

Safety Data Sheet

SECTION 1 – IDENTIFICATION

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.

2795 East Cottonwood Parkway, Suite 500

Salt Lake City, Utah 84121

Phone: 801-364-4800 Fax 801-321-6703

E-Mail: dna.hse@am.dynonobel.com www.dynonobel.com

SDS #: 1146

Date: 11/01/2018

Supercedes: 03/06/2015

Product Identifier

Product Name: Seispro dBX

Other Means of Identification

Synonyms: Seispro™, Seispro™ dBX™

Intended Use of the Product

For professional use only.

Emergency Telephone Number

FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300

CANUTEC (CANADA) 613-996-6666

SECTION 2 – HAZARD(S) IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

| | |
|----------------|------|
| Expl. 1.1 | H201 |
| Flam. Sol. 1 | H228 |
| Water-react. 2 | H261 |
| Ox. Sol. 3 | H272 |
| Eye Irrit. 2A | H319 |

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H201 - Explosive; mass explosion hazard
H228 - Flammable solid
H261 - In contact with water releases flammable gases
H272 - May intensify fire; oxidizer
H319 - Causes serious eye irritation

Precautionary Statements (GHS-US)

: P210 - Keep away from open flames, sparks, heat, hot surfaces. - No smoking
P220 - Keep/Store away from clothing/combustible materials
P221 - Take any precaution to avoid mixing with combustibles
P223 - Keep away from any possible contact with water, because of violent reaction and possible flash fire
P230 - Keep wetted with not less than 30% water
P231+P232 - Handle under inert gas. Protect from moisture
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P250 - Do not subject to grinding, friction, shock
P264 - Wash exposed areas thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

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P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P337+P313 - If eye irritation persists: Get medical advice/attention
P370+P378 - In case of fire: Use Do NOT attempt to fight fire. to extinguish
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, territorial, provincial, and international regulations
P402+P404 - Store in a dry place. Store in a closed container
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations

Other Hazards

Hazards Not Otherwise Classified (HNOC): Not available

Other Hazards: Not available

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

| Name | Product identifier | % (w/w) | Ingredient Classification (GHS-US) |
|---|---------------------|---------|--|
| Ammonium nitrate | (CAS No) 6484-52-2 | 40 - 65 | Ox. Sol. 3, H272 Eye Irrit. 2A, H319 |
| Aluminum | (CAS No) 7429-90-5 | 5 - 25 | Comb. Dust Flam. Sol. 1, H228 Water-react. 2, H261 |
| Sodium nitrate | (CAS No) 7631-99-4 | 10 - 25 | Ox. Sol. 3, H272 Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 |
| Distillates, petroleum, chemically neutralized light naphthenic | (CAS No) 64742-35-4 | 0.1 - 3 | Asp. Tox. 1, H304 |

Full text of H-phrases: see section 16

SECTION 4 - FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Call a POISON CENTER or doctor/physician if you feel unwell. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes serious eye irritation.

Inhalation: May cause respiratory irritation.

Skin Contact: May cause skin irritation.

Eye Contact: Causes serious eye irritation.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Aluminum: Inhalation of finely divided aluminum powder may cause pulmonary fibrosis.

Indication of Any Immediate Medical Attention and Special Treatment Needed

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If you feel unwell, seek medical advice (show the label where possible).

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: DO NOT fight fires involving explosives. Evacuate the area for 1 mile or more if any amount of explosives are involved in a fire. Evacuation is also required if the initial fire, not involving explosives, becomes intense. General extinguishers may be used on the initial fire, not involving explosives, such as electrical equipment fires, tire fires or a general plant fire. Water can be used to cool explosives not involved in the initial fire. For large fires use remotely controlled equipment if available.

