

Ammonium nitrate emulsion Emulex Oy

Date 17/2/2024

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SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier****1.1.1 Commercial Product Name**

Ammonium nitrate emulsion

1.1.2 Product code

Common Name: Ammonium nitrate emulsion

REACH Registration Number:

01-2119490981-27-0067 (Ammonium nitrate)

Pre-Registration completed (Paraffin oils)

1.2 Relevant identified uses of the substance or mixture and uses advised against**1.2.1 Recommended use**

Emulsion phase ingredient for explosives.

1.3 Details of the supplier of the safety data sheet**1.3.1 Supplier**

	Emulex Oy
Street address	Mestarinkatu 6
Postcode and post office	70700 Kuopio Finland
Telephone	+358 (0) 443533620
Telefax	
Email	toimisto@emulex.fi

1.4 Emergency telephone number**1.4.1 Telephone number, name and address**

See section 16.6 for the list of telephone numbers of poison centers in the European Economic Area.

SECTION 2. HAZARDS IDENTIFICATION

In accordance with Directive 1999/45/EC (DPD) and Regulation (EC) No. 1272/2008 (CLP) this mixture is classified as hazardous. The mixture causes eye irritation and is an oxidiser.

2.1 Classification of the substance or mixture**1999/45/EC (DPD)**

O; R8

Xi; R36

1272/2008 (CLP)

Ox. Sol. 3, H272

Eye Irrit. 2, H319

2.2 Label elements**1272/2008 (CLP)**

GHS07 - GHS03

Signal word

Warning**Hazard Statements**

H272 May intensify fire; oxidiser.

H319 Causes serious eye irritation.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P220 Keep/Store away from clothing/combustible materials.

P370+P378 In case of fire: Use water for extinction.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



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2.3 Other hazards

PBT and vPvB assessments are applicable to substances, not mixtures. According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted for ammonium nitrate since it is inorganic.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**3.2 Mixtures**

This mixture contains the following substances meeting the criteria for classification:

Hazardous components

CAS/EC and Reg.number	EINECS	Chemical name of the substance	Concentration	Classification
6484-52-2/	229-347-8	Ammonium nitrate	69-80 %	CLP: Ox. Sol. 3, H272; Eye Irrit. 2, H319 DSD: O, R8; Xi, R36
8012-95-1	232-384-2	Paraffin oils	5 %	CLP: Flam. Liq. 3; H226 DSD: R10
7632-00-00	231-555-9	Sodium nitrate	10 %	CLP: Ox. Sol. 3, H272; Acute Tox. 4, H302

3.3 Other information

REACH number ammonium nitrate: 01-2119490981-27-0067

SECTION 4. FIRST AID MEASURES**4.1 Description of first aid measures****4.1.2 Inhalation**

Move the victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

4.1.3 Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately if irritation develops and persists.

4.1.4 Eye contact

In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

4.1.5 Ingestion

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Causes eye irritation.

4.3 Indication of immediate medical attention and special treatment needed

Note to physician: Methaemoglobinaemia.

SECTION 5. FIREFIGHTING MEASURES**5.1 Extinguishing media****5.1.1 Suitable extinguishing media**

Water spray

5.1.2 Extinguishing media which must not be used for safety reasons

no data available

5.2 Special hazards arising from the substance or mixture

Non-combustible material. Oxidizing substance. Will support combustion of other materials. Decomposes on heating emitting irritating white fumes. Brown fumes indicate the presence of toxic oxides of nitrogen.

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5.3 Advice for firefighters

Nitrate salts on their own are not combustible, however they will support the combustion of other materials. Decomposes on heating emitting irritating white fumes. Brown fumes indicate the presence of toxic oxides of nitrogen. On detection of fire the compartment(s) should be opened up to provide maximum ventilation. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to products of combustion/decomposition. Fires should be fought from a protected location. Keep containers and adjacent areas cool with water spray. If safe to do so, remove containers from path of fire. 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.

