

Safety Data Sheet

SECTION 1 – IDENTIFICATION

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.

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SDS #: 1052

Date: 05/15/2015

Supersedes: 12/15/2011

Product Identifier

Product Form: Mixture

Product Name: Bulk Emulsion

Other Means of Identification

Synonyms:

DYNO GOLD[®]

DYNO GOLD[®] LITE

EXTRAMITE 1000

RUG-1 (Canada Only)

TITAN[®] 1000

TITAN[®] 1000 GREEN

TITAN[®] 1000G

TITAN[®] 1000G GREEN

TITAN[®] XL1000

SMS 1116, 1116A, 1126P,

1136P, 1146P

TITAN[®] 2000

TITAN[®] 2000G

TITAN[®] PB 1000

TITAN[®] PB 2000

TITAN[®] PB 2000 HF

TITAN[®] SME 1000

TITAN[®] SME 1000 GREEN

TITAN[®] XL1000 GREEN

TITAN[®] HD

TITAN[®] SME 2000

DX5037

Intended Use of the Product

Industrial blasting applications as emulsion explosive precursor

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)

Ox. Liq. 2

H272

Acute Tox. 4 (Oral)

H302

Skin Irrit. 2

H315

Carc. 2

H351

STOT RE 2

H373

Asp. Tox. 1

H304

Eye Irrit. 2B

H320

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



GHS03



GHS07



GHS08

Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed

H315 - Causes skin irritation

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H351 - Suspected of causing cancer
 H373 - May cause damage to organs through prolonged or repeated exposure
 H304 - May be fatal if swallowed and enters airways
 H320 - Causes eye irritation

Precautionary Statements (GHS-US) :

P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
 P220 - Keep/Store away from clothing, combustible materials, combustibles
 P221 - Take any precaution to avoid mixing with combustible materials, clothing, combustibles
 P233 - Keep container tightly closed
 P260 - Do not breathe dust, fume, mist, spray, vapors
 P264 - Wash exposed areas thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 P302+P352 - IF ON SKIN: Wash with plenty of soap and water
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P308+P313 - If exposed or concerned: Get medical advice/attention
 P332+P313 - If skin irritation occurs: Get medical advice/attention
 P362 - Take off contaminated clothing and wash before reuse
 P370+P378 - In case of fire: Use appropriate media to extinguish
 P403+P235 - Store in a well-ventilated place. Keep cool
 P405 - Store locked up
 P501 - Dispose of contents/container according to local, regional, national, and international regulations

Other Hazards

Hazards Not Otherwise Classified (HNOC): Not available

Other Hazards: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Mixture			
Name	Product identifier	% (w/w)	Ingredient Classification (GHS-US)
Ammonium nitrate	(CAS No) 6484-52-2	45 - 80	Ox. Sol. 3, H272 Eye Irrit. 2A, H319
Calcium nitrate	(CAS No) 10124-37-5	0.1 - 35	Ox. Sol. 3, H272 Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Sodium nitrate	(CAS No) 7631-99-4	0.1 - 18	Ox. Sol. 3, H272 Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
*Fuels, diesel, no. 2	(CAS No) 68476-34-6	0.1 - 10	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332

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			Skin Irrit. 2, H315 Carc. 2, H351 STOT RE 2, H373 Asp. Tox. 1, H304
Distillates, petroleum, chemically neutralized light naphthenic	(CAS No) 64742-35-4	0.1 - 6	Asp. Tox. 1, H304

* This ingredient is not used in GREEN-named products.
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

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

Inhalation: If symptoms occur, go into fresh air and ventilate suspected area. Seek medical attention.

Skin Contact: Remove contaminated clothing. Wash with soap and water followed by rinsing with water. Seek medical attention if irritation develops or persists. 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. Seek medical attention immediately.

Most Important Symptoms and Effects Both Acute and Delayed

General: May be harmful if swallowed. May cause eye or skin irritation.

Inhalation: May cause respiratory irritation.

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation.

Ingestion: Likely to be harmful if swallowed.

Chronic Symptoms: Contains an ingredient which may cause cancer. Causes damage to organs through prolonged or repeated exposure.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If symptoms occur, seek medical attention.

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Do not attempt to fight fires involving explosive materials or emulsion explosive precursors. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions.

Unusual Fire and Explosion Hazards: May explode or detonate under fire conditions. Burning material may produce toxic vapors.

Unsuitable Extinguishing Media: Not available

Special Hazards Arising From the Substance or Mixture

In intense fires the emulsion can detonate from confinement or strong shocks. Evacuation of at least 1 mile is recommended if the emulsion is involved in a fire.

Fire Hazard: May intensify fire; oxidizer. Will burn if exposed to heat, and in addition, will accelerate the burning of other combustibles, resulting in more rapid spread of fire.

Explosion Hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.

Reactivity: May cause or intensify fire; oxidizer. May accelerate the burning of other combustible materials.

Advice for Firefighters

Precautionary Measures Fire: DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate

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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.

Firefighting Instructions: DO NOT ATTEMPT TO FIGHT FIRE. Immediately evacuate all personnel from the area to a safe distance. Guard against re-entry. Thermal decomposition can lead to release of irritating gases and vapors.

Protection During Firefighting: When controlling fire before involvement of explosives or explosive precursors, fire-fighters should wear positive pressure self-containing breathing apparatus (SCBA) and full turnout gear.

Hazardous Combustion Products: Nitrogen oxides. Carbon oxides (CO, CO₂). Ammonia.

Other information: Do not attempt to fight fires involving explosive materials or emulsion explosive precursors. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions.

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. Avoid breathing dust, mist, or spray. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Eliminate every possible source of ignition. Evacuate danger area.

