

Safety Data Sheet

According to: Appendix D, OSHA Hazard Communication Standard 29 CFR
§1910.1200

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Safety Data Sheet

According to: Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200
Trade Name: EZshot

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

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www.dynonobel.com

SDS #:

Date: 07/20/2020

Supersedes: 09/17/2018

1.1 Product Identifier

Trade Name: EZshot

Article Number:

1.2 Recommended Use of the Chemical and Restrictions on Use

Application Explosive detonator used in mining and commercial blasting applications.

Uses advised against No specific uses advised against are identified.

1.3 Emergency Telephone Number

CHEMTREC +1 800-424-9300 (USA)

CANUTEC +1 613-996-6666 (CANADA)

SECTION 2 – HAZARD(S) IDENTIFICATION

2.1 Classification of the Substance or Mixture

OSHA Regulatory Status This Product is Hazardous under the OSHA Hazard Communication Standard.

Comment(s) As supplied, this product is an article. Expl. 1.1 - H201 Explosive; mass explosion hazard. This set contains many components.

Physical hazards Expl. 1.1 - H201

Health hazards Not classified

Environmental hazards Not classified

Physiochemical Caution. Risk of explosion. Explosive; mass explosion hazard. Handle with care.

2.2 Label Elements

Hazard Pictograms



Signal Word

: Danger

Hazard Statements

: H201 - Explosive; mass explosion hazard.

Precautionary Statements

: P210 - Keep away from heat, sparks, open flames and hot surfaces. No smoking.

P230 - Keep wetted with water.

P240 - Ground/ bond container and receiving equipment.

P250 - Do not subject to grinding/ shock/ friction.

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.

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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 national regulations.
P501 - Dispose of contents/ container in accordance with national regulations.

2.3 Other Hazards

Results of PBT and vPvB Assessment

This product does not contain any substances classified as PBT or vPvB.

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: This set contains many components. The information below relates to the chemical components contained in the explosive item.

Dangerous components:	
CAS: 7778-74-7	Potassium perchlorate Ox. Sol. 1 - H271; Acute Tox. 4 - H302
CAS: 9004-70-0	Nitrocellulose Expl. 1.1 - H201
CAS: 2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine Expl. 1.1 - H201; Acute Tox. 4 - H302; Acute Tox. 3 - H311
CAS: 7440-67-7	Zirconium Pyr. Sol. 1 - H250; Water-react. 1 - H260
CAS: 78-11-5	Pentaerythritol tetranitrate Unst. Expl. - H200
CAS: 7439-93-2	Lithium Water-react. 1 - H260; Skin Corr. 1B - H314; Eye Dam. 1 - H318
CAS: 25721-38-4 M factor (Chronic) = 1	Lead picrate Expl. 1.1 - H201; Acute Tox. 3 - H301; Acute Tox. 3 - H311; Acute Tox. 3 - H331; Repr. 1A - H360; STOT RE 2 - H373; Aquatic Chronic 1 - H410
CAS: 7429-90-5	Aluminium powder (stabilised) Flam. Sol. 1 - H228; Water-react. 2 - H261
CAS: 51311-17-2	Polycarbonmonofluoride Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; STOT SE 3 - H335

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CAS: -	Lead picramate Unst. Expl. - H200; Acute Tox. 4 - H302; Acute Tox. 4 - H332; Repr. 1A - H360Df; STOT RE 2 - H373; Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410
CAS: 13424-46-9 M factor (Acute) = 1 M factor (Chronic) = 1	Lead diazide Unst. Expl. - H200; Acute Tox. 4 - H302; Acute Tox. 4 - H332; Repr. 1A - H360Df; STOT RE 2 - H373; Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

Additional Information: The full text for all hazard statements is displayed in Section 16.

Composition comments: The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information: Class 1: Explosive substances and articles. Get medical attention immediately. Show this Safety Data Sheet to the medical personnel. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

After Inhalation: Due to the physical nature of this product, exposure by this route is unlikely. If exposed to the chemical contents, then proceed as follows:

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Supply fresh air; consult doctor in case of complaints.

Ingestion: Due to the physical nature of this product, it is unlikely that ingestion will occur. If exposed to the chemical contents, then proceed as follows: If swallowed:

Rinse nose and mouth with water.

Give plenty of water to drink.

Do not induce vomiting unless under the direction of medical personnel.

If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

After Skin Contact: If exposed to the chemical contents, then proceed as follows:

Brush off loose particles from skin.

