



# SAFETY DATA SHEET

## Fordyn

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 28.05.2015

#### 1.1. Product identifier

Product name Fordyn  
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  
T+; R26/27/28,R33  
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] Expl. 1.1; H201  
Acute tox. 2; H330  
Acute tox. 3; H311  
Acute tox. 4; H302  
Eye Irrit. 2; H319  
STOT RE2; H373

#### 2.2. Label elements

##### Hazard Pictograms (CLP)



Signal word

Danger

Hazard statements

H201 Explosive; mass explosion hazard.

	H302 Harmful if swallowed.
	H311 Toxic in contact with skin.
	H319 Causes serious eye irritation.
	H330 Fatal if inhaled.
	H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P250 Do not subject to grinding/shock/friction. P270 Do not eat, drink or smoke when using this product. P281 Use personal protective equipment as required. P372 Explosion risk in case of fire. P380 Evacuate area. 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 No data recorded.

## 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;	50 - 60 %
Ethylene dinitrate	CAS no.: 628-96-6 EC no.: 211-063-0 Index no.: 603-032-00-9	E; R3 T+; R26/27/28 R33 Unst. expl.;H200; Acute tox. 1;H310; Acute tox. 2;H330; Acute tox. 2;H300; STOT RE2;H373;	30 - 35 %
Nitrocellulose (with at least 25 % water)		F; R11	< 2 %
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. For breathing difficulties oxygen may be necessary. Perform artificial respiration if breathing has stopped. IF exposed or concerned: Get medical advice/attention.
Skin contact	Remove contaminated clothing. Wash skin with soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Contact physician if discomfort continues.
Ingestion	Rinse mouth thoroughly. Get immediate medical advice/attention.

### 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.

## 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 skin and eyes. (Applies to the uncartridged substance.) 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 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 locked up. 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
Ethylene dinitrate	CAS no.: 628-96-6	8-hour TWA: 0,03 ppm	2011
	EC no.: 211-063-0	8-hour TWA: 0,2 mg/m <sup>3</sup>	
	Index no.: 603-032-00-9	15 min.: 0,1 ppm	
		15 min.: 0,6 mg/m <sup>3</sup>	

## 8.2. Exposure controls

### Safety signs



#### Respiratory protection

Respiratory protection

In case of inadequate ventilation: Use respiratory equipment with gas filter, type A2.

#### 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

Goggles/face shield are recommended.

#### 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	Plastic mass in cartridges of waxed paper or plastic film.
Colour	Reddish.
Odour	Odourless.
Comments, Odour limit	Not relevant.
Comments, pH (as supplied)	Not relevant.
Comments, Melting point / melting range	Not relevant.
Comments, Boiling point / boiling range	Not relevant.
Comments, Flash point	Not relevant.
Comments, Evaporation rate	Not determined.
Flammability (solid, gas)	Not determined.
Comments, Vapour pressure	Not relevant.
Comments, Vapour density	Not relevant.
Specific gravity	Value: 1,45-1,55 kg/dm <sup>3</sup>
Solubility description	The mixture is almost insoluble. Ammonium nitrate as such is very soluble in water.
Solubility in fat	Ethylene dinitrate is soluble.
Comments, Partition coefficient: n-octanol / water	Ammonium nitrate: <1 Ethylene dinitrate: Log Kow: 1,16 (20 °C)
Comments, Spontaneous combustability	Not determined.
Decomposition temperature	Value: ≥ 160 °C Method of testing: BAM
Comments, Viscosity	Not determined.
Explosive properties	Explosive
Oxidising properties	Ammonium nitrate: oxidizing

Ethylene dinitrate: oxidizing

**9.2. Other information****Other physical and chemical properties**

Comments Not determined.

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Reactivity No dangerous reactions known under conditions of normal use.

**10.2. Chemical stability**

Stability Stable under the prescribed storage conditions.

**10.3. Possibility of hazardous reactions**

Possibility of hazardous reactions None known under normal storage and handling conditions.

