

Material Safety Data Sheet

Dyno Nobel Inc.

2650 Decker Lake Boulevard, Suite 300
Salt Lake City, Utah 84119
Phone: 801-364-4800 Fax: 801-321-6703
E-Mail: dna.hse@am.dynonobel.com

FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300
CANUTEC (CANADA) 613-996-6666

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SECTION I - PRODUCT IDENTIFICATION

Trade Name(s): Grained Ammonium Nitrate

Chemical Name/Product Class: Ammonium Nitrate

Synonyms: Ammonium Nitrate: Industrial Grade; AN; 35-0-0.

Product Appearance & Odor: Off white crystals with a slight ammonia odor.

DOT Hazard Shipping Description: Ammonium Nitrate Based Fertilizers 5.1 UN2067 III

Label: Oxidizer

NFPA Hazard Classification:

Health (Blue)	2
Flammability (Red)	0
Reactivity (Yellow)	3
Specific Hazard (White)	Oxidizer

HMIS (III) Classification:

Health	1
Flammability	1
Physical Hazard	3
PPE	E

SECTION II - HAZARDOUS INGREDIENTS

Ingredients:	CAS#	% (Range)	Occupational Exposure Limits	
			ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium Nitrate	6484-52-2	98 – 100%	None ¹	None ²
AEROSIL-200	7631-86-9	0 – 0.5%	10 mg/m ³	See note below
Zinc Oxide	1314-13-2	0 - 2%	2 mg/m ³ (respirable) 10 mg/m ³ (STEL, Respirable)	None ²

¹ Use limit for particulates not otherwise regulated (PNOR): Total dust, 15 mg/m³; respirable fraction, 5 mg/m³.

² Use limit for particulates not otherwise classified (PNOC): Inhalable particulate, 10 mg/m³; respirable part., 3 mg/m³.

Note: The OSHA PEL-TWA for amorphous silica is calculated as follows: 80 / (%SiO₂) mg/m³

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 de minimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

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SECTION III - PHYSICAL DATA

Boiling Point: Decomposes between 177-210°C (350-410°F) **Vapor Pressure:** Not Applicable
Vapor Density: Not Applicable **Density:** 0.72 - 1.00 g/cc (Poured bulk density)
Percent Volatile by Volume: Not Applicable **Solubility in Water:** 192 g/100 ml @ 20°C (68°F)
118 g/100 ml @ 0°C (32°F)
Evaporation Rate (Butyl Acetate = 1): Not Applicable **Melting Point:** 170°C (337°F)

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable
Flammable Limits: Not Applicable
Extinguishing Media: Water
Special Fire Fighting Procedures: Fight only small fires in initial stages when not confined. Immediately ventilate structures and transport containers to minimize confinement and prevent pressure buildup that increases the possibility of explosion. In advanced stage, or for any large fire or fire engulfing confining containers, abandon fire-fighting efforts and quickly evacuate all personnel to a safe distance of at least 2,500 feet. Use large quantities of water to cool. If possible, plug drains or dike channels to prevent either molten material or water runoff from entering storm drains or surface waters. Firefighters should wear self-contained breathing apparatus (SCBA) and full turnout gear.
Unusual Fire and Explosion Hazards: May explode or detonate under confinement and high temperatures. Ammonium nitrate emits toxic nitrogen oxides when heated to decomposition and will release ammonia to air upon reaction with strong alkalis. Explodes more readily if contaminated with organic materials or other fuels.

SECTION V - HEALTH HAZARD DATA

Carcinogenicity: **NTP:** No **IARC Monographs:** No **OSHA Regulated:** No

Effects of Overexposure

Not found to be toxic by oral, dermal and inhalation exposure as defined by OSHA.

Eyes: May cause irritation, redness, tearing or blurred vision.

Skin: Prolonged contact may irritate skin, resulting in reddening of the skin and possible dermatitis, or may aggravate pre-existing dermatitis.

Ingestion: May cause gastric irritation, abdominal spasms, nausea, pain and faintness. Large amounts may be harmful if swallowed, potentially causing systemic acidosis and methemoglobinemia.