Wash skin thoroughly with soap and water.

After Eye Contact: Due to the physical nature of this product, exposure by this route is unlikely. If exposed to the chemical contents, then proceed as follows: If in eyes:

Rinse with water.

Remove any contact lenses and open eyelids wide apart.

Continue to rinse for at least 10 minutes. Do not rub eye.

Protection of first aiders: First aid personnel should wear appropriate protective equipment during any rescue.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

General information The information below relates to the chemical components contained in the explosive item. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Suspected of damaging fertility or the unborn child.

Inhalation May cause respiratory irritation.

Ingestion Harmful if swallowed. Stomach pain.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact May cause temporary eye irritation.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes for the doctor Treat symptomatically.

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SECTION 5 – FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Agents: The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

For Safety Reasons Unsuitable Extinguishing Agents: Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special Hazards Arising from the Substance or Mixture

Risk of explosion: 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.

Hazardous combustion products: Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Oxides of carbon. Carbon monoxide (CO).

5.3 Advice for Firefighters

Protective Equipment: Class 1: Explosive substances and articles. Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

Additional Information

Leave danger zone immediately. Evacuate area. No action shall be taken without appropriate training or involving any personal risk. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Fight fire remotely due to the risk of explosion. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special Protective Equipment: Class 1: Explosive substances and articles. Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

No action shall be taken without appropriate training or involving any personal risk.

No smoking, sparks, flames or other sources of ignition near spillage.

Evacuate area. Isolate area and prevent access.

6.2 Environmental Precautions

Avoid discharge into drains or watercourses or onto the ground.

Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3 Methods and Material for Containment and Cleaning Up

Wear protective clothing as described in Section 8 of this safety data sheet.

No smoking, sparks, flames or other sources of ignition near spillage.

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Use only non-sparking tools.

For waste disposal, see Section 13.

6.4 Reference to Other Sections

For personal protection, see Section 8.

See Section 11 for additional information on health hazards.

See Section 12 for additional information on ecological hazards.

For waste disposal, see Section 13.

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SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Usage precautions:

Read and follow manufacturer's recommendations.
Wear protective clothing as described in Section 8 of this safety data sheet.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from food, drink and animal feeding stuffs.
Use only non-sparking tools.
Handle with care.
Do not drop or knock.
Risk of explosion.
Do not handle until all safety precautions have been read and understood.
Do not handle broken packages without protective equipment.
Do not disassemble.

Advice on general occupational hygiene:

Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wash at the end of each work shift and before eating, smoking and using the toilet.
Change work clothing daily before leaving workplace.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage precautions:

Class 1: Explosive substances and articles. Store in accordance with local regulations. Licenced storage. Keep in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Ensure product is stored securely and cannot fall.

Storage class: Class 1: Explosive substances and articles. Compatibility group B.

7.3 Specific End Use(s): The identified uses for this product are detailed in Section 1.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Occupational exposure limits:

Ingredient comments: The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Ingredients with Limit Values that Require Monitoring at the Workplace:

Aluminium powder (stabilised)

Long-term exposure limit (8-hour TWA):
ACGIH 1 mg/m³ respirable fraction A4
Long-term exposure limit (8-hour TWA):
OSHA 5 mg/m³ respirable fraction as Al
Long-term exposure limit (8-hour TWA):
OSHA 15 mg/m³ total dust as Al

Lead diazide

Long-term exposure limit (8-hour TWA):
OSHA 0.05 mg/m³ as Pb
ACGIH = American Conference of Governmental Industrial Hygienists.
OSHA = Occupational Safety and Health Administration.
A4 = Not Classifiable as a Human Carcinogen.

8.2 Exposure Controls

Appropriate engineering controls:

Provide adequate ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation

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should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients. Take precautionary measures against static discharges.

Eye/face protection: Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with OSHA 1910.133.



Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Wear protective gloves made of the following material: Polyethylene.



Other skin and body protection: Wear suitable coveralls to prevent exposure to the skin. Wear fire/flammable resistant/retardant clothing. Wear anti-static protective clothing if there is a risk of ignition from static electricity.



Hygiene measures: Good personal hygiene procedures should be implemented. When using do not eat, drink or smoke.

Respiratory Protection: No specific requirements are anticipated under normal conditions of use. Provide adequate ventilation. Respiratory protection may be required if excessive airborne contamination occurs. Wear a respirator fitted with the following cartridge: Organic vapor + dust and mist filter.

