

MATERIAL SAFETY DATA SHEET

Date: 01/04/2018



ANFO

This substance is an explosive product classified Class 1.1D Dangerous Good

ANFO is a nominal 94:6 weight percentage blend of Low Density Ammonium Nitrate and diesel fuel oil. It is dry free running product, usually coloured for identification.

Identification

Product Name: ANFO
Proper Shipping Name: Explosive, Blasting, Type B
UN Number: 0082
DG Class: 1.1D
Packaging Group:
Hazchem Code: E
Product Use: Explosive

Physical Data:

Appearance Small, hard, red or white spheres, slightly oily to touch.
Melting Point Not applicable
Boiling Point Not applicable
Vapour Pressure Not applicable
Specific Gravity 0.8 – 0.9 g/cc
Flash Point Not applicable
Flammable limit Not applicable
Flammable limit Not applicable
Solubility in Water Soluble

Other Properties

Ingredients Name	CAS	Proportion
Ammonium Nitrate	6484-52-2	9000 – 100.00%
Diesel Fuel Oil	-	0 – 9.99%
Dye	-	0 – 0.99%

Health Hazard Information

Health Effects

Acute; Ingestion – Ingestion of large amounts may cause cyanosis, nausea, collapse, vomiting, abdominal pain, rapid heartbeat and breathing, coma, convulsions and death may occur.

Acute; Eye - Burns.

Acute; Skin - Irritant.

Acute; Inhalation - Inhalation of dust or vapours can cause severe respiratory trace irritation. May cause dizziness.

Chronic – Prolonged, repeated skin contact with diesel fuel may defeat the skin resulting in possible irritation, dermatitis, burns and blistering

First Aid

Ingestion; If swallowed, **DO NOT INDUCE VOMITING.** Give patient one or two glasses of water to drink after first rinsing mouth. Seek medical attention. If vomiting begins, lower patient's head to below his/her hips to prevent aspiration of the vomit into the lungs. Do not attempt to give liquid to an unconscious person.

Eye; Hold eye lids open and immediately flush with large amounts of fresh running water for at least 15 minutes. Eye lids should be held away from the eyeball to ensure thorough rinsing. Call a physician.

Skin; Wash area of contact thoroughly with soap and water until all oils and oxidisers are removed. Remove contaminated clothing immediately. Launder clothing before re-use. Seek medical attention if irritation persists.

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Inhalation; Remove to fresh air Allow patient to assume most comfortable position. Keep at rest until fully recovered. If not breathing, administer artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Advice To Doctor

Gastric lavage by a qualified medical practitioner may be considered, depending on the quantity of material ingested.

Other Health Hazard Information

Precautions For Use & Exposure Limits

Other Exposure Info; No exposure limits established for this product. During preparation of this material, ammonium nitrate dust – nuisance dust.

TLV (TWA) 10mg/m³ total (NOHSC).

Oral LD50 (rats) – 3782 mg/kg

Mineral oil mist – TLV (TWA) 5 mg/m³ (NOHSC).

Oral LD50 (rats) - > 5 g/kg

As a result of detonation of this product, oxides of nitrogen fumes may be liberated. Nitrogen oxides are skin, eye and respiratory system irritants. Systematic toxicity resulting from oxidation of lung tissue and bronchopneumonia. Acute exposure can lead to death from asphyxia or pulmonary oedema. In animals, nitrogen oxide caused methemoglobinemia, was not carcinogenic, but caused embryotoxicity and reproductive effects.

Carbon dioxide is a colourless, odourless gas. It is a simple asphyxiant, attacking the lungs, skin and cardiovascular system. Concentrations of 5% may produce shortness of breath and headache and concentrations of 10% can produce unconsciousness and death from oxygen deficiency. Adequate ventilation will provide sufficient protection from any carbon dioxide accumulations.

Carbon monoxide is a colourless, odourless, tasteless gas which, when inhaled, combines with haemoglobin to form carboxyhaemoglobin which interferes with the oxygen-carrying capacity of blood. Resulting symptoms include headache, dizziness, drowsiness, nausea, vomiting, collapse, coma and death. Carbon monoxide attacks the central nervous system, lungs, blood and cardiovascular system.

Do not enter any area where accumulations of these gases are suspected without appropriate breathing apparatus.

The diesel fuel oil has an oral toxicity greater than 43 mg/kg in rats.

Engineering Controls; Use in a well ventilated area.

Personal Protection

Respirator Type (AS1716); Filter respirator, half-mask certified for dust when there is dust present.

