

# Material Safety Data Sheet

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**MSDS # 1009**  
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Supersedes  
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## SECTION I - PRODUCT IDENTIFICATION

**Trade Name(s):** ANFO  
DYNOMIX™, DYNOMIX™ (U.G.)  
DYNOMIX™ WR  
DYNOMIX™ HD  
FRAGMAX™

**Product Class:** ANFO, Bulk or Packaged

**Product Appearance & Odor:** White, free-flowing solid prills with fuel oil odor. May be tinged pink or other color to distinguish from solid prills without fuel.

### **Hazard Shipping Description (U.S. DOT and Canada TDGR)**

For ANFO, DYNOMIX™, DYNOMIX™ (U.G.), FRAGMAX™ : Ammonium nitrate-fuel oil mixture 1.5D NA0331 II  
Or Explosive, blasting, type B 1.5D UN0331 II

**Note:** Either description is acceptable, but if already packaged, refer to packaging for which description to use.

For DYNOMIX™ WR : Explosive blasting, type B 1.5D UN0331 II  
For DYNOMIX™ HD (Canada only): Explosive blasting, type B 1.1D UN0082 II

**NFPA Hazard Classification:** Not Available (See Section IV - Special Fire Fighting Procedures)

## SECTION II - HAZARDOUS INGREDIENTS

<u>Ingredients:</u>	<u>CAS#</u>	<u>% (Range)</u>	<u>Occupational Exposure Limits</u>	
			<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Ammonium Nitrate	6484-52-2	92-95	None <sup>1</sup>	None <sup>2</sup>
Fuel Oil	68476-34-6	4-7	100 ppm	None
Guar Gum*	9000-30-0	0-3	None <sup>1</sup>	None <sup>2</sup>

<sup>1</sup> Use limit for particulates not otherwise regulated (PNOR): Total dust, 15 mg/m<sup>3</sup>; respirable fraction, 5 mg/m<sup>3</sup>.

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

\* **DYNOMIX™ WR is the only product containing guar gum.**

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:** Not Applicable

**Vapor Density:** > 1

**Percent Volatile by Volume:** < 8 (Fuel oil)

**Evaporation Rate (Butyl Acetate = 1):** < 1

**Vapor Pressure:** <5 mm Hg @ 75° F

**Density:** 0.8 to 1.1 g/cc bulk density

**Solubility in Water:** Ammonium Nitrate component completely soluble

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**Flash Point:** >120° F (49°C)

**Extinguishing Media:** (See Special Fire Fighting Procedures section.)

**Special Fire Fighting Procedures:** 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.

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

**Flammable Limits:** Not Available

## SECTION V - HEALTH HAZARD DATA

### Effects of Overexposure

**Eyes:** May cause irritation, redness and tearing.

**Skin:** Prolonged contact may cause irritation.

**Ingestion:** Large amounts may be harmful if swallowed.

**Inhalation:** May cause dizziness, nausea or intestinal upset.

**Systemic or Other Effects:** None known.

### Emergency and First Aid Procedures

**Eyes:** Irrigate with running water for at least 15 minutes. If irritation persists, seek medical attention.

**Skin:** Wash with soap and water.

**Ingestion:** Seek medical attention.

**Inhalation:** Remove to fresh air.

**Special Considerations:** None.

## 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):** Corrosives (strong acids and strong bases or alkalis).

**Hazardous Decomposition Products:** Carbon Monoxide (CO) and Nitrogen Oxides (NO<sub>x</sub>)

**Hazardous Polymerization:** Will not occur.

## SECTION VII - SPILL OR LEAK PROCEDURES

**Steps to be taken in Case Material is Released or Spilled:** In case of fire evacuate area not less than 2,500 feet in all directions. Protect from all ignition sources. 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

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complete account of product has been made and is verified. If possible, plug drains or dike channels to prevent either material or water runoff from entering storm drains or surface waters. Follow applicable Federal; State and local spill reporting requirements.

**Waste Disposal Method:** 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.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**Ventilation:** Not required for normal handling. Forced ventilation may be necessary where natural ventilation is limited.

**Respiratory Protection:** None normally required. In a dusty environment, or in hot, enclosed areas, respiratory protection may be needed.

**Protective Clothing:** Gloves and work clothing that reduce skin contact are suggested.

**Eye Protection:** Safety glasses are recommended.

**Other Precautions Required:** None.

## SECTION IX - SPECIAL PRECAUTIONS

**Precautions to be taken in handling and storage:** Store in cool, dry, well-ventilated locations. Store in compliance with Federal, State, and local regulations. Keep away from heat, flame, ignition sources and strong shock.

**Precautions to be taken during use:** Avoid breathing the fumes from detonation of explosives. Use accepted safe industry practices when using explosive materials. Unintended detonation of explosives or explosive devices can cause serious injury or death.

**Other Precautions:** It is recommended that users of explosive materials be familiar with the Institute of Makers of Explosives Safety Library publications.

## SECTION X - SPECIAL INFORMATION

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.

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