Thermal hazards: If there is a risk of contact with hot product, all protective equipment worn should be suitable for use with high temperatures.

Environmental exposure controls: The product in its supplied state is not believed to present an exposure hazard.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Product comments: This set contains many components. The information below relates to the chemical components contained in the explosive item.

Appearance

Form	: Solid.
Color	: Not determined.
Odor	: Not determined.
Odor Threshold	: Not determined.
pH-Value	: Not determined.
Change in Condition	
Freezing point	: Not available.
Boiling point/Boiling range	: Not available.
Flash Point	: Not available.
Evaporation rate	: Not determined.
Evaporation factor	: Not determined.
Flammability (solid, gas)	: Not relevant.
Upper/lower flammability or explosive limits	: Not relevant.
Vapor pressure	: Not determined.

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Vapor density	Not determined.
Relative density	: Not determined.
Bulk density	: Not determined.
Solubility	: Not determined.
Partition coefficient	: Not determined.
Auto-ignition temperature	: Not relevant.
Decomposition Temperature	: Not relevant.
Viscosity	: Not determined.
Explosive properties	: Class 1: Explosive substances and articles. Compatibility group B.
Oxidizing properties	: Not considered to be oxidising.
9.2 Other Information	: No information required.

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

See the other subsections of this section for further details.

10.2 Chemical Stability

Risk of explosion by shock, friction, fire or other sources of ignition.

Stable at normal ambient temperatures and when used as recommended.

Stable under the prescribed storage conditions.

10.3 Possibility of Hazardous Reactions

Risk of explosion.

10.4 Conditions to Avoid

Protect from sunlight.

Avoid heat, flames and other sources of ignition.

Risk of explosion if heated under confinement.

Do not subject to grinding/ shock/ friction.

10.5 Materials to avoid

Strong oxidizing agents. Strong reducing agents.

10.6 Hazardous Decomposition Products

Does not decompose when used and stored as recommended.

Thermal decomposition or combustion products may include the following substances:

Harmful gases or vapors.

Carbon monoxide (CO).

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Toxicological effects: Exposure to components of the product are limited due to the physical form of the product.

The information below relates to the chemical components contained in the explosive item.

Acute toxicity:

LD50 Oral	Based on available data the classification criteria are not met.
LD50 Dermal	Based on available data the classification criteria are not met.
LD50 Inhalation	Based on available data the classification criteria are not met.
Skin corrosion/irritation:	Based on available data the classification criteria are not met.
Animal data	Based on available data the classification criteria are not met.
Serious eye damage/irritation	Based on available data the classification criteria are not met.
Respiratory sensitization	Based on available data the classification criteria are not met.

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Genotoxicity - in vitro	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.
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity development	Based on available data the classification criteria are not met.
Specific target organ toxicity - single exposure:	
STOT - single exposure:	Not classified as a specific target organ toxicant after a single exposure.
Specific target organ toxicity - repeated exposure:	
STOT - repeated exposure:	Based on available data the classification criteria are not met.
Aspiration hazard	
Aspiration hazard:	Based on available data the classification criteria are not met.
General information:	
	The information below relates to the chemical components contained in the explosive item. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Suspected of damaging fertility or the unborn child.
Inhalation:	May cause respiratory irritation.
Ingestion:	Harmful if swallowed. Stomach pain.
Skin contact:	Prolonged skin contact may cause temporary irritation.
Eye contact:	May cause temporary eye irritation.
Route of exposure:	Ingestion Inhalation Skin and/or eye contact
Target Organs:	No specific target organs known.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: Harmful to aquatic life with long lasting effects.

12.2 Persistence and Degradability

The product contains inorganic substances which are not biodegradable.

12.3 Bioaccumulative Potential

No data available on bioaccumulation.

Partition coefficient: Not determined.

12.4 Mobility in Soil

The product is water-soluble and may spread in water systems.

12.5 Other Adverse Effects

None known.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

General information: This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Empty containers or liners may retain some product residues and hence be potentially hazardous. Do not handle broken packages without protective equipment. Do not disassemble.

Disposal methods: Dispose of waste via a licensed waste disposal contractor. If broken/damaged and the contents exposed, submerge in water. Dispose of contents/container in accordance with local regulations.

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SECTION 14 – TRANSPORT INFORMATION

General: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Handle with care. Do not drop or knock. Ensure product is stored securely and cannot fall.