Eye Protection; Safety glasses.

Glove Type; Impervious gloves are needed to avoid skin contact.

Work/Hygienic; Do not eat, smoke or drink during work unless the hands are thoroughly washed with soap and water first.

Flammability

Fire Hazards; No open flames, no sparks and no smoking. Products of combustion may contain oxides of nitrogen, ammonia, nitric acid, carbon monoxide, carbon dioxide and other toxic material.

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Safe Handling Information

Storage and Transport

Storage Precautions; Store in a cool, well ventilated area.

Store in accordance with Local, State and Federal regulations and the National Fire Protection Association regulations. Store away from heat, naked flames or sparks.

Do not store with food, where they may become contaminated with this material.

Transport; Transport in accordance with Government requirements.

Proper Shipping Name; Explosive, Blasting, Type B

EPG Number; EXP1

IERG Number; 02

Hazchem code; E

Spills and Disposal

Spills and Leaks; Shut off all possible ignition sources. Contain the source and spread of the spill and ensure that the material does not enter any waterways or drains.

Small spills may be dissolved in large quantities of water and used for irrigation purposes.

For large spills, collect as much of the materials as possible and place in clean, approved containers which are then labelled and sealed.

Surplus or defective explosives must not be placed in any waterway, thrown away, discarded or placed with rubbish.

Disposal

Destruction of explosives must be carried out by suitably qualified personnel. If necessary, the relevant statutory authorities must be notified.

In all circumstances, detonation is the preferred method of disposal.

The residue from spills and the burning of explosives may be toxic to live stock and/or wildlife.

Detonation

The explosives to be destroyed must be placed in direct contact with fresh priming charge in a hole which is at least 0.6 m deep and then adequately stemmed. No detonators are to be inserted into defective explosives. Personnel must be evacuated to a safe distance in accordance with relevant local regulations prior to initiation of the charge.

Note: Detonator in loose or stony ground may be expected to cause fly rock.

Burning

Burning may result in the detonation of the explosive. Burning explosives produces toxic fumes e.g. oxides of nitrogen and carbon.

Make a sawdust bed or trail adequate for the quantity of explosives to be burned approximately 400mm wide and 40mm deep, upon which the explosive will be laid. If sawdust is not available, newspaper may be used. Normal precautions should be taken against the spread of fire.

Individual trials should not be closer together than 600mm and should contain not more than 12kg of explosive.

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Trials should be side-by-side, not in a line, and not more than four should be set up at one at a time. Remove any explosive that is not to be burnt to a distance of at least 300m.

Sufficient diesel oil (never petrol or highly flammable liquid) should be used to thoroughly wet and sawdust (or paper). At least 4L per trail is recommended.

Light the trail from a long rolled paper 'wick' which should be placed downwind and in contact with the 1m of trail which is not covered with explosive. The wind should blow so that the flame from the wick (and later from the burning explosives) will blow away from the unburned explosives as detonation is more likely to occur if the explosive is preheated by the flame.

If plastic igniter cord (slow) is available, its use for lighting is recommended instead of paper. One end should be coiled into the sawdust or under the paper and the other end lit from a minimum distance of 7m from the trail. Retire to at least 300m or to a safe place.

Do not return to the site for at least 30min after the burning has apparently finished.

If the fire goes out do not approach for at least 15min after all traces of fire has gone. Do not add more diesel oil unless certain that the flame is completely extinguished.

Fire/Explosion Hazard

Avoid extreme conditions of heat or shock. May explode when heated in confine spaces. WILL EXPLODE IF SUITABLY PRIMED. If the product ignites then mass cooling by heavy dousing with water should effectively extinguish small fires.

DO NOT FIGHT LARGE FIRES. If a fire becomes established immediately isolate area and evacuate personnel to a safe distance. Toxic fumes may be generated as the product decomposes.

Other information

Contact: Prime Blasting Services Limited
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Disclaimer

The information and suggestions above concern explosive products which should only be dealt with by persons having appropriate technical skills, training and licences. The result depend to a large degree on the conditions under which the products are stored, transported and used.

While Prime Blasting Services makes every effort to ensure the details contained in the data sheet are as current and accurate as possible the conditions under which its products are used are not within Prime Blasting Services Limited's control. Each user is responsible for being aware of the details in the data sheet and the products applications in the specific context of the intended use.

Buyers and users assume all risk, responsibility and liability arising from the use of this product and the information in this data sheet. Prime Blasting Services Limited is not responsible for damages of any nature resulting from the use of its products or reliance upon the information.

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