

SAFETY DATA SHEET**Fordyn**

The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued 28.05.2015

Revision date 23.08.2018

1.1. Product identifier

Product name Fordyn

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

Telephone number +358 (0)207 440 400

Email forcit@forcit.fi

1.4. Emergency telephone number

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

SECTION 2: Hazards identification**2.1. Classification of substance or mixture**

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 RE 2; 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

PBT / vPvB	The mixture doesn't meet the criteria for classification as PBT or vPvB substances and mixtures.
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 REACH Reg. No.: 01-2119490981-27-0004	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	Unst. Expl.; H200 Acute tox. 1; H310 Acute tox. 2; H330	30 - 35 %

	Acute tox. 2; H300 STOT RE 2; H373	
Nitrocellulose (with at least 25 % water)		< 2 %
Plasticizer	Aquatic Chronic 3; H412	1 - 3 %
Substance comments	The full text for all hazard statements is 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. If breathing stops, provide artificial respiration. 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.
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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.
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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.
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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

Substance	Identification	Value	TWA Year
Ethylene dinitrate	CAS No.: 628-96-6	Country of origin: Finland TWA (8h) : 0,03 ppm TWA (8h) : 0,2 mg/m3 OEL short term value Value: 0,1 ppm OEL short term value Value: 0,6 mg/m3 Comments: Skin	TWA Year: 2018

8.2. Exposure controls

Safety signs



Eye / face protection

Eye protection Goggles/face shield are recommended.

Hand protection

Hand protection Chemical resistant gloves required for prolonged or repeated contact.

Suitable materials Gloves of nitrile rubber, PVA or Viton are recommended.

Skin protection

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

Respiratory protection

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

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 paper or plastic film.

Colour Reddish.

Odour Odourless.

Odour limit Comments: Not relevant.

pH Status: In delivery state
Comments: Not relevant.

Melting point / melting range Comments: Not relevant.

Boiling point / boiling range Comments: Not relevant.

Flash point Comments: Not relevant.

Evaporation rate Comments: Not determined.

Flammability (solid, gas) Not determined.

Vapour pressure	Comments: Not relevant.
Vapour density	Comments: Not relevant.
Specific gravity	Value: 1,45 - 1,55 kg/dm ³
Solubility description	The mixture is almost insoluble. Ammonium nitrate as such is very soluble in water.
Solubility in fat	Ethylene dinitrate is soluble.
Partition coefficient: n-octanol/water	Comments: Ammonium nitrate: <1 Ethylene dinitrate: Log Kow: 1,16 (20 °C)
Spontaneous combustability	Comments: Not determined.
Decomposition temperature	Value: ≥ 160 °C Method: BAM
Viscosity	Comments: 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.
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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

Substance	Ammonium Nitrate
Acute toxicity	<p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Oral Value: 2950 mg/kg Animal test species: Rat Test reference: IUCLID 5</p> <p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Dermal Value: > 5000 mg/kg Animal test species: Rat Test reference: IUCLID 5</p>
Substance	Ethylene dinitrate
Acute toxicity	<p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Oral Value: 460 mg/kg Animal test species: Rat</p> <p>Type of toxicity: Acute Effect tested: LD50 Route of exposure: Dermal Value: 3800 mg/kg Animal test species: Rat</p>

Other information regarding health hazards

General	The toxicological information applies to the uncartridged product mass.
Irritation	May cause skin irritation.
Corrosivity	Not known.
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)
Carcinogenicity, other information	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

Substance	Ammonium Nitrate
Acute aquatic, fish	Value: 447 mg/l Test duration: 48 h Method: LC50 Test reference: IUCLID 5
Substance	Ethylene dinitrate
Acute aquatic, fish	Value: 1,9 - 3,58 mg/l Test duration: 96 h Method: LC50
Substance	Ammonium Nitrate
Acute aquatic, algae	Value: > 1700 mg/l Test duration: 10 d Method: EC50 Test reference: IUCLID 5
Substance	Ethylene dinitrate
Acute aquatic, algae	Value: > 100 mg/l Test duration: 72 h Species: Desmodesmus subspicatus Method: EC50
Substance	Ammonium Nitrate
Acute aquatic, Daphnia	Value: 490 mg/l Test duration: 48 h Method: EC50 Test reference: IUCLID 5
Substance	Ethylene dinitrate
Acute aquatic, Daphnia	Value: > 100 mg/l Test duration: 48 h Species: Daphnia magna Method: EC50
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.

12.2. Persistence and degradability

Persistence and degradability, comments	Ammonium nitrate: biodegradable Ethylene dinitrate: slowly biodegradable.
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12.3. Bioaccumulative potential

Bioaccumulative potential	Will not bio-accumulate.
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12.4. Mobility in soil

Mobility	The product contains substances, which are water soluble and may spread in water systems.
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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, comments	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. 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
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SECTION 14: Transport information

14.1. UN number

ADR / RID / ADN	0081
IMDG	0081
ICAO / IATA	0081

14.2. UN proper shipping name

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

14.3. Transport hazard class(es)

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

14.4. Packing group

Comments	Not determined.
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14.5. Environmental hazards

Comments	Not determined.
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14.6. Special precautions for user

Special safety precautions for user Not determined.

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

IMDG / ICAO / IATA Other information

EmS F-B, S-Y

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

List of relevant H-phrases (Section 2 and 3) H200 Unstable explosives.
H201 Explosive; mass explosion hazard.
H272 May intensify fire; oxidiser.
H300 Fatal if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
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
H412 Harmful to aquatic life with long lasting effects.

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 RE 2; H373

Key literature references and sources for data REACH Directive (EC) 1907/2006
CLP Regulation (EC) 1272/2008
Material Safety Data Sheets on raw materials
Chemical Safety Report for Ethylene dinitrate.

Version 3

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.