14.1 UN-Number

UN No. (TDG) : UN0360
UN No. (IMDG) : UN0360
UN No. (IATA) : FORBIDDEN
UN No. (DOT) : UN0360

14.2 UN Proper Shipping Name

Proper shipping name (TDG) : DETONATORS ASSEMBLIES, NON-ELECTRIC
Proper shipping name (IMDG) : DETONATORS ASSEMBLIES, NON-ELECTRIC
Proper shipping name (IATA) : FORBIDDEN
Proper shipping name (DOT) : DETONATORS ASSEMBLIES, NON-ELECTRIC

14.3 Transport Hazard Class(es)

DOT

Class : 1.1B
Label : 1.1B

TDG

Class : 1.1B
Label : 1.1B

IMDG

Class : 1.1B

IATA

Class : FORBIDDEN
Label : FORBIDDEN



Transport labels

14.4 Packing Group

Packing group (International) : Not applicable.
DOT packing group : II

14.5 Environmental Hazards

Environmentally Hazardous Substance : Hazardous Substance

14.6 Special Precautions for User: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. Compatibility group B: Article containing a primary explosive substance and not having two or more effective protective features. Some articles such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included, even though they do not contain primary explosives.

EMS Number: : F-B, S-X

SECTION 15 – REGULATORY INFORMATION

15.1 US Federal Regulations SARA

Section 302 (Extremely Hazardous Substances)

Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

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CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed or exempt.
SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.
SARA 313 Emission Reporting
The following ingredients are listed or exempt:
0% Lead diazide
1.0 % aluminium powder (stabilised)
CAA Accidental Release Prevention
None of the ingredients are listed or exempt.
FDA - Essential Chemical
None of the ingredients are listed or exempt.
FDA - Precursor Chemical
None of the ingredients are listed or exempt.
SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.
OSHA Highly Hazardous Chemicals
The following ingredients are listed or exempt:
Nitrocellulose
Threshold Quantity: 2500 lbs
US State Regulations
California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.
California Air Toxics "Hot Spots" (A-I)
The following ingredients are listed or exempt:
Aluminium powder (stabilised)
California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.
California Directors List of Hazardous Substances
The following ingredients are listed or exempt:
Aluminium powder (stabilised)
Massachusetts "Right To Know" List
The following ingredients are listed or exempt:
Potassium perchlorate
Lead diazide
Nitrocellulose Lithium
Aluminium powder (stabilised)
Rhode Island "Right To Know" List
The following ingredients are listed or exempt:
Potassium perchlorate
Nitrocellulose Lithium
Aluminium powder (stabilised)
Minnesota "Right To Know" List
The following ingredients are listed or exempt:
Aluminium powder (stabilised)
New Jersey "Right To Know" List
The following ingredients are listed or exempt:
Potassium perchlorate

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Nitrocellulose
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
Pentaerythritol tetranitrate Lithium
Aluminium powder (stabilised)
Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:
Potassium perchlorate
Nitrocellulose
Lithium
aluminium powder (stabilised)
Inventories
US - TSCA
All the ingredients are listed or exempt.
US - TSCA 12(b) Export Notification
The following ingredients are listed or exempt:
Pentaerythritol tetranitrate

SECTION 16 – OTHER INFORMATION

Revision Date	: 09/17/2018
Other Information	: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

Relevant Phrases

- H200 Unstable explosive.
- H201 Explosive; mass explosion hazard.
- H228 Flammable solid.
- H250 Catches fire spontaneously if exposed to air.
- H260 In contact with water releases flammable gases which may ignite spontaneously.
- H261 In contact with water releases flammable gases.
- H271 May cause fire or explosion; strong oxidizer.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H360 May damage fertility or the unborn child.
- 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:

- C.A.S.: Chemical Abstracts Service

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- E.C. No: European Commission number
- GHS: Globally Harmonised System
- OSHA: Occupational Safety and Health Administration
- WHMIS: Workplace Hazardous Materials Information System
- DOT: Department of Transport
- TDG: Transport of Dangerous Goods Regulations
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transport Association
- SARA: Superfund Amendments and Reauthorization Act
- CERCLA: Comprehensive Environmental
- EPCRA: Emergency Planning and Community Right-to-Know Act
- TSCA: Toxic Substances Control Act
- LD/LC/EC: Lethal Dose, Lethal Concentration/Effect Concentration for 50% of population
- NOEC: No Overall Effect Concentration
- NOEL: No Overall Effect Level
- REACH: Registration, Evaluation, Authorisation & Restriction of Chemicals
- STOT-RE: Single Target Organ Toxicity - Repeat Exposure
- STOT-SE: Specific Target Organ Toxicity Single Exposure
- PBT: Persistent, Bioaccumulative, Toxic
- vPvB: Very Persistent, Very Bioaccumulative.