5.4 Specific methods

no data available

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Evacuate personnel to safe areas. Remove all sources of ignition. Wear personal protective equipment. Prevent skin and eye contact and inhalation of vapours/dusts.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Avoid spillage on floor as the product can become very slippery when wet. Clean up promptly by scoop or vacuum. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). DO NOT use combustible absorbents such as sawdust.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid contact with skin, eyes and clothing. Avoid breathing vapours, mist or gas. Sensitive to impact and/ or friction. Use personal protective equipment. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Keep away from sources of ignition - No smoking. Do not use in areas without adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities

Ensure ammonium nitrate is stored securely and in accordance with local regulations. Do not store together with strong acids, strong alkalis, nitrites, chlorates, chlorides and permanganates. Store between 5 and 25 °C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. Keep containers tightly closed. Keep away from sources of ignition - No smoking. Product Deterioration: The process of deterioration is a gradual crystallisation of the ammonium nitrate and a thickening of the emulsion. If heated for long periods the emulsion may segregate. Product which has deteriorated badly is unsuitable for use.

7.3 Specific end use(s)

Emulsion phase ingredient for explosives.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

No data is available on the product itself.

8.1.2 Other information on limit values

No data is available on the product itself.

8.1.3 Limit values in other countries

No data is available on the product itself.

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- 8.1.4 DNELs**
No data is available on the product itself.
- 8.1.5 PNECs**
No data is available on the product itself.
- 8.2 Exposure controls**
- 8.2.1 Appropriate engineering controls**
Use only in an area equipped with explosion proof exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location.
- 8.2.2 Individual protection measures**
- 8.2.2.1 Respiratory protection**
This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.
- 8.2.2.2 Hand protection**
Protective gloves complying with EN 374.
- 8.2.2.3 Eye/face protection**
Safety glasses with side-shields conforming to EN166
- 8.2.2.4 Skin protection**
Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing.
- 8.2.3 Environmental exposure controls**
Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 Important Health Safety and Environmental Information**
- 9.1.1 Appearance**
viscous liquid, gel
- 9.1.2 Odour** negligible
- 9.1.3 Odour threshold** no data available
- 9.1.4 pH** no data available
- 9.1.5 Melting point/freezing point** no data available
- 9.1.6 Initial boiling point and boiling range** no data available
- 9.1.7 Flash point** no data available
- 9.1.8 Evaporation rate** no data available
- 9.1.9 Flammability (solid, gas)** no data available
- 9.1.10 Explosive properties**
- 9.1.10.1 Lower explosion limit** no data available
- 9.1.10.2 Upper explosion limit** no data available
- 9.1.11 Vapour pressure** no data available
- 9.1.12 Vapour density** no data available
- 9.1.13 Relative density** 1,39 g/cm³
- 9.1.14 Solubility(ies)**
- 9.1.14.1 Water solubility** 1183 g/L (20°C); 8450 g/L (100°C)
- 9.1.14.2 Fat solubility (solvent - oil to be specified)** partly soluble (benzene, chloroform)
- 9.1.15 Partition coefficient: n-octanol/water** no data available
- 9.1.16 Auto-ignition temperature** no data available
- 9.1.17 Decomposition temperature** no data available
- 9.1.18 Viscosity** 60.000-100.000
- 9.1.19 Explosive properties** no data available
- 9.1.20 Oxidising properties** Oxidising (O)

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9.2 Other information
no data available

SECTION 10. STABILITY AND REACTIVITY

- 10.1 Reactivity**
Stable at normal ambient temperature and pressure. Stable under recommended storage conditions.
- 10.2 Chemical stability**
Stable at normal ambient temperature and pressure. Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions**
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. Hazardous polymerisation will not occur.
- 10.4 Conditions to avoid**
Oxidising properties (liquids). Avoid contact with combustible material (paper, wool, oil).
- 10.5 Incompatible materials**
Incompatible with nitrites, chlorates, chlorides and permanganates. Incompatible with strong acids. Incompatible with strong alkalis. Incompatible with combustible materials.
- 10.6 Hazardous decomposition products**
Nitrogen oxides. Carbon oxides. When heated to decomposition (unconfined) ammonium nitrate produces nitrous oxide, white ammonium nitrate fumes and water. When mixed with strong acids, and occasionally during blasting, it produces an irritating toxic brown gas, mostly of nitrogen dioxide. When molten may decompose violently due to shock or pressure.