**10.4. Conditions to avoid**

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

**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.

**10.6. Hazardous decomposition products**Hazardous decomposition products During fire, toxic gases (CO, CO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>) are formed.**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
Substance	Ethylene dinitrate
LD50 oral	Value: 460 mg/kg Animal test species: Rat
LD50 dermal	Value: 3800 mg/kg Animal test species: Rat

**Other information regarding health hazards**

General The toxicological information applies to the uncartridged product mass.

**Potential acute effects**Irritation May cause skin irritation.  
Corrosivity Not known.**Delayed effects / repeated exposure**Sensitisation Not known.  
Repeated dose toxicity Ethylene dinitrate:  
Oral, NOAEL: 3,04 mg/kg bw/d (chronic, rat)  
Dermal, LOAEL: 15 mg/kg bw/d (chronic, rabbit)**Carcinogenic, Mutagenic or Reprotoxic**Carcinogenicity Not known.  
Teratogenic properties No data recorded.  
Reproductive toxicity No data recorded.  
Other adverse Toxicological effects Not determined.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecotoxicity Not classified as dangerous to the environment. However, the product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters.

### 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
Substance	Ethylene dinitrate
Acute aquatic, fish	Value: 1,9-3,58 mg/l Method of testing: LC50 Duration: 96 h
Acute aquatic, algae	Value: 100 mg/l Method of testing: EC50 Species: <i>Desmodesmus subspicatus</i> Duration: 72 h
Acute aquatic, Daphnia	Value: > 100 mg/l Method of testing: EC50 Species: <i>Daphnia magna</i> Duration: 48 h

### 12.2. Persistence and degradability

Persistence and degradability Ammonium nitrate: biodegradable  
Ethylene dinitrate: slowly biodegradable.

### 12.3. Bioaccumulative potential

Bioaccumulative potential Will not bio-accumulate.

### 12.4. Mobility in soil

Mobility The product contains substances, which are water soluble and may spread in water systems.

### 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.

## 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.  
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

Product classified as hazardous waste  
 handled in the same way as the ones containing products.  
 Yes

## SECTION 14: Transport information

### 14.1. UN number

ADR 0081  
 RID 0081  
 IMDG 0081  
 ICAO/IATA 0081

### 14.2. UN proper shipping name

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

### 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.  
 R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.  
 R33 Danger of cumulative effects.

S-phrases

S16 Keep away from sources of ignition - No smoking.  
 S33 Take precautionary measures against static discharges.  
 S35 This material and its container must be disposed of in a safe way.

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	S36/37 Wear suitable protective clothing and gloves. S41 In case of fire and/or explosion do not breathe fumes. S61 Avoid release to the environment. Refer to special instructions/Safety data sheets. Expl. 1.1; H201; Acute tox. 4; H302; Acute tox. 3; H311; Eye Irrit. 2; H319; Acute tox. 2; H330; STOT RE2; H373;
List of relevant R-phrases (under headings 2 and 3).	R33 Danger of cumulative effects. R36 Irritating to eyes. R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition. R11 Highly flammable. R8 Contact with combustible material may cause fire. R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed. R2 Risk of explosion by shock, friction, fire or other sources of ignition.
List of relevant H-phrases (Section 2 and 3).	H302 Harmful if swallowed. H330 Fatal if inhaled. H300 Fatal if swallowed. H373 May cause damage to organs through prolonged or repeated exposure H310 Fatal in contact with skin. H311 Toxic in contact with skin. H272 May intensify fire; oxidiser. H201 Explosive; mass explosion hazard. H200 Unstable explosives. H319 Causes serious eye irritation.
Important data sources used to construct the safety data sheet	REACH Directive (EC) 1907/2006 CLP Regulation (EC) 1272/2008 Material Safety Data Sheets on raw materials Chemical Safety Report for Ethylene dinitrate.
Version	1
Responsible for safety data sheet	OY FORCIT AB
Comments	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.