Safety Data Sheet

SECTION 1 – IDENTIFICATION

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.
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SDS #: 1030
Date: 03/18/2015
Supersedes: 12/20/2012

Product Identifier
Product Form: Mixture
Product Name: Packaged Emulsion Explosives

Trade Name(s):

DYNO® AP	POWERMITE®
DYNO® AP PLUS	POWERMITE® Canadian
DYNO® E5	POWERMITE® PLUS
DYNO® SL	POWERMITE® RAISE BOMB™
DYNO® SL PLUS	POWERMITE® SL
DYNO® TX	SEISPRO®
DYNOSPLIT® AP	

Other Means of Identification
Product Class: Emulsion Explosives, Packaged

Intended Use of the Product
Industrial blasting applications

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

General Advice: This is a packaged product that will not result in exposure to the contents under normal conditions of use. In the event of contact, administer first aid appropriate for symptoms present.

Classification (GHS-US)
Expl. 1.1 H201

Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US) :

GHS01 GHS07

Signal Word (GHS-US) : Danger
Hazard Statements (GHS-US) : H201 - Explosive; mass explosion hazard.

Precautionary Statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.
P264 - Wash hands, forearms, and 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.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: DO NOT attempt to fight fire.
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 as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR part 555.
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Hazards Not Otherwise Classified (HNOC): None

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product identifier	% (w/w)	Ingredient Classification (GHS-US)
Ammonium nitrate	(CAS No) 6484-52-2	50 - 75	Ox. Sol. 3, H272 Eye Irrit. 2A, H319
Sodium nitrate	(CAS No) 7631-99-4	10 - 22	Ox. Sol. 3, H272 Eye Irrit. 2A, H319
Aluminum	(CAS No) 7429-90-5	0 - 6	Comb. Dust Flam. Sol. 1, H228 Water-react. 2, H261
Mineral oil	(CAS No) 64742-54-7	0 – 4	Asp. Tox. 1, H304
Sorbitan monooleate	(CAS No) 1338-43-8	0.2 – 1.5	Not Classified
Polymeric Emulsifier	(CAS No) 165526-49-8	0 – 2.0	Not Classified

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).
Full text of H-phrases: see section 16

SECTION 4 - FIRST AID MEASURES

Description of First Aid Measures

This is a packaged product that will not result in exposure to the contents under normal conditions of use. In the event of exposure, administer first aid appropriate for symptoms present.

General: Never give anything by mouth to an unconscious person. If exposed person feels unwell, seek medical advice.

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

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: Avoid ingestion, contact with eyes or skin.

Inhalation: May cause respiratory irritation.

Skin Contact: May cause skin irritation.

Eye Contact: May cause serious eye irritation.

Ingestion: Seek medical attention.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed
If exposed or concerned, get medical advice and attention.

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: 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.
Unsuitable Extinguishing Media: (See above)
Special Hazards Arising From the Substance or Mixture
Fire Hazard: Can explode or detonate under fire conditions. Burning material may produce toxic vapors.
Explosion Hazard: This product is an explosive with mass detonation hazard. Heating may cause an explosion.
Reactivity: Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in a large quantity.

Advice for Firefighters
Firefighting Instructions: 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. Guard against re-entry.
Protection During Firefighting: See above
Hazardous Combustion Products: Nitrogen Oxides (NO_x), Carbon Monoxide (CO). Ammonia.
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: Avoid all contact with skin, eyes, or clothing. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Eliminate every possible source of ignition.
For Non-Emergency Personnel
Protective Equipment: Use appropriate personal protection equipment (PPE).
Emergency Procedures: Evacuate unnecessary personnel.
For Emergency Personnel
Protective Equipment: Use appropriate personal protection equipment (PPE).
Emergency Procedures: Eliminate ignition sources. Ventilate area.

Environmental Precautions
Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up
Methods for Cleaning Up: Protect from all ignition sources. If no fire danger is present, and product is undamaged and/or uncontaminated, pick up or sweep up and repackage product in original packaging or other clean DOT approved container. Ensure that a complete account of product has been made and is verified. Follow applicable Federal, State, and local spill reporting requirements.
Reference to Other Sections
See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see section 13.

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling
This is a packaged product that will not result in exposure to the contents under normal conditions of use.
Additional Hazards When Processed: This product is an explosive and should only be used under the supervision of trained and licensed personnel. Use accepted safe industry practices when handling and using explosive materials. Unintended detonation of explosives or explosive devices can cause serious injury or death.
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, drink or smoke when using this product.