Unsuitable Extinguishing Media: Do not use carbon dioxide. Halogenated compounds. DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. Attempts to smother a fire involving this product will be ineffective as it is its own oxygen source. Smothering this product could lead to decomposition and explosion. This product is more sensitive to detonation if contaminated with organic or oxidizable material or if heated while confined. Unless the mass of product on fire is flooded with water, re-ignition is possible.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: In case of fire involving explosives: Evacuate area. DO NOT fight fires involving explosives. Consult the most current Emergency Response Guidebook (ERG), Guide 112 for additional information. Extreme risk of explosion from shock, friction, fire or other sources of ignition.

Explosion Hazard: Extreme risk of explosion by shock, friction, fire, impact, heat or other sources of ignition.

Reactivity: Accelerates the rate of burning materials. Oxidizer. May react violently with strong acids, strong oxidizing and reducing agents.

Reference to Other Sections: Refer to section 9 for flammability properties.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Remove ignition sources. No naked lights. No smoking. Use special care to avoid static electric charges. Evacuate danger area. Do NOT breathe (dust, vapor, mist, gas).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate danger area.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Hazardous waste due to potential risk of explosion.

Methods and Material for Containment and Cleaning Up

For Containment: Ground equipment electrically. Use only non-sparking tools.

Methods for Cleaning Up: Refer to supplier/manufacturer. Clear up spills immediately and dispose of waste safely. Dispose in a safe manner in accordance with local/national regulations. Spillage should be wetted or immersed in water.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Avoid dust production. This product is an explosive and should only be used under the supervision of trained and licensed personnel. Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat,

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drink or smoke when using this product.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Protect container from physical shock.

Storage Conditions: Store tightly closed in a dry, cool and well-ventilated place. Store at room temperature, below 100 ° F (38 °C). Always avoid open flames and excessive heat exposure. Protect from freezing. In case of electrical storm and possible lightning, locations where lightning could strike and initiate explosions, such as storage areas, must be evacuated to a safe distance. Store in accordance with local, regional, national or international regulation.

Incompatible Materials: Heat sources. Strong acids. Strong bases. Strong oxidizers. Reducing agents.

Storage Temperature: < 30 °C (< 86 °F)

Special Rules on Packaging: Packaged in cylindrical cartridges of paper or plastic film.

Specific End Use(s)

Cast booster material.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Aluminum (7429-90-5)

| | | |
|-------------------------|--------------------------------------|-----------------------|
| Mexico | OEL TWA (mg/m ³) | 10 mg/m ³ |
| USA ACGIH | ACGIH TWA (mg/m ³) | 1 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ |
| USA NIOSH | NIOSH REL (TWA) (mg/m ³) | 5 mg/m ³ |
| Alberta | OEL TWA (mg/m ³) | 10 mg/m ³ |
| British Columbia | OEL TWA (mg/m ³) | 1.0 mg/m ³ |
| Manitoba | OEL TWA (mg/m ³) | 1 mg/m ³ |
| New Brunswick | OEL TWA (mg/m ³) | 10 mg/m ³ |
| Newfoundland & Labrador | OEL TWA (mg/m ³) | 1 mg/m ³ |
| Nova Scotia | OEL TWA (mg/m ³) | 1 mg/m ³ |
| Nunavut | OEL STEL (mg/m ³) | 20 mg/m ³ |
| Nunavut | OEL TWA (mg/m ³) | 10 mg/m ³ |
| Northwest Territories | OEL STEL (mg/m ³) | 20 mg/m ³ |
| Northwest Territories | OEL TWA (mg/m ³) | 10 mg/m ³ |
| Ontario | OEL TWA (mg/m ³) | 1 mg/m ³ |
| Prince Edward Island | OEL TWA (mg/m ³) | 1 mg/m ³ |
| Québec | VEMP (mg/m ³) | 10 mg/m ³ |
| Saskatchewan | OEL STEL (mg/m ³) | 20 mg/m ³ |
| Saskatchewan | OEL TWA (mg/m ³) | 10 mg/m ³ |

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure, but are not required. Product to be handled under strictly controlled conditions. Ensure all national/local regulations are observed. Provide adequate ventilation to minimize dust concentrations.

Personal Protective Equipment: Gloves. Safety glasses.