SECTION 11. TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects**
The mixture itself has not been tested for toxicological effects. The information below relates to pure ammonium nitrate. The mixture causes eye irritation.
- 11.1.1 Acute toxicity**
No data is available on the product itself. Not classified due to data which are conclusive although insufficient for classification.
- Ammonium nitrate*
Acute oral toxicity: LD50: 2950 mg/kg bw (OECD 401)
Acute dermal toxicity: LD50: > 5000 mg/kg bw (OECD 402)
Acute inhalation toxicity: LC50: > 88.8 mg/l (no guideline followed)
- 11.1.2 Irritation and corrosion**
The mixture causes eye irritation, based on the content of ammonium nitrate (OECD 405).
- 11.1.3 Sensitisation**
No data is available on the product itself. Not classified due to data which are conclusive although insufficient for classification.
- 11.1.4 Subacute, subchronic and prolonged toxicity**
No data is available on the product itself. Not classified due to data which are conclusive although insufficient for classification.
- 11.1.5 STOT-single exposure**
No data is available on the product itself. Not classified due to data which are conclusive although insufficient for classification.
- 11.1.6 STOT-repeated exposure**
No data is available on the product itself. Not classified due to data which are conclusive although insufficient for classification.
- 11.1.7 Aspiration hazard**

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No data is available on the product itself. Not classified due to data which are conclusive although insufficient for classification.

11.1.8 Other information on acute toxicity

No data is available on the product itself.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity****12.1.1 Aquatic toxicity**

Not classified due to data which are conclusive although insufficient for classification. The mixture itself has not been tested for aquatic toxicity or other ecotoxicological effects, and therefore the classification of the mixture is based on the classification of individual components.

Ammonium nitrate

Fish (short-term): 48-h LC50: 447 mg/l (no guideline followed)

Daphnia magna (short-term): 48-h EC50: 490 mg/l (no guideline followed, with potassium nitrate)

Algae: 10-d EC50: > 1700 mg/l (seawater, no guideline followed, performed with potassium nitrate)

Inhibition of microbial activity: 3-h EC50: >1000 mg/l, NOEC: 180 mg/l (OECD 209, with sodium nitrate)

12.1.2 Toxicity to other organisms

No data is available on the product itself.

12.2 Persistence and degradability**12.2.1 Biodegradation**

No data is available on the product itself. Furthermore, standard tests are not applicable for inorganic substance such as ammonium nitrate.

12.2.2 Chemical degradation

No data is available on the product itself.

12.3 Bioaccumulative potential

No data is available on the product itself. Ammonium nitrate has low potential for bioaccumulation (based on substance properties).

12.4 Mobility in soil

No data is available on the product itself. Ammonium nitrate has low potential for adsorption (based on substance properties).

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessments are applicable to substances, not mixtures. According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted for ammonium nitrate since it is inorganic.

12.6 Other adverse effects

No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste codes in accordance with the list of European Waste Catalogue (EWC) should be assigned by the user prior to final disposal. Dispose of product and product residue in accordance with the instructions of the person responsible for waste disposal.

13.1 Waste treatment methods

Refer to local and national waste management regulations and dispose of in accordance with the waste classification.

Suggested European Waste Codes

16 04 waste explosives

16 04 01* waste ammunition

16 04 02* fireworks wastes

16 04 03* other waste explosives

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Waste from residues / unused products

Dispose of product residue in accordance with the instructions of the person responsible for waste disposal. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Suggested European Waste Code for unused packing is 15 01 10* *packing containing residues of or contaminated by hazardous substances*

SECTION 14. TRANSPORT INFORMATION

14.1	UN number	UN3375
14.2	UN proper shipping name	AMMONIUM NITRATE EMULSION or SUSPENSION or GEL, intermediate for blasting explosives, liquid
14.3	Transport hazard class(es)	5.1 (IMDG: EmS F-H, S-Q)
14.4	Packing group	II
14.5	Environmental hazards	Avoid release to the environment.
14.6	Special precautions for users	Use personal protective equipment. TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No data is available on the product itself.

SECTION 15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

The storage of explosives falls under the Seveso II Directive (96/82/EC) on the control of major-accident hazards (OJ No L 10 of 14 January 1997).