Conditions for Safe Storage, Including Any Incompatibilities
Technical Measures: Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR Part 555.
Storage Conditions: Store in cool, dry, well-ventialated location. Store in compliance with Federal, State and local regulations. Keep away from heat, flame, ignition sources and strong shock. Do NOT store explosives in a detonator magazine or detonators in an explosive magazine. Keep containers closed. Explosives should be kept well away from initiating explosives; protected from physical damage; separated from oxidizing materials, combustibles, and sources of heat. Isolate from incompatibles.
Incompatible Materials: Corrosives (strong acids and strong bases or alkalis)
Specific End Use(s) For industrial applications.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits

Ingredients:	Product identifier:	ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium nitrate	(CAS No) 6484-52-2	None	None
Sodium nitrate	(CAS No) 7631-99-4	None	None
Aluminum	(CAS No) 7429-90-5	10 mg/m^3 (dust)	15 mg/m^3 (total)
Mineral Oil	(CAS No) 64742-54-7	5 mg/m^3 (mist)	5 mg/m^3 (mist)
Sorbitan monooleate	(CAS No) 1338-43-8	None	None
Polymeric Emulsifier	(CAS No) 165526-49-8	None	None

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

Exposure Controls
Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective goggles. Protective clothing.
Materials for Protective Clothing: protective clothing.
Hand Protection: Protect against incidental skin contact.
Eye Protection: Chemical goggles or safety glasses.
Skin and Body Protection: Wear suitable protective clothing.
Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.
Environmental Exposure Controls: Do not allow the product to be released into the environment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	White or pink opaque semi-solid, which will appear gray if product contains aluminum. Typically paper or plastic chub packaging.
Odor	:	Faint petroleum odor

Odor Threshold	:	Not available
pH	:	Not applicable
Evaporation Rate	:	< 1
Melting Point	:	Not applicable
Freezing Point	:	Not applicable
Boiling Point	:	Not applicable
Flash Point	:	Not applicable
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Ammonium nitrate: 210 °C (410 °F)
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not applicable
Upper Flammable Limit	:	Not applicable
Vapor Pressure	:	Not applicable
Relative Vapor Density at 20 °C	:	Not applicable
Relative Density	:	Not applicable
Density	:	0.95 - 1.25 g/cc
Specific Gravity	:	Not applicable
Solubility	:	Partially soluble in water
Partition coefficient: n-octanol/water	:	Not available
Viscosity	:	Not available
Explosive properties	:	Explosive; mass explosion hazard
Explosion Data – Sensitivity to Mechanical Impact	:	Not sensitive
Explosion Data – Sensitivity to Static Discharge	:	Not sensitive

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in a large quantity.
Chemical Stability: Stable under normal temperature and pressure.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Keep away from heat, flame, ignition sources and strong shock.
Incompatible Materials: Corrosives (strong acids and strong bases or alkalis).
Hazardous Decomposition Products: Nitrogen Oxides (NO_X), Carbon Monoxide (CO), Ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product
Acute Toxicity: Not classified
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: May cause eye irritation.
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not classified
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 eye irritation.
Symptoms/Injuries After Ingestion: If ingested, seek medical attention.

Information on Toxicological Effects - Ingredient(s)
LD50 and LC50 Data:

Sodium nitrate (7631-99-4)	
LD50 Oral Rat	> 2000 mg/kg
Ammonium nitrate (6484-52-2)	
LD50 Oral Rat	2217 mg/kg
LC50 Inhalation Rat	> 88.8 mg/l/4h
Mineral Oil (64742-54-7**)**	
LD50 Oral Rat	> 15000 mg/kg
LD50 Dermal Rabbit	> 5000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

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)	
Bioaccumulative Potential	Not expected to bioaccumulate.
Ammonium nitrate (6484-52-2)	
BCF fish 1	No bioaccumulation expected.

Mobility in Soil Not available
Other Adverse Effects
Other Information: Avoid release to the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Disposal must comply with Federal, State and local regulations. If product becomes a waste, it is potentially regulated as a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR, part 261. Review disposal requirements with a person knowledgeable with applicable environmental law (RCRA) before disposing of any explosive material.
Additional Information: None

SECTION 14 - TRANSPORT INFORMATION

14.1 In Accordance with DOT
: EXPLOSIVE, BLASTING, TYPE E

Proper Shipping Name

Hazard Class	:	1.1D
Identification Number	:	UN0241
Label Codes	:	1.1D
Packing Group	:	II
ERG Number	:	112

14.2 In Accordance with IMDG

Proper Shipping Name	:	EXPLOSIVE, BLASTING, TYPE E
Hazard Class	:	1.1D
Identification Number	:	UN0241
Label Codes	:	1.1D
EmS-No. (Fire)	:	F-B
EmS-No. (Spillage)	:	S-X

14.3 In Accordance with IATA

Proper Shipping Name	:	EXPLOSIVE, BLASTING, TYPE E
Identification Number	:	UN0241
Hazard Class	:	1
Label Codes	:	1.1D
ERG Code (IATA)	:	1L

14.4 In Accordance with TDG

Proper Shipping Name	:	EXPLOSIVE, BLASTING, TYPE E
Packing Group	:	II
Hazard Class	:	1.1D
Identification Number	:	UN0241
Label Codes	:	1.1D

SECTION 15 - REGULATORY INFORMATION

US Federal Regulations

Packaged Emulsion Explosives
Bureau of Alcohol Tobacco & Firearms (BATF) **Department of Transportation (DOT)** **Mine Safety & Health Administration (MSHA)**

Canadian Regulations

Packaged Emulsion Explosives	
WHMIS Classification	**Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada.**

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.

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

Revision date	:	03/18/2015
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:

Expl. 1.1	Explosive Category 1.1
H201	Explosive; mass explosion hazard

Party Responsible for the Preparation of This Document

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