



SAFETY DATA SHEET

Anfo, Anfo-800, Anfo-600, Anfo WR

SDS according to Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex II-EU

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Date issued 21.05.2015

1.1. Product identifier

Product name Anfo, Anfo-800, Anfo-600, Anfo WR

REACH Reg. No., Comments The product is a mixture.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation Explosive for civil use

The chemical can be used by the general public No

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name OY FORCIT AB
 Postal address P.O.Box 19
 Postcode 10901
 City Hanko
 Country Finland
 Tel +358 (0)207 440 400
 E-mail forcit@forcit.fi

1.4. Emergency telephone number

Emergency telephone National poison information center / National helpdesk:countrywise telephone number

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to 67/548/EEC or 1999/45/EC E; R2
 Xn; R40
 Xi; R36
 R52/53

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] Expl. 1.1; H201
 Eye Irrit. 2; H319
 Carc. 2; H351
 Aquatic Chronic 3; H412

2.2. Label elements

Hazard Pictograms (CLP)



Signal word

Danger

Hazard statements	H201 Explosive; mass explosion hazard. H319 Causes serious eye irritation. H351 Suspected of causing cancer. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	P250 Do not subject to grinding/shock/friction. P281 Use personal protective equipment as required. P370 + P380 In case of fire: Evacuate area. P372 Explosion risk in case of fire. P373 DO NOT fight fire when fire reaches explosives.
Other Label Information (CLP)	Explosives are labeled and packaged in accordance with the requirements for explosives only.

2.3. Other hazards

Other hazards	Not known.
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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents
Ammonium Nitrate	CAS no.: 6484-52-2 EC no.: 229-347-8 Registration number: 01-2119490981-27-0004	O; R8 Xi; R36 Ox. Sol. 3;H272; Eye Irrit. 2;H319;	> 80 %
Fuels, diesel	CAS no.: 68334-30-5 EC no.: 269-822-7 Index no.: 649-224-00-6	Xn; R20,R38,R40,R65 N; R51/53 Flam. Liq. 3; H226 Asp. tox 1; H304 Skin Irrit. 2; H315 Acute tox. 4; H332 Carc. 2; H351 STOT RE2; H373 Aquatic Chronic 2; H411	< 8 %
Substance comments	The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.		

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/attention.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Promptly wash eyes with plenty of water while lifting the eye lids. Contact physician if discomfort continues.
Ingestion	Rinse mouth with water. DO NOT induce vomiting. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

Information for health personnel	Symptoms do not necessarily appear immediately. Patients should therefore be kept under medical observation for at least 48 hours.
General symptoms and effects	Not determined.
Acute symptoms and effects	Not determined.

4.3. Indication of any immediate medical attention and special treatment needed

Medical treatment	Not determined.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media DO NOT fight fire when fire reaches explosives. Explosion risk in case of fire.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards When heated and in case of fire, toxic vapours/gases may be formed. May explode when heated or when exposed to flames or sparks.

5.3. Advice for firefighters

Fire fighting procedures Fight adjacent fire with all available means to prevent fire from reaching the product.
DO NOT fight fire when fire reaches explosives. Leave danger zone immediately.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal protection measures Avoid contact with eyes and prolonged skin contact. For personal protection, see section 8.

6.2. Environmental precautions

Environmental precautionary measures Do not discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Cleaning method Collect spilled explosive mass with suitable non-sparking tools (made of wood or aluminum). Place into marked, sealable containers and dispose of as required by the authorities.

6.4. Reference to other sections

Other instructions Firefighting, see Section 5.
Personal protective equipment, see Section 8.2.
Disposal of waste containing product residues, see Section 13.1.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Handling Risk of explosion by shock, friction, fire or other sources of ignition. Use non sparking handtools and explosion-proof electric equipment. Do not smoke or use open fire, or other sources of ignition. Provide good ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage Store in locked, well ventilated room and isolated from acids. Store in a dry place. Keep cool. Protect from sunlight. National regulations must be followed with handling and storage.

7.3. Specific end use(s)

Specific use(s) See Section 1.2

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational Exposure limit values**

Substance	Identification	Value	TWA Year
Ammonium Nitrate	CAS no.: 6484-52-2 EC no.: 229-347-8 Registration number: 01-2119490981-27-0004		

DNEL / PNEC from substances

Substance Ammonium Nitrate
DNEL Group: Worker
Exposure route: Inhalation

	Exposure frequency: Long term (repeated)
	Type of effect: Systemic effect
	Value: 37,6 mg/m ³
DNEL	Group: Worker
	Exposure route: Dermal
	Exposure frequency: Long term (repeated)
	Type of effect: Systemic effect
	Value: 21,3 mg/kg
PNEC	Value: 4,5 mg/l
	Remarks: Periodic discharge
PNEC	Exposure route: Sewage treatment plant STP
	Value: 18 mg/l
PNEC	Exposure route: Saltwater
	Value: 0,045 mg/l
PNEC	Exposure route: Freshwater
	Value: 0,45 mg/l

8.2. Exposure controls

Safety signs



Respiratory protection

Respiratory protection Respiratory protection not required.