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: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes as necessary to prevent migration and entry into sewers or streams. Do not take up in combustible material such as: saw dust or cellulosic material.

Methods for Cleaning Up: Collect spillage for possible reuse. Clean up spills immediately and dispose of waste in accordance with appropriate state, federal and local regulations.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling

It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications.

Additional Hazards When Processed: When heated to decomposition, emits toxic fumes. Do not puncture or incinerate containers.

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.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep /store away from combustible materials, extremely high or low temperatures, direct sunlight, ignition sources, incompatible materials.

Incompatible Materials: Corrosives, strong acids, strong bases and alkalis.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Exposure Controls

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

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Personal Protective Equipment: Protective goggles. Gloves. Protective clothing.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or face shield.

Skin and Body Protection: Not available.

Respiratory Protection: Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of vapor or mist are expected to exceed exposure limits.

Other Information: When using, do not eat, drink or smoke.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Translucent to opaque viscous liquid.
Odor	: Fuel
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	: 0.8 - 1.5 g/cc
Solubility	: Water: Nitrate salts are completely soluble, but emulsion dissolution is very slow.
Partition coefficient: n-octanol/water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not sensitive to mechanical impact. May be sensitive to supersonic explosively driven projectile impacts.
Explosion Data – Sensitivity to Static Discharge	: Not sensitive to static discharge.

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SECTION 10 - STABILITY AND REACTIVITY

Reactivity: May cause or intensify fire. May accelerate the burning of other combustible materials.

Chemical Stability: May intensify fire. May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high temperatures. Heat. Sparks. Overheating. Open flame. Combustible materials. Sources of ignition. Incompatible materials.

Incompatible Materials: Corrosives, strong acids, strong bases and alkalis.

Hazardous Decomposition Products: Nitrogen oxides. Toxic vapors. Ammonia. Carbon monoxide.

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Harmful if swallowed.

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Suspected of causing cancer.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: May be fatal if swallowed and enters airways.

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 damage.

Symptoms/Injuries After Ingestion: May be harmful if swallowed. May be harmful if swallowed and enters airways.

Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury.

Chronic Symptoms: May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

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

Sodium nitrate (7631-99-4)

LD50 Oral Rat 1267 mg/kg

ATE CLP (oral) 1267.000 mg/kg body weight

Fuels, diesel, no. 2 (68476-34-6)

ATE CLP (vapors) 11.000 mg/l/4h

Distillates, petroleum, chemically neutralized light naphthenic (64742-35-4)

LD50 Oral Rat > 5000 mg/kg

LD50 Dermal Rabbit > 2000 mg/kg

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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])

Fuels, diesel, no. 2 (68476-34-6)

LC50 Fish 1	35 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
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Calcium nitrate (10124-37-5)

LC50 Fish 1	10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
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Persistence and Degradability

Bulk Emulsion

Persistence and Degradability	Not established.
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Sodium nitrate (7631-99-4)

Persistence and Degradability	Readily biodegradable in water.
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Bioaccumulative Potential

Bulk Emulsion

Bioaccumulative Potential	Not established.
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Ammonium nitrate (6484-52-2)

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

Sodium nitrate (7631-99-4)

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

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Contact manufacturer for advice on proper disposal methods.

Waste Disposal Recommendations: Collect spillage for possible reuse. Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Clean up even minor leaks or spills if possible without unnecessary risk.

SECTION 14 - TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name	: AMMONIUM NITRATE EMULSION
Hazard Class	: 5.1
Identification Number	: UN3375
Label Codes	: 5.1
Packing Group	: II
ERG Number	: 140



14.2 In Accordance with IMDG

Proper Shipping Name	: AMMONIUM NITRATE EMULSION
Hazard Class	: 5.1
Identification Number	: UN3375
Packing Group	: II

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Label Codes : 5.1
 EmS-No. (Fire) : F-H
 EmS-No. (Spillage) : S-Q



14.3 In Accordance with IATA

Proper Shipping Name : AMMONIUM NITRATE EMULSION
 Identification Number : UN3375
 Hazard Class : 5
 Label Codes : 5.1
 ERG Code (IATA) : 5L



14.4 In Accordance with TDG

No UN number exists for blasting intermediates for Transport Canada (use the following for Canadian shipments)

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E
 Packing Group : II
 Hazard Class : 1.5D
 Identification Number : UN0332
 Label Codes : 1.5D



SECTION 15 - REGULATORY INFORMATION

US Federal Regulations

Bulk Emulsion

SARA Section 311/312 Hazard Classes

Immediate (acute) health hazard
 Reactive hazard
 Delayed (chronic) health hazard
 Fire hazard

Ammonium nitrate (6484-52-2)

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

Sodium nitrate (7631-99-4)

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

Fuels, diesel, no. 2 (68476-34-6)

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

Calcium nitrate (10124-37-5)

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

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

Sodium nitrate (7631-99-4)

U.S. - Massachusetts - Right To Know List
 U.S. - Pennsylvania - RTK (Right to Know) List

Fuels, diesel, no. 2 (68476-34-6)

U.S. - New Jersey - Right to Know Hazardous Substance List

Calcium nitrate (10124-37-5)

U.S. - New Jersey - Right to Know Hazardous Substance List

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Canadian Regulations

Bulk Emulsion

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 : 05/15/2015
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:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 2	Carcinogenicity Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 3	Flammable liquids Category 3
Ox. Liq. 2	Oxidizing liquids Category 2
Ox. Sol. 3	Oxidizing solids Category 3
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
H226	Flammable liquid and vapor
H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

Party Responsible for the Preparation of This Document

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Dyno Nobel SDS