols	: Explosive products are not classified under WHMIS.
NFPA Ratings (scale 0 - 4)	: Not available.
HMIS-Ratings (scale 0 - 4)	: Warning: Contains lead salt(s). Long-term health hazard. Not available.

HMIS Long Term Health Hazard Substances
7439-92-1 lead
13424-46-9 lead diazide

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

3.1 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:	
CAS: 7439-92-1 EINECS: 231-100-4	lead T Repr. Cat. 1 R60-61-48/23/25; N R50/53
	Repr. 1A, H360FD; STOT RE 1, H372 Aquatic Acute 1, H400; Aquatic Chronic 1, H410
CAS: 78-11-5 EINECS: 201-084-3 Index number: 603-035-00-5	pentaerythritol tetranitrate (PETN) E R3
	Unst. Expl., H200
CAS: 13424-46-9 EINECS: 236-542-1 Index number: 082-003-00-7	lead diazide T Repr. Cat. 1, 3 R61; Xn R62-20/22; E R3; N R50/53 R33
	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

SVHC
13424-46-9 lead diazide

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.
Rinse out mouth and then drink plenty of water.
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 – FIRE-FIGHTING 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.
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.
Ensure adequate ventilation
Wear protective clothing.
Protect from heat.
Evacuate area.
Isolate area and prevent access.

6.2 Environmental Precautions
No special measures required.

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.
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:	
7439-92-1 lead	
PEL (USA)	Long-term value: 0,05* mg/m³ *see 29 CFR 1910,1025
REL (USA)	Long-term value: 0,05* mg/m³ *8-hr TWA,excl. lead arsenate;See PocketGuideApp.C
TLV (USA)	Long-term value: 0,05* mg/m³ *and inorganic compounds, as Pb; BEI
EL (Canada)	Long-term value: 0,05 mg/m³ R; IARC 2B
EV (Canada)	Long-term value: 0,05 mg/m³ as Pb, Skin (organic compounds)
13424-46-9 lead diazide	
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
EL (Canada)	Long-term value: 0,05 mg/m³ as Pb; IARC 2A, R

DNELs: No further relevant information available.
PNECs: No further relevant information available.

Ingredients with biological limit values:	
7439-92-1 lead	
BEI (USA)	30 µg/100 ml Medium: blood Time: not critical Parameter: Lead 10 µg/100 ml Medium: blood Time: not critical Parameter: Lead (women of child bearing potential)
13424-46-9 lead diazide	
BEI (USA)	30 µg/100 ml Medium: blood Time: not critical 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.
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 cannot 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)	:	Explosive; mass explosion hazard.
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.
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
Nitrogen oxides
Leadoxide vapour
Hydrocarbons

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1B Information on Toxicological Effects

Acute toxicity:

LD/LC50 values relevant for classification:

7439-92-1 lead

LD50 Oral	>2000 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: Not determined.

Subacute to Chronic Toxicity: No further relevant information available.

Additional Toxicological Information: May cause cancer.

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 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.
Uncleaned Packaging:
Recommendation: Disposal must be made according to official regulations.

SECTION 14 – TRANSPORT INFORMATION

14.1 UN-Number
DOT, ADR, IMDG : UN0511
IATA : FORBIDDEN
14.2 UN Proper Shipping Name
DOT : Detonators, Electronic
ADR : 0511, DETONATORS, ELECTRONIC
IMDG : DETONATORS, ELECTRONIC
IATA : FORBIDDEN
14.3 Transport Hazard Class(es)
DOT
Class : 1.1
Label : 1.1B

ADR, IMDG
Class : 1.1
Label : 1.1B

IATA
Class : FORBIDDEN
Label
14.4 Packing Group
DOT, ADR, IMDG :
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-S, B-
Segregation Groups : Lead and its compounds
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 (B1000C)
IATA	:	FORBIDDEN.
UN "Model Regulation"	:	UN0511, Detonators, Electronic 1.1B – ***May be shipped as UN0030, Detonators, Electric 1.1B until 04/30/2024***

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):	
7439-92-1 lead	
13424-46-9 lead diazide	
TSCA (Toxic Substances Control Act)	
All ingredients are listed.	
Proposition 65 (California)	
Chemicals known to cause cancer	
7439-92-1 lead	
13424-46-9 lead diazide	
Chemicals known to cause reproductive toxicity for females	
7439-92-1 lead	
Chemicals known to cause reproductive toxicity for males	
7439-92-1 lead	
Chemicals known to cause developmental toxicity	
7439-92-1 lead	
13424-46-9 lead diazide	
Carcinogenic Categories	
EPA (Environmental Protection Agency)	
7439-92-1 lead	B2
13424-46-9 lead diazide	B2
IARC (International Agency for Research on Cancer)	
7439-92-1 lead	2B
13424-46-9 lead diazide	2A
TLV (Threshold Limit Value established by ACGIH)	
7439-92-1 lead	A3
13424-46-9 lead diazide	A3
NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients are listed.	
Canada **Canadian Domestic Substances List (DSL)**	
All ingredients are listed.	
Canadian Ingredient Disclosure list (limit 0.1%)	
7439-92-1 lead	
Canadian Ingredient Disclosure list (limit 1%)	
None of the ingredients are listed.	

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

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

SECTION 16 – OTHER INFORMATION

Relevant Phrases

- H200 Unstable explosives.
- H302 Harmful if swallowed.
- H350 May cause cancer.
- 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.
- R20/22 Harmful by inhalation and if swallowed.
- R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R33 Danger of cumulative effects.
- 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.
- R60 May impair fertility.
- R61 May cause harm to the unborn child.
- R62 Possible risk of impaired fertility.

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. 1.1B: Explosives, Division 1.1B
- Unst. Expl.: Explosives, Unstable explosives
- Acute Tox. 4: Acute toxicity, Hazard Category 4
- 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

Sources
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