Hand protection

Hand protection Chemical resistant gloves required for prolonged or repeated contact.
Suitable materials Gloves of nitrile rubber, PVA or Viton are recommended.

Eye / face protection

Eye protection Use eye protection.

Skin protection

Skin protection (except hands) Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene / Environmental

Specific hygiene measures Wash hands always after work, before eating, drinking, smoking or going to the bathroom.

Appropriate environmental exposure control

Environmental exposure controls Avoid the product from entering drains, sewers, waterways and soil.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid. Granular.
Colour	Pink.
Odour	Hydrocarbon.
Comments, Odour limit	Not relevant.
Comments, pH (as supplied)	Not relevant.
Comments, Melting point / melting range	Not relevant.
Boiling point / boiling range	Value: 150-370 °C Test reference: Light fuel oil
Comments, Boiling point / boiling range	Not relevant.
Flash point	Value: > 55 °C Method of testing: EN ISO 2719

Comments, Flash point	Test reference: Light fuel oil Not relevant.
Comments, Evaporation rate	Not relevant.
Flammability (solid, gas)	Not determined.
Vapour pressure	Value: < 1 kPa Test reference: Light fuel oil Test temperature: 38 °C
Comments, Vapour pressure	Not relevant.
Comments, Vapour density	Not relevant.
Specific gravity	Value: 0,6-0,9 g/cm ³
Solubility description	Ammonium nitrate: water-soluble Light fuel oil: poorly water-soluble
Comments, Partition coefficient: n-octanol / water	Ammonium nitrate: <1 Light fuel oil: log Kow: 3,9 - over 6
Comments, Spontaneous combustability	Not determined.
Decomposition temperature	Value: > 200 °C
Comments, Viscosity	Not determined.
Explosive properties	Explosive
Oxidising properties	Ammonium nitrate: oxidizing

9.2. Other information

Other physical and chemical properties

Comments	Not determined.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No dangerous reactions known under conditions of normal use.
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10.2. Chemical stability

Stability	Stable under the prescribed storage conditions.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None known under normal storage and handling conditions.
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10.4. Conditions to avoid

Conditions to avoid	Risk of explosion by shock, friction, fire or other sources of ignition.
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10.5. Incompatible materials

Materials to avoid	Strong alkalis. Strong acids. Reducing agents and organic materials. Do not let foreign materials get mixed in the product.
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10.6. Hazardous decomposition products

Hazardous decomposition products	During fire, toxic gases (CO, CO ₂ , NO _x , NH ₃) are formed.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological data for substances

Substance	Ammonium Nitrate
LD50 oral	Value: 2950 mg/kg Animal test species: Rat Test reference: IUCLID 5
LD50 dermal	Value: > 5000 mg/kg Animal test species: Rat Test reference: IUCLID 5

Potential acute effects

Inhalation	Symptoms like headache, fatigue and nausea may appear.
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Skin contact	Prolonged or frequent contact may cause redness, itching, eczema and skin cracking.
Irritation	Irritating to the eyes. May cause skin irritation.
Corrosivity	Not known.

Delayed effects / repeated exposure

Sensitisation	Not known.
Repeated dose toxicity	Not determined.

Carcinogenic, Mutagenic or Reprotoxic

Carcinogenicity	Contains a substance/a group of substances which may cause cancer.
Teratogenic properties	No data recorded.
Reproductive toxicity	No data recorded.
Other adverse Toxicological effects	No data recorded.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	The product contains substances which are toxic to aquatic organisms and which may cause long term adverse effects in the aquatic environment.
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Toxicological data for substances

Substance	Ammonium Nitrate
Acute aquatic, fish	Value: 447 mg/l Method of testing: LC50 Duration: 48 h Test reference: IUCLID 5
Acute aquatic, algae	Value: 1700 mg/l Method of testing: EC50 Duration: 10 d Test reference: IUCLID 5
Acute aquatic, Daphnia	Value: 490 mg/l Method of testing: EC50 Duration: 48 h Test reference: IUCLID 5