Inhalation: Dust is irritating to mucous membranes and respiratory tract, and may cause sore throat, coughing, difficult breathing and severe lung congestion, and may also aggravate pre-existing lung conditions. Inhalation may also lead to ingestion effects. Delayed reactions may result in pulmonary edema and chemical pneumonitis.

Systemic or Other Effects: Decomposition of ammonium nitrate at high temperatures produces highly toxic Nitrogen Oxides (NO_x). High level exposure to NO_x can cause serious injury or death. Chronic exposure to NO_x can produce respiratory and/or kidney damage.

Emergency and First Aid Procedures

Eyes: Irrigate with running water for at least fifteen minutes. If irritation persists, seek medical attention.

Skin: Remove contaminated clothing. Wash with soap and water.

Ingestion: Seek medical attention. Do not induce vomiting. Treat for methemoglobinemia.

Inhalation: Remove to fresh air, seek medical attention.

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Special Considerations: If an exposure to toxic NO_x vapors occurs, restore or support breathing as necessary, seek immediate medical attention. Observe for delayed reactions to NO_x exposure that may involve pulmonary edema.

SECTION VI - REACTIVITY DATA

Stability: Stable under normal conditions. May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.

Conditions to Avoid: Keep away from heat, flame, ignition sources and strong shock.

Materials to Avoid (Incompatibility): Flammable liquids, organic solvents and materials, explosives, metal powders and other combustible materials. Reducing agents, chlorides, phosphorus and sulfur. Corrosives (strong acids and bases).

Hazardous Decomposition Products: Nitrogen Oxides (NO_x), Ammonia (NH₃), Nitric Acid (HNO₃).

Hazardous Polymerization: Does not occur.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in Case Material is Released or Spilled: Protect from all ignition sources. In case of large fire or fire engulfing containers, evacuate an area not less than 2,500 feet in all directions. If possible, plug drains or dike channels to prevent either molten material or water runoff from entering storm drains or surface water. Notify authorities in accordance with emergency response procedures. Only personnel trained in emergency response should respond. If no fire danger is present, and product is undamaged and/or uncontaminated, 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. Contact of this product with water may result in a reportable release.

Waste Disposal Method: Disposal must comply with Federal, State and local regulations. Ammonium Nitrate is used as a fertilizer and, in some cases, recovered material may be put to beneficial use. 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 hazardous material.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Ventilation: Not required for normal handling. Provide adequate ventilation as needed to avoid exceeding exposure limits for nuisance dust, especially in confined spaces.

Respiratory Protection: Wear NIOSH approved respirator when airborne exposure limits for nuisance dust are exceeded. Refer to OSHA standard 1910.134 for proper selection and use of respirators.

Protective Clothing: Wear long sleeved clothing and protective gloves to prevent prolonged and repeated skin contact.

Eye Protection: Safety glasses with side shields or chemical goggles are recommended. Eye baths should be provided when direct eye contact is likely.

Other Precautions Required: None.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storage: Store in cool, dry, non-combustible buildings and avoid contamination. Automatic sprinklers are appropriate. Keep separate from other chemicals and combustible materials. Refer to applicable fire and building codes.

Empty containers may contain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flames, sparks or other sources of ignition without first thoroughly decontaminating the containers; they may evolve poisonous gas and cause injury or death.

Other Precautions: Drains in storage area should be plugged to prevent entry of molten material during fire conditions.

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SECTION X - SPECIAL INFORMATION

EPCRA Section 311/312 Hazard Categorization

Acute	Chronic	Fire	Pressure	Reactive
X		X		

This product contains the following substances that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>Chemical Name</u>	<u>CAS Number</u> (Use Toxic Chemical Category Code)	<u>% By Weight</u>
Zinc compounds	N982	0 - 2

The reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372 may become applicable if the physical state of this product is changed to an aqueous solution. If an aqueous solution of this product is manufactured, processed, or otherwise used, the nitrate compounds category and ammonia listing of the previously referenced regulation should be reviewed.

Slightly toxic to aquatic organisms as defined by USEPA.

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