Materials for Protective Clothing: Not available

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Safety glasses. In case of excessive dust production, safety goggles are recommended.

Skin and Body Protection: In case of excessive dust production. Wear suitable protective clothing.

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Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

| | |
|---|--|
| Physical State | : Solid |
| Appearance | : Gray, opaque semi-solid. |
| Odor | : Little to none. |
| Odor Threshold | : Not available |
| pH | : Not available |
| Relative Evaporation Rate (butylacetate=1) | : < 1 |
| Melting Point | : Not available |
| Freezing Point | : Not available |
| Boiling Point | : Not available |
| Flash Point | : Not available |
| Auto-ignition Temperature | : Not available |
| Decomposition Temperature | : Not available |
| Flammability (solid, gas) | : Not available |
| Lower Flammable Limit | : Not available |
| Upper Flammable Limit | : Not available |
| Vapor Pressure | : Not available |
| Relative Vapor Density at 20 °C | : Not available |
| Relative Density | : Not available |
| Specific Gravity | : 1.15-1.30 |
| Solubility | : Water: Product partially dissolves very slowly in water. |
| Partition coefficient: n-octanol/water | : Not available |
| Viscosity | : Not available |
| Explosive properties | : Explosive; mass explosion hazard |
| Explosion Data – Sensitivity to Mechanical Impact | : Sensitive to mechanical impact |
| Explosion Data – Sensitivity to Static Discharge | : Static discharge could act as an ignition source. |

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Accelerates the rate of burning materials. Oxidizer. May react violently with strong acids, strong oxidizing and reducing agents.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Extreme risk of explosion by shock, friction, fire, impact, heat or other sources of ignition.

Conditions to Avoid: Keep away from open flames, hot surfaces and sources of ignition. May explode from heat, shock, friction or contamination. avoid temperatures above 150°F (65.6°C).

Incompatible Materials: Strong acids. Strong bases. Oxidizers. Reducing agents. combustible materials. Alcohols. Chlorinated hydrocarbons. Detonates on contact with mercury fulminate.

Hazardous Decomposition Products: Toxic fumes. Carbon oxides (CO, CO₂). Nitrogen oxides. Oxides of aluminum.

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

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Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: Causes serious eye irritation.
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not available
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: May cause respiratory irritation.
Symptoms/Injuries After Skin Contact: May cause skin irritation.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation.
Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.
Chronic Symptoms: Aluminum: Inhalation of finely divided aluminum powder may cause pulmonary fibrosis.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

| | |
|---|----------------------------|
| Sodium nitrate (7631-99-4) | |
| LD50 Oral Rat | 1267 mg/kg |
| ATE CLP (oral) | 1267.000 mg/kg body weight |
| Ammonium nitrate (6484-52-2) | |
| LD50 Oral Rat | 2217 mg/kg |
| LC50 Inhalation Rat | > 88.8 mg/l/4h |
| ATE CLP (oral) | 2217.000 mg/kg body weight |
| Distillates, petroleum, chemically neutralized light naphthenic (64742-35-4) | |
| LD50 Oral Rat | > 5000 mg/kg |
| LD50 Dermal Rabbit | > 2000 mg/kg |

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life. Toxic to aquatic life with long lasting effects.

Sodium nitrate (7631-99-4)

| | |
|--------------|---|
| LC50 Fish 1 | 2000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static]) |
| LC 50 Fish 2 | 994.4 - 1107 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static]) |

Persistence and Degradability

Sodium nitrate (7631-99-4)

Persistence and Degradability Readily biodegradable in water.

Bioaccumulative Potential

Sodium nitrate (7631-99-4)

| | |
|---------------------------|--------------------------------|
| Log Pow | -3.8 (at 25 °C) |
| Bioaccumulative Potential | Not expected to bioaccumulate. |

Ammonium nitrate (6484-52-2)

| | |
|------------|-------------------------------|
| BCF fish 1 | (no bioaccumulation expected) |
| Log Pow | -3.1 (at 25 °C) |

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

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SECTION 13 - « SDS_EU_13\$Text»

Waste Treatment Methods: Consult supplier for specific recommendations.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations. Refer to manufacturer/supplier for information on recovery/recycling

Additional Information: Hazardous waste due to potential risk of explosion.

