TECHNICAL DATA SHEET

NITROGEN PRODUCTS

AMMONIUM NITRATE

Industrial Grade

Properties

SDS #1020

AMMONIUM NITRATE % by weight typical	98.8–99.8
Water % by weight maximum	< 0.15
Bulk Density as manufactured	
g/cc	0.78 to 0.82
lbs/cuft	48.5 to 51.0
Bulk Density as received typical	
g/cc	0.80 to 0.86
lbs/cuft	50.0 to 53.0
Oil Absorption % by weight	> 6.0
Size Distribution as manufactured % by weight typical	U.S. Standard 6–20 > 98%
Total Organics % by weight	< 0.2%

Hazardous Shipping Description

- AMMONIUM NITRATE 5.1 UN1942 III or
- AMMONIUM NITRATE Fertilizer 5.1 UN2067 III

PRODUCT DESCRIPTION

Industrial Grade AMMONIUM NITRATE prills are specifically designed to be used as a solid oxidizer ingredient for explosive compositions such as ANFO, WR ANFO, Heavy ANFO emulsion and watergels. They are small-sized, low-moisture content, non-setting, porous spheres (prills) which are a lower density than agricultural grade AMMONIUM NITRATE used for fertilizer. The particle density of the prills is such that, when liquid fuel is properly applied to and mixed with them, the prills absorb the fuel uniformly which enhances reactivity. AMMONIUM NITRATE is highly soluble in water and does not precipitate with any common chemical. Industrial Grade AMMONIUM NITRATE is available in bulk by railcar or truck.

APPLICATION RECOMMENDATIONS

- Industrial Grade AMMONIUM NITRATE is used extensively in the mining industry and is intentionally made very porous to allow for the rapid uptake of liquid fuel oil. The prill is coated with a trace amount of waxy anti-caking material to enhance flowability and handling characteristics. Consult your Dyno Nobel representative for additional details, and information if needed.
- AMMONIUM NITRATE will decompose into ammonia and nitric acid fumes at 350°F.
- ALWAYS wash vessels containing AMMONIUM NITRATE thoroughly before attempting repairs requiring hot work.
- ALWAYS check with the bulk emulsion explosive or matrix manufacturer to ensure compatibility before using ANFO containing Industrial Grade prilled AMMONIUM NITRATE in Heavy ANFO or repumpable emulsion/ ANFO blends.
- ALWAYS keep doors, hatches and lids closed when not in use. Inspect all tanks and bins regularly for cracks and leaks.
- Industrial Grade prilled AMMONIUM NITRATE is susceptible to breakage from moisture, humidity, heat, temperature cycling, pressure and pneumatic or mechanical handling. Fines can result producing possible caking or lumping as well as decreased product flow characteristics / increased bulk density.

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APPLICATION RECOMMENDATIONS - continued

- ALWAYS design storage and process facilities to minimize repeated pneumatic and mechanical handling. Whenever possible, choose mechanical rather than dispersed phase pneumatic methods to off-load or otherwise transfer AMMONIUM NITRATE prills.
- ALWAYS use an air transfer pressure of 7–8 psig to maintain prill quality where bulk deliveries are transferred to storage by pneumatic conveyance.
- NEVER exceed 8–10 psig air pressure in dispersed phase pneumatic transfer.
- ALWAYS use equipment especially designed to blend and load ANFO, Heavy ANFO or repumpable emulsion / ANFO blends. Bulk delivery equipment should be calibrated periodically to ensure quality.
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- ALWAYS purge all hoses, piping, augers and especially bins or tanks that have integral augers before discontinuing loading or mixing. AMMONIUM NITRATE prill left in process equipment can make start up difficult and even cause damage.
- ALWAYS consider vibrators for bins, bulk trucks and railcars to assist with the flow of material.

TRANSPORTATION, STORAGE AND HANDLING

- Oxidizers must be transported, stored, handled and used in conformity with all applicable federal, state, provincial and local laws and regulations.
- For recommended good practices in transporting, storing, handling and using this product, see the Safety Library Publications of the Institute of Makers of Explosives and/or consult the many publications that address transportation, storage and handling of AMMONIUM NITRATE.
  - The Fertilizer Institute: AMMONIUM NITRATE Packaging, Handling, Transportation, Storage and Use.
  - Bureau of Mines: I 28.23:6773 Explosive Hazards of AMMONIUM NITRATE Under Fire Exposure.
  - International Fertilizer Industry Association: Handbook for the Safe Storage of AMMONIUM NITRATE Based Fertilizers.
  - Institute of Makers of Explosives: Recommendations for the Transportation of Explosives, Division 1.5 & AMMONIUM NITRATE Emulsions, Division 5.1 Bulk Packaging.
- NEVER allow unauthorized access to Industrial Grade AMMONIUM NITRATE at any step during transportation and storage.
- ALWAYS rotate inventory by using the oldest product first.
- ALWAYS choose bins and tanks that are designed to keep the weight of the bulk material from compacting into transfer augers that are located directly beneath them.
- ALWAYS empty and clean bulk tanks and bins routinely to prevent product build-up on walls.
- ALWAYS minimize inventory during warm weather and high humidity conditions. Packaged product may harden with temperature cycling; bulk material may cake, lump or break down (fines).
- ALWAYS keep prilled AMMONIUM NITRATE dry. Choose transportation, processing and storage containers or equipment without openings though which water or moisture can enter.

Industrial Grade AMMONIUM NITRATE is available in bulk by railcar or truck. lump or break down (fines).

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ADDITIONAL INFORMATION – Visit **dynonobel.com** for Brochures and Case Studies related to this product.

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