EU Member States are obliged to amend the security provisions for the transport of explosives and other dangerous goods in their domestic road and rail transport legislation by 1 July 2005. However, most Member States have additional regulations concerning the control of certain categories of dangerous goods. The Commission adopted improved controls on the transfer of explosives between Member States in April 2004, as a step to make their cross-border transport safer. The controls are contained in Commission Decision 2004/388/EC harmonising the information required, and procedures to be followed during such cross-border transfer.

Council Directive 93/15/EEC (OJ L 121 of 15 May 1993) on the harmonisation of the provisions relating to the placing on the market and supervision of explosives for civil uses (for example for quarrying or demolition works) defines the essential requirements which must be met by explosive conformity tests in order to ensure the free movement of these products without lowering optimum levels of safety and security. It also covers the supervision of transfers of explosives and ammunition.

15.2 Chemical safety assessment

In accordance with Regulation (EC) No. 1907/2006 (REACH) Article 14, a Chemical Safety Assessment has been carried out for ammonium nitrate. A Chemical Safety Assessment has not been carried out for the mixture itself.

SECTION 16. OTHER INFORMATION**16.1 Additions, Deletions, Revisions**

Version: 2.1. Changed contact information, composition, density, updated 16.5.

This safety data sheet is drawn up to comply with the requirements of Regulation (EC) No. 1907/2006 (REACH), as amended by Annex I to Commission Regulation (EU) No. 453/2010 of 20 May 2010.

16.2 Key or legend to abbreviations and acronyms

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-CLP - Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

-DNEL - Derived no-effect level

-DSD - Council Directive 67/548/EEC (Dangerous Substances Directive)

-DPD - Council Directive 1999/45/EC (Dangerous Preparations Directive)

-EC50 - Concentration of the substance that causes 50 % reduction of a certain effect on test organisms

-LC50 - Concentration of the substance that causes 50 % mortality of the test population

-LD50 - Lethal dose of the substance that causes 50 % mortality of the test population

-NOEC - No observed effect concentration

-OECD - Organisation for Economic Co-operation and Development

-PBT/vPvB - Persistent, bioaccumulative and toxic/ very persistent and very bioaccumulative

-PNEC - Predicted no-effect concentration

-REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

-STOT - Specific Target Organ Toxicity

16.3 Key literature references and sources for data

REGULATION (EC) No 1272/2008

16.4 Classification procedure

The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5 List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements

R8	Contact with combustible material may cause fire.
R10	Flammable.
R36	Irritating to eyes.
H302	Harmful if swallowed.
H226	Flammable liquid and vapour.
H272	May intensify fire; oxidizer.

16.6 Emergency telephone number**Europe-wide emergency number: 112****Contact a poison control centre. List of Telephone Numbers :**

AUSTRIA (Vienna Wien) +43 1 406 43 43; **BELGIUM** (Brussels Bruxelles) +32 70 245 245; **BULGARIA** (Sofia) +359 2 9154 409; **CZECH REPUBLIC** (Prague Praha) +420 224 919 293; **DENMARK** (Copenhagen) 82 12 12 12; **ESTONIA** (Tallinn) 112; **FINLAND** (Helsinki) +358 9 471 977; **FRANCE** (Paris) +33 1 40 0548 48; **GERMANY** (Berlin) +49 30 19240; **GREECE** (Athens Athinai) +30 10 779 3777; **HUNGARY** (Budapest) 06 80 20 11 99; **ICELAND** (Reykjavik) +354 525 111, +354 543 2222; **IRELAND** (Dublin) +353 1 8379964; **ITALY** (Rome) +39 06 305 4343; **LATVIA** (Riga) +371 704 2468; **LITHUANIA** (Vilnius) +370 5 236 20 52 or +370 687 53378; **MALTA** (Valletta) 2425 0000; **NETHERLANDS** (Bilthoven) +31 30 274 88 88; **NORWAY** (Oslo) 22 591300; **POLAND** (Gdansk) +48 58301 65 16 or +48 58 349 2831; **PORTUGAL** (Lisbon Lisboa) 808 250 143; **ROMANIA** (Bucharest) +40 21 3183606 **SLOVAKIA** (Bratislava) +421 2 54 77 4166; **SLOVENIA** (Ljubljana) + 386 41 650 500; **SPAIN** (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; **SWEDEN** (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); **UNITED KINGDOM** (London) 112 or 0845 4647 (NHS Direct).

16.7 Recommended restrictions

The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.