SECTION 14 - TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : BOOSTERS without detonator

Hazard Class : 1.1D

Identification Number : UN0042

Label Codes : 1.1D

Packing Group : II

Marine Pollutant : Not applicable

ERG Number : 112



14.2 In Accordance with IMDG

Proper Shipping Name : BOOSTERS

Hazard Class : 1.1D

Identification Number : UN0042

Label Codes : 1.1D

EmS-No. (Fire) : F-B

EmS-No. (Spillage) : S-X

Marine pollutant : Not applicable

MFAG Number : 112



14.3 In Accordance with IATA

Proper Shipping Name : BOOSTERS

Identification Number : UN0042

Hazard Class : 1

Label Codes : 1.1D

ERG Code (IATA) : 1L



14.4 In Accordance with TDG

Proper Shipping Name : BOOSTERS without detonator

Packing Group : II

Hazard Class : 1.1D

Identification Number : UN0042

Label Codes : 1.1D

Marine Pollutant (TDG) : Not applicable



SECTION 15 - REGULATORY INFORMATION

US Federal Regulations

1146 Seispro dBX

SARA Section 311/312 Hazard Classes

Immediate (acute) health hazard

Reactive hazard

Fire hazard

Aluminum (7429-90-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting

1.0 % (dust or fume only)

Sodium nitrate (7631-99-4)

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| | |
|---|--|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| Ammonium nitrate (6484-52-2) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| Distillates, petroleum, chemically neutralized light naphthenic (64742-35-4) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| US State Regulations | |
| Aluminum (7429-90-5) | |
| U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List | |
| Sodium nitrate (7631-99-4) | |
| U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List | |
| Ammonium nitrate (6484-52-2) | |
| U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List | |
| Canadian Regulations | |
| 1146 Seispro dBX | |
| WHMIS Classification | Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class F - Dangerously Reactive Material Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. |
|    | |
| Aluminum (7429-90-5) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List | |
| WHMIS Classification | Class B Division 6 - Reactive Flammable Material Class B Division 4 - Flammable Solid |
| Sodium nitrate (7631-99-4) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List | |
| WHMIS Classification | Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
| Ammonium nitrate (6484-52-2) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory. | |
| WHMIS Classification | Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
| Distillates, petroleum, chemically neutralized light naphthenic (64742-35-4) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory. | |
| This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR. | |

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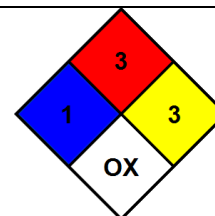
SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 11/01/2018
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Asp. Tox. 1 | Aspiration hazard Category 1 |
| Comb. Dust | Combustible Dust |
| Expl. 1.1 | Explosive Category 1.1 |
| Eye Irrit. 2A | Serious eye damage/eye irritation Category 2A |
| Flam. Sol. 1 | Flammable solids Category 1 |
| Ox. Sol. 3 | Oxidizing solids Category 3 |
| Water-react. 2 | Substances and mixtures which in contact with water emit flammable gases Category 2 |
| H201 | Explosive; mass explosion hazard |
| H228 | Flammable solid |
| H232 | May form combustible dust concentrations in air |
| H261 | In contact with water releases flammable gases |
| H272 | May intensify fire; oxidizer |
| H302 | Harmful if swallowed |
| H304 | May be fatal if swallowed and enters airways |
| H319 | Causes serious eye irritation |

NFPA Health Hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA Fire Hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.
NFPA Reactivity : 3 - Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation, or reacts explosively with water.
NFPA Specific Hazard : OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.



Party Responsible for the Preparation of This Document

Dyno Nobel Inc.
 2795 East Cottonwood Parkway, Suite 500
 Salt Lake City, Utah 84121
 Phone: 801-364-4800

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