12.2. Persistence and degradability

Persistence and degradability	Ammonium nitrate: no known significant effects or critical hazards, fuel oil: slowly biodegradable (estimation), biodegradability very slow under anaerobic conditions.
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12.3. Bioaccumulative potential

Bioaccumulation evaluation	Ammonium nitrate: not bioaccumulative (LogPow <1) Fuel oil: possibly bioaccumulative (log Kow > 3)
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12.4. Mobility in soil

Mobility	The product contains substances, which are water soluble and may spread in water systems. The product contains environmentally harmful substances which are bound to particulate matter and are withheld in sediments.
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12.5. Results of PBT and vPvB assessment

PBT assessment results	Not determined.
vPvB evaluation results	Not determined.

12.6. Other adverse effects

Other adverse effects / Remarks	No data recorded.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Do not allow runoff to sewer, waterway or ground. Do not mix with normal waste.
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Explosives waste and explosives-tainted containers must be collected immediately and disposed only under the supervision of experts and in accordance with given regulations. Uncleaned empty containers are to be handled in the same way as the ones containing products.

Product classified as hazardous waste Yes

SECTION 14: Transport information

14.1. UN number

ADR 0082
 RID 0082
 IMDG 0082
 ICAO/IATA 0082

14.2. UN proper shipping name

ADR EXPLOSIVE, BLASTING, TYPE B
 RID EXPLOSIVE, BLASTING, TYPE B
 IMDG EXPLOSIVE, BLASTING, TYPE B
 ICAO/IATA EXPLOSIVE, BLASTING, TYPE B

14.3. Transport hazard class(es)

ADR 1.1D
 RID 1.1D
 IMDG 1.1D
 ICAO/IATA 1.1D
 Comments Prohibited from air transport.

14.4. Packing group

Comments Not determined.

14.5. Environmental hazards

Comments Not determined.

14.6. Special precautions for user

EmS F-B, S-Y
 Special safety precautions for user Not determined.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Comments For professional users only.

15.2. Chemical safety assessment

CSR required No

SECTION 16: Other information

Hazard symbol



R-phrases

R2 Risk of explosion by shock, friction, fire or other sources of ignition.
 R40 Limited evidence of a carcinogenic effect.
 R36 Irritating to eyes.
 R52/53 Harmful to aquatic organisms, may cause long-term adverse effects

S-phrases	<p>in the aquatic environment.</p> <p>S17 Keep away from combustible material.</p> <p>S23 Do not breathe gas/fumes/vapour.</p> <p>S36/37 Wear suitable protective clothing and gloves.</p> <p>S41 In case of fire and/or explosion do not breathe fumes.</p> <p>S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.</p> <p>S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.</p>
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	<p>Expl. 1.1; H201;</p> <p>Eye Irrit. 2; H319;</p> <p>Carc. 2; H351;</p> <p>Aquatic Chronic 3; H412;</p>
List of relevant R-phrases (under headings 2 and 3).	<p>R38 Irritating to skin.</p> <p>R40 Limited evidence of a carcinogenic effect.</p> <p>R36 Irritating to eyes.</p> <p>R2 Risk of explosion by shock, friction, fire or other sources of ignition.</p> <p>R65 Harmful: may cause lung damage if swallowed.</p> <p>R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p>R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p>R8 Contact with combustible material may cause fire.</p> <p>R20 Harmful by inhalation.</p>
List of relevant H-phrases (Section 2 and 3).	<p>H412 Harmful to aquatic life with long lasting effects.</p> <p>H304 May be fatal if swallowed and enters airways.</p> <p>H226 Flammable liquid and vapour.</p> <p>H373 May cause damage to organs through prolonged or repeated exposure</p> <p>H315 Causes skin irritation.</p> <p>H332 Harmful if inhaled.</p> <p>H351 Suspected of causing cancer</p> <p>H272 May intensify fire; oxidiser.</p> <p>H201 Explosive; mass explosion hazard.</p> <p>H411 Toxic to aquatic life with long lasting effects.</p> <p>H319 Causes serious eye irritation.</p>
Important data sources used to construct the safety data sheet	<p>REACH Directive (EC) 1907/2006</p> <p>CLP Regulation (EC) 1272/2008</p> <p>Material Safety Data Sheets on raw materials</p>
Version	1
Responsible for safety data sheet	OY FORCIT AB
Comments	<p>The information in this MSDS is based on the present state of our knowledge. It does not represent any guarantee with regard to product properties or their suitability for particular uses. Because the use of this information and instructions or the conditions of use of the product is not at our control, it is the user's duty to specify the circumstances for the safe use of the product.</p>