Sources

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Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.

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www.dynonobel.com

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Supersedes: 09/17/2018

1.1 Product Identifier

Trade Name: EZshot
Article Number:

1.2 Recommended Use of the Chemical and Restrictions on Use

Application Explosive detonator used in mining and commercial blasting applications.
Uses advised against No specific uses advised against are identified.

1.3 Emergency Telephone Number

CHEMTREC +1 800-424-9300 (USA)
CANUTEC +1 613-996-6666 (CANADA)

SECTION 2 – HAZARD(S) IDENTIFICATION

2.1 Classification of the Substance or Mixture

OSHA Regulatory Status This Product is Hazardous under the OSHA Hazard Communication Standard.
Comment(s) As supplied, this product is an article. Expl. 1.1 - H201 Explosive; mass explosion hazard. This set contains many components.
Physical hazards Expl. 1.1 - H201
Health hazards Not classified
Environmental hazards Not classified
Physiochemical Caution. Risk of explosion. Explosive; mass explosion hazard. Handle with care.

2.2 Label Elements

Hazard Pictograms



Signal Word

: Danger

Hazard Statements

: H201 - Explosive; mass explosion hazard.

Precautionary Statements

: P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.

P230 Keep wetted with water.

P240 Ground/ bond container and receiving equipment.

P250 Do not subject to grinding/ shock/ friction.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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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 national regulations.
P501 Dispose of contents/ container in accordance with national regulations.

2.3 Other Hazards

Results of PBT and vPvB Assessment

This product does not contain any substances classified as PBT or vPvB.

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: This set contains many components. The information below relates to the chemical components contained in the explosive item.

Dangerous components:	
CAS: 7778-74-7	Potassium perchlorate Ox. Sol. 1 - H271; Acute Tox. 4 - H302
CAS: 9004-70-0	Nitrocellulose Expl. 1.1 - H201
CAS: 2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine Expl. 1.1 - H201; Acute Tox. 4 - H302; Acute Tox. 3 - H311
CAS: 7440-67-7	Zirconium Pyr. Sol. 1 - H250; Water-react. 1 - H260
CAS: 78-11-5	Pentaerythritol tetranitrate Unst. Expl. - H200
CAS: 7439-93-2	Lithium Water-react. 1 - H260; Skin Corr. 1B - H314; Eye Dam. 1 - H318
CAS: 25721-38-4 M factor (Chronic) = 1	Lead picrate Expl. 1.1 - H201; Acute Tox. 3 - H301; Acute Tox. 3 - H311; Acute Tox. 3 - H331; Repr. 1A - H360; STOT RE 2 - H373; Aquatic Chronic 1 - H410
CAS: 7429-90-5	Aluminium powder (stabilised) Flam. Sol. 1 - H228; Water-react. 2 - H261
CAS: 51311-17-2	Polycarbonmonofluoride Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; STOT SE 3 - H335

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CAS: -	Lead picramate Unst. Expl. - H200; Acute Tox. 4 - H302; Acute Tox. 4 - H332; Repr. 1A - H360Df; STOT RE 2 - H373; Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410
CAS: 13424-46-9 M factor (Acute) = 1 M factor (Chronic) = 1	Lead diazide Unst. Expl. - H200; Acute Tox. 4 - H302; Acute Tox. 4 - H332; Repr. 1A - H360Df; STOT RE 2 - H373; Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

Additional Information: The full text for all hazard statements is displayed in Section 16.

Composition comments: The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information: Class 1: Explosive substances and articles. Get medical attention immediately. Show this Safety Data Sheet to the medical personnel. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

After Inhalation: Due to the physical nature of this product, exposure by this route is unlikely. If exposed to the chemical contents, then proceed as follows:

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Ingestion: Due to the physical nature of this product, it is unlikely that ingestion will occur. If exposed to the chemical contents, then proceed as follows: If swallowed:

Rinse nose and mouth with water.

Give plenty of water to drink.

Do not induce vomiting unless under the direction of medical personnel.

If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

After Skin Contact: If exposed to the chemical contents, then proceed as follows:

Brush off loose particles from skin.

Wash skin thoroughly with soap and water.

After Eye Contact: Due to the physical nature of this product, exposure by this route is unlikely. If exposed to the chemical contents, then proceed as follows: If in eyes:

Rinse with water.

