

SAFETY DATA SHEET (SDS)

1.PRODUCT IDENTIFICATION

Product name:	ANFO
Trade names and synonyms:	Bulk ANFO explosives
Uses and uses advised against:	Mining explosive, mining industry
Manufacturer/Supplier information:	City Tower Business center, Sukhbaatar Square 8/1, Sukhbaatar District-8, Ulaanbaatar, Mongolia
Emergency phone number:	+976 9905 4231

2.HAZARD(S) IDENTIFICATION

Emergency overview: Granular and solid explosive. Partially soluble in water. Can be ignited in confined space. Dangerous goods.

Symptoms of over exposure by route of exposure: This product is not expected to cause acute or chronic health effects under conditions of foreseeable use. Extended skin contact may cause very mild irritation that will quickly clear after the exposure ceases.

Inhalation: this product is not likely to cause inhalation exposure.

Contact with skin or eyes: contact with the skin or eyes may cause irritation that will quickly be relieved upon rising of the affected area.

Skin absorption: there is no evidence that this material absorbs through the skin.

Ingestion: ingestion is not anticipated to be a significant route of exposure. if ingestion occurs, there may be mild gastric distress that will be relieved as the material passes through the body. symptoms of gastrointestinal distress can include stomachache, nausea, vomiting, diarrhea, and an increase in urination.

injection: injection is not likely to occur, but may cause mild local irritation.

Health effects or risks from exposure: an explanation in lay terms

Acute: no acute effects are likely to occur after exposure to this product; however contact may lead to irritation of the affected tissue.

Chronic: no chronic health effects have been reported for this chemical; long term exposure effects would be similar to those for acute exposure (described above).

3.COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Proportion, %	Hazard information
Ammonium Nitrate	6484-52-2	94	Ingredients determined not to be hazardous - <1%
Diesel fuel	68476-30-2	6	

4.FIRST-AID MEASURES

General advice: This product will not result in exposure to the explosive material under normal conditions of use.

Inhalation: Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Skin Contact: If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice. Nitrates can be absorbed through cut, burnt or broken skin. Launder contaminated clothing before reuse.

Eye Contact: If in eyes, wash out immediately with water for at least 15 minutes. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek medical advice.

5.FIRE-FIGHTING MEASURES

Hazards from combustion products: Explosive material. Avoid all ignition sources. On burning under confined or semi-confined conditions, some oxides of nitrogen and/or carbon will be present. Brown fumes indicate the presence of toxic oxides of nitrogen.

Precautions for fire fighters and special protective equipment: In case of a small fire, if explosive is not burning, carefully remove as much explosive as possible to a safe distance. Fire fighters to wear self-contained breathing apparatus if risk of exposure to vapour or products of combustion. However, if explosive is burning, evacuate area immediately. Do NOT fight fire. On burning under confined or semi-confined conditions, some oxides of nitrogen and/or carbon monoxide will be present. Brown fumes indicate the presence of toxic oxides of nitrogen. A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion.

Emergency procedures: Clear area of all unprotected and unauthorized personnel. Shut off all possible sources of ignition. Wear protective equipment to prevent skin and eye contact and inhalation of vapours/dusts. If contamination of sewers or waterways has occurred advise local emergency services.

6.ACCIDENTAL RELEASE MEASURES

Spill and leak response: In case of a spill, clear the affected area, protect people, and respond with trained personnel. Minimum Personal Protective Equipment should be Level B: triple-gloves (Neoprene and Nitric, over Latex), chemically resistant suit, chemically resistant boots, hard-hat, and Self-Contained Breathing Apparatus.

Pick up creamy paste product with non-sparking shovels or other non-sparking tools. Only after thoroughly removing the solid, use diatomaceous earth or other oil absorbent material to absorb oils. Rinse area with a soap and water solution.

Place all spill residue into a double plastic bag and seal. Dispose of in accordance with Federal, State waste disposal regulations.