Remove any contact lenses and open eyelids wide apart.

Continue to rinse for at least 10 minutes.

Do not rub eye.

Protection of first aiders: First aid personnel should wear appropriate protective equipment during any rescue.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

General information The information below relates to the chemical components contained in the explosive item. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Suspected of damaging fertility or the unborn child.

Inhalation May cause respiratory irritation.

Ingestion Harmful if swallowed. Stomach pain.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact May cause temporary eye irritation.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes for the doctor Treat symptomatically.

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SECTION 5 – FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Agents: The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

For Safety Reasons Unsuitable Extinguishing Agents: Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special Hazards Arising from the Substance or Mixture

Risk of explosion: 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.

Hazardous combustion products: Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Oxides of carbon. Carbon monoxide (CO).

5.3 Advice for Firefighters

Protective Equipment: Class 1: Explosive substances and articles. Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

Additional Information

Leave danger zone immediately. Evacuate area. No action shall be taken without appropriate training or involving any personal risk. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Fight fire remotely due to the risk of explosion. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

No action shall be taken without appropriate training or involving any personal risk.

No smoking, sparks, flames or other sources of ignition near spillage.

Evacuate area. Isolate area and prevent access.

6.2 Environmental Precautions

Avoid discharge into drains or watercourses or onto the ground.

Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3 Methods and Material for Containment and Cleaning Up

Wear protective clothing as described in Section 8 of this safety data sheet.

No smoking, sparks, flames or other sources of ignition near spillage.

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Use only non-sparking tools.

For waste disposal, see Section 13.

6.4 Reference to Other Sections

For personal protection, see Section 8.

See Section 11 for additional information on health hazards.

See Section 12 for additional information on ecological hazards.

For waste disposal, see Section 13.

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SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Usage precautions: Read and follow manufacturer's recommendations.
Wear protective clothing as described in Section 8 of this safety data sheet.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from food, drink and animal feeding stuffs.
Use only non-sparking tools.
Handle with care.
Do not drop or knock.
Risk of explosion.
Do not handle until all safety precautions have been read and understood.
Do not handle broken packages without protective equipment.
Do not disassemble.

Advice on general occupational hygiene:

Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wash at the end of each work shift and before eating, smoking and using the toilet.
Change work clothing daily before leaving workplace.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage precautions:

Class 1: Explosive substances and articles. Store in accordance with local regulations. Licenced storage. Keep in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Ensure product is stored securely and cannot fall.

Storage class: Class 1: Explosive substances and articles. Compatibility group B.

7.3 Specific End Use(s): The identified uses for this product are detailed in Section 1.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Occupational exposure limits:

Ingredient comments: The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Ingredients with Limit Values that Require Monitoring at the Workplace:

Aluminium powder (stabilised)

Long-term exposure limit (8-hour TWA):
ACGIH 1 mg/m³ respirable fraction A4
Long-term exposure limit (8-hour TWA):
OSHA 5 mg/m³ respirable fraction as Al
Long-term exposure limit (8-hour TWA):
OSHA 15 mg/m³ total dust as Al

Lead diazide

Long-term exposure limit (8-hour TWA):
OSHA 0.05 mg/m³ as Pb
ACGIH = American Conference of Governmental Industrial Hygienists.
OSHA = Occupational Safety and Health Administration.
A4 = Not Classifiable as a Human Carcinogen.

8.2 Exposure Controls

Personal Protective Equipment:

General Protective and Hygienic Measures:

Provide adequate ventilation.

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Ensure the ventilation system is regularly maintained and tested.

Good general ventilation should be adequate to control worker exposure to airborne contaminants.

Observe any occupational exposure limits for the product or ingredients.

Take precautionary measures against static discharges.

Eye/face protection: Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with OSHA 1910.133.



Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Wear protective gloves made of the following material: Polyethylene.



Other skin and body protection: Wear suitable coveralls to prevent exposure to the skin. Wear fire/flame resistant/retardant clothing. Wear anti-static protective clothing if there is a risk of ignition from static electricity.



Hygiene measures: Good personal hygiene procedures should be implemented. When using do not eat, drink or smoke.

Respiratory Protection: No specific requirements are anticipated under normal conditions of use. Provide adequate ventilation. Respiratory protection may be required if excessive airborne contamination occurs. Wear a respirator fitted with the following cartridge: Organic vapor + dust and mist filter.

Thermal hazards: If there is a risk of contact with hot product, all protective equipment worn should be suitable for use with high temperatures.

Environmental exposure controls: The product in its supplied state is not believed to present an exposure hazard.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Product comments: This set contains many components. The information below relates to the chemical components contained in the explosive item.

Appearance

Form	:	Solid
Color	:	Not determined.
Odor	:	Not determined.
Odor Threshold	:	Not determined.
pH-Value	:	Not determined.
Change in Condition	:	
Freezing point	:	Not available.
Boiling point/Boiling range	:	Not available.
Flash Point	:	Not available.
Evaporation rate	:	Not determined.
Evaporation factor	:	Not determined.
Flammability (solid, gas)	:	Not relevant.
Upper/lower flammability or explosive limits	:	Not relevant.

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Vapor pressure	: Not determined.
Vapor density	: Not determined.
Relative density	: Not determined.
Bulk density	: Not determined.
Solubility	: Not determined.
Partition coefficient	: Not determined.
Auto-ignition temperature	: Not relevant.
Decomposition Temperature	: Not relevant.
Viscosity	: Not determined.
Explosive properties	: Class 1: Explosive substances and articles. Compatibility group B.
Oxidizing properties	: Not considered to be oxidising.
9.2 Other Information	: No information required.

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

See the other subsections of this section for further details.

10.2 Chemical Stability

Risk of explosion by shock, friction, fire or other sources of ignition.
Stable at normal ambient temperatures and when used as recommended.
Stable under the prescribed storage conditions.

10.3 Possibility of Hazardous Reactions

Risk of explosion.

10.4 Conditions to Avoid

Protect from sunlight.
Avoid heat, flames and other sources of ignition.
Risk of explosion if heated under confinement.
Do not subject to grinding/ shock/ friction.

10.5 Materials to avoid

Strong oxidizing agents. Strong reducing agents.

10.6 Hazardous Decomposition Products

Does not decompose when used and stored as recommended.
Thermal decomposition or combustion products may include the following substances:
Harmful gases or vapors.
Carbon monoxide (CO).

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Toxicological effects: Exposure to components of the product are limited due to the physical form of the product. The information below relates to the chemical components contained in the explosive item.

Acute toxicity:

LD50 Oral	Based on available data the classification criteria are not met.
LD50 Dermal	Based on available data the classification criteria are not met.
LD50 Inhalation	Based on available data the classification criteria are not met.

Skin corrosion/irritation:

Animal data	Based on available data the classification criteria are not met.
Serious eye damage/irritation	Based on available data the classification criteria are not met.

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Respiratory sensitization	Based on available data the classification criteria are not met.
Skin sensitization	Based on available data the classification criteria are not met.
Germ cell mutagenicity	
Genotoxicity - in vitro	Based on available data the classification criteria are not met.
Carcinogenicity	Based on available data the classification criteria are not met.
Carcinogenicity	
Reproductive toxicity	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity development	Based on available data the classification criteria are not met.
Specific target organ toxicity - single exposure:	
STOT - single exposure:	Not classified as a specific target organ toxicant after a single exposure.
Specific target organ toxicity - repeated exposure:	
STOT - repeated exposure	Based on available data the classification criteria are not met.
Aspiration hazard	
Aspiration hazard	Based on available data the classification criteria are not met.
General information:	
	The information below relates to the chemical components contained in the explosive item. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Suspected of damaging fertility or the unborn child.
Inhalation:	May cause respiratory irritation.
Ingestion:	Harmful if swallowed. Stomach pain.
Skin contact:	Prolonged skin contact may cause temporary irritation.
Eye contact:	May cause temporary eye irritation.
Route of exposure:	Ingestion Inhalation Skin and/or eye contact
Target Organs:	No specific target organs known.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: Harmful to aquatic life with long lasting effects.

12.2 Persistence and Degradability

The product contains inorganic substances which are not biodegradable.

12.3 Bioaccumulative Potential

No data available on bioaccumulation.

Partition coefficient: Not determined.

12.4 Mobility in Soil

The product is water-soluble and may spread in water systems.

12.5 Other Adverse Effects

None known.

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SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

General information: This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Empty containers or liners may retain some product residues and hence be potentially hazardous. Do not handle broken packages without protective equipment. Do not disassemble.

Disposal methods: Dispose of waste via a licensed waste disposal contractor. If broken/damaged and the contents exposed, submerge in water. Dispose of contents/container in accordance with local regulations.