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7.HANDLING AND STORAGE

Storage and handling practices: Keep in cool, dry place. Keep this material away from flammable liquids and powdered metals. Use non-sparking tools and avoid open flames. Wash clothing on which material has spilled. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Avoid all contact with other chemicals

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation and engineering controls: use with adequate ventilation. use a mechanical fan or vent area to outside.

Respiratory protection: no respiratory protection should be needed when using this product. use self-contained breathing apparatus during emergency response procedures.

Eye protections: splash goggles or safety glasses should be worn whenever handling this product.

Hand protection: use appropriate gloves. nitrile or neoprene gloves are adequate with the material. check gloves for leaks. wash hands after removing gloves.

Body protection: coveralls, apron or other body protection is appropriate for the task.

9. PHYSICAL AND CHEMICAL PROPERTIES

Vapor density:	Not Applicable
Specific gravity:	0.80-0.87
Solubility in water:	Partially soluble in water
Vapor pressure, mm.Hg @ 20°C:	Not Applicable
Appearance and color:	Granular Solid with light yellow colour
Evaporation rate (water L):	Not Applicable
Melting point or range:	Not Applicable
Boiling point:	Not Determined
pH:	Not Applicable

10. STABILITY AND REACTIVITY

Chemical stability: Explosive material. Avoid shock, heat, mechanical impact, friction between hard surfaces, electrostatic discharge and impingement. Confinement of burning material could result in detonation. Avoid contact with other chemicals.

Incompatible materials: Incompatible with nitrites, chlorates, chlorides and permanganates. Incompatible with strong acids. Incompatible with strong alkalis. Incompatible with combustible materials. Ammonium nitrate is a powerful oxidizing agent. It is incompatible with tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, any bromate, chlorate, chlorite, hypochlorite, perchlorate, chloroisocyanurate, any inorganic nitrite and metal powders.

Hazardous reactions: Explosive material. A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. Explosion may result due to shock, friction, fire and other sources of ignition.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label.

Ingestion: Swallowing can result in nausea, vomiting, diarrhea, and abdominal pain. Swallowing large amounts may result in headaches, dizziness and a reduction in blood pressure (hypotension).

Eye contact: May be an eye irritant.

Skin contact: Contact with skin may result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis. Can be absorbed through cut, broken, or burnt skin with resultant adverse effects.

Inhalation: Material may be irritant to the mucous membranes of the respiratory tract (airways). Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea. Blasting may produce a toxic brown gas of nitrogen dioxide. Inhalation of the gas may result in chest discomfort, shortness of breath and possible pulmonary oedema, the onset of which may be delayed. Absorption of ammonium nitrate by inhalation, ingestion or through burnt or broken skin may cause dilation of blood vessels by direct smooth muscle relaxation and may also cause methaemoglobinaemia.

Long Term Effects: No information available for the product. Available evidence from animal studies indicate that repeated or prolonged exposure to a component of this material could result in effects on the skin. This material contains within the diesel oil component of this formulation polycyclic aromatic hydrocarbons (PAHs). Some PAHs have been implicated as potential skin carcinogens in humans under conditions of poor personal hygiene, prolonged or repeated skin contact and exposure to sunlight. Toxic effects are unlikely to occur if good personal hygiene is practiced.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Avoid contaminating waterways.

Aquatic toxicity: Ammonium nitrate was evaluated at 5, 10, 25 and 50 mg (NH₄⁺)/L. The fertility of *Daphnia magna* was decreased at 50 mg/L. Post embryonic growth of crustacean was impaired at 10, 25 and 50 mg/L

13. DISPOSAL CONSIDERATIONS

Preparing wastes for disposal: The preferred method of waste disposal is a safe, controlled detonation. Contact the manufacturer for specific recommendations regarding such arrangements.

14. TRANSPORT INFORMATION

Classified as a dangerous good by the criteria code

UN No: 0332

Transport hazard class: 1.5 D Explosive

Technical name: Explosive, blasting, Type E

15. REGULATORY INFORMATION

Call manufacturer or special permitted unit.

16. OTHER INFORMATION

This SDS was prepared in accordance with related standard requirements.