SECTION 14 – TRANSPORT INFORMATION

General: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Handle with care. Do not drop or knock. Ensure product is stored securely and cannot fall.

14.1 UN-Number

UN No. (TDG) : UN0361
UN No. (IMDG) : UN0361
UN No. (IATA) : UN0361
UN No. (DOT) : UN0361

14.2 UN Proper Shipping Name

Proper shipping name (TDG) : DETONATORS ASSEMBLIES, NON-ELECTRIC
Proper shipping name (IMDG) : DETONATORS ASSEMBLIES, NON-ELECTRIC
Proper shipping name (IATA) : DETONATORS ASSEMBLIES, NON-ELECTRIC
Proper shipping name (DOT) : DETONATORS ASSEMBLIES, NON-ELECTRIC

14.3 Transport Hazard Class(es)

DOT

Class : 1.4B
Label : 1.4B

TDG

Class : 1.4B
Label : 1.4B

IMDG

Class : 1.4B
IATA

Class

Class : 1.4B

Label

Label : 1.4B



Transport labels

14.4 Packing Group

Packing group (International) : Not applicable.
DOT packing group : II

14.5 Environmental Hazards:

Environmentally Hazardous Substance : No

14.6 Special Precautions for User: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. Compatibility group B: Article containing a primary explosive substance and not having two or more effective protective features. Some articles such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included, even though they do not

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contain primary explosives.
EmS F-B, S-X

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture United States (USA)

SARA

Section 302 (Extremely Hazardous Substances)

Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

The following ingredients are listed or exempt:

0% Lead diazide

1.0 % aluminium powder (stabilised)

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

FDA - Essential Chemical

None of the ingredients are listed or exempt.

FDA - Precursor Chemical

None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories

None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals

The following ingredients are listed or exempt:

Nitrocellulose

Threshold Quantity: 2500 lbs

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed or exempt:

Aluminium powder (stabilised)

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

Aluminium powder (stabilised)

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

Potassium perchlorate

Lead diazide

Nitrocellulose Lithium

Aluminium powder (stabilised)

Rhode Island "Right To Know" List

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The following ingredients are listed or exempt:
Potassium perchlorate
Nitrocellulose Lithium
Aluminium powder (stabilised)
Minnesota "Right To Know" List
The following ingredients are listed or exempt:
Aluminium powder (stabilised)
New Jersey "Right To Know" List
The following ingredients are listed or exempt:
Potassium perchlorate
Nitrocellulose
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
Pentaerythritol tetranitrate Lithium
Aluminium powder (stabilised)
Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:
Potassium perchlorate
Nitrocellulose
Lithium
aluminium powder (stabilised)
Inventories
US - TSCA
All the ingredients are listed or exempt.
US - TSCA 12(b) Export Notification
The following ingredients are listed or exempt:
Pentaerythritol tetranitrate

SECTION 16 – OTHER INFORMATION

Revision Date : 09/17/2018
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

Relevant Phrases

- H200 Unstable explosive.
- H201 Explosive; mass explosion hazard.
- H228 Flammable solid.
- H250 Catches fire spontaneously if exposed to air.
- H260 In contact with water releases flammable gases which may ignite spontaneously.
- H261 In contact with water releases flammable gases.
- H271 May cause fire or explosion; strong oxidizer.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H331 Toxic if inhaled.

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- H332 Harmful if inhaled.
- H360 May damage fertility or the unborn child.
- 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:

- C.A.S.: Chemical Abstracts Service
- E.C. No: European Commission number
- GHS: Globally Harmonised System
- OSHA: Occupational Safety and Health Administration
- WHMIS: Workplace Hazardous Materials Information System
- DOT: Department of Transport
- TDG: Transport of Dangerous Goods Regulations
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transport Association
- SARA: Superfund Amendments and Reauthorization Act
- CERCLA: Comprehensive Environmental
- EPCRA: Emergency Planning and Community Right-to-Know Act
- TSCA: Toxic Substances Control Act
- LD/LC/EC: Lethal Dose, Lethal Concentration/Effect Concentration for 50% of population
- NOEC: No Overall Effect Concentration
- NOEL: No Overall Effect Level
- REACH: Registration, Evaluation, Authorisation & Restriction of Chemicals
- STOT-RE: Single Target Organ Toxicity - Repeat Exposure
- STOT-SE: Specific Target Organ Toxicity Single Exposure
- PBT: Persistent, Bioaccumulative, Toxic
- vPvB: Very Persistent, Very Bioaccumulative.

Sources

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