1st Identification of the substance / preparation and of the company / undertaking

1.1 Identification of the substance or preparation

1.1.1 Trade name

Exan™

1.1.2 Chemical name

Not applicable, preparation

1.2 Use of the substance / preparation

Explosive for industrial use

1.3 Company / undertaking identification

ORICA Eesti OÜ

Jaama 10

41533 Jõhvi

Estonia

Phone: +372 33 64 611

E-mail address of the competent person responsible for the Safety Data Sheet:

sveta.voloshenjuk@orica.com

1.4 Emergency telephone

+372 33 64 616

2nd Hazards identification

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

3rd Composition / information on ingredients

Dangerous contents	*CAS no.*	*Contents*	Symbol letter	R phrases
Ammonium nitrate	6484-52-2	94 % w/w	O	8-9-44
Diesel fuel	68334-30-5	6 %	Xn, N	65-66, 51/53, 40 Can. cat.3

R8 - Contact with combustible material may cause fire

R9 - Explosive when mixed with combustible material

R40 - Possible risk of irreversible effects

R51/53 - Toxic to aquatic organisms, may cause long term adverse effects in the aquaticenvironment

R65 - Harmful: may cause lung damage if swallowed

R66 - Repeated exposure may cause skin dryness or cracking

4th First aid measures

4.1 General references

Medical help necessary in case of symptoms, e. g. irritation of the respiration tract, which might have been caused by inhalation of dust, vapours or combustion gases.
Bring casualty out of danger as quickly as possible.
Symptoms do not necessarily appear immediately with persons who have inhaled combustion gases. Therefore patients should be kept under medical observation for at least 48 h.

4.2 After inhalation

In case of inhalation of combustion bring victim to fresh air, consult doctor.
If possible provide Dexamethason spray by inhalation.
Give oxygen if necessary.
If unconscious hold and transport in stable side position.
If breathing stops apply artificial respiration.
In case of dust inhalation bring victim to fresh air.
If symptoms do not stop, as e.g. caugh, consult physician.

4.3 After skin contact

Wash off with water, consult doctor if necessary.

4.4 After eye contact

Rinse with water, consult ophthalmic doctor if necessary.

4.5 After swallowing

Flush mouth with plenty of water; consult doctor

4.6 Special references

None

5th Fire-fighting measures

5.1 General references

Keep off unauthorised persons.
Warn neighbourhood announcing risk of explosion.

5.2 Measures in case of adjacent fire (Fire has not yet reached product)

Fight adjacent fire with all available means (water, extinguishing powder etc.).
Prevent fire from reaching product.
Drive vehicle away from fire zone, if applicable.

5.3 Measures in case of product fire (Fire has just reached the product or is about to reach it)

Do not try to extinguish, due to risk of explosion. Immediately evacuate danger zone and seek safe cover.
Warn neighbourhood announcing risk of explosion.

5.3.1 Suitable extinguishing media

No fire-fighting attempts, risk of explosion.

5.3.2 Extinguishing media which shall not be used for safety reasons

Not applicable

5.4 Special exposure hazards arising from the substance or preparation itself, combustion products or resulting gases

Besides the explosion risk in case of fire or heat toxic/harmful gases, vapours and pyrolysis products will be formed of the substance, e. g. Carbon monoxide; Nitrogen oxides (nitrous gases); Ammonia.
Do not inhale combustion-gases/vapours/smoke.
Danger of toxic pulmonary oedema formation.

5.5 Special protective equipment for fire-fighters

None

6th Accidental release measures

6.1 Personal precautions

Avoid skin and eye contact with unpackaged explosives.
Do not inhale dust.

6.2 Environmental precautions

Prevent substance from soaking into soil, waters or drains.

6.3 Methods for cleaning-up

Collect spilled explosives with wood-brooms and plastic-or brass shovels.
Do not use any spark-producing tools (e.g. made of iron or steel).
Transfer into certified labeled containers with foil-bags inside, lock foil with tie-clip or cord.
However do not lock containers themselves (no lid or cover or similar), risk of confinement.
Dispose professionally (see section 13).

7th Handling and storage

7.1 Handling

7.1.1 Precautions for safe handling

Ensure that the room is well-ventilated.
Avoid impact, shock and friction; protect from humidity.
Protect from heat, keep away from sources of heat.
Do not use any spark-producing tools.

7.1.2 Advice on technical measures

Technical measures should only be taken in accordance with national legal requirements on explosives.
If necessary consult the responsible authorities or the manufacturer.

7.2 Storage

7.2.1 Conditions for a safe storage

Keep substance dry, fire-proof and in a well-ventilated place.
Maximum relative humidity 65 %
Recommended storage temperature 0 to +30 ℃.

7.2.2 Recommendations regarding quantity limits

Maximum storage volume should be agreed with national authorities.

7.3 Specific use(s)

Substance is an explosive! Usage only according to existing laws and official permissions.
To be used within 6 months after manufacturing.

8th Exposure controls / personal protection

8.1 Exposure limit values

Presently no exposure limit values for ammonium nitrate and sodium nitrate published.

8.2 Exposure controls

8.2.1 Occupational exposure controls

a) ***Respiratory protection***

Not necessary when properly handled. If limit values might be exceeded use respiratory protection mask with filter A2.

b) ***Hand protection***

Gloves of NBR (Nitrile), Neopren or Viton; Permeation level 5-6 Cat. II according to EN 388. Not necessary if only packaged material is handled.

c) ***Eye protection***

Protective goggles (framed).

d) ***Skin protection***

Work clothes of cotton.

e) ***General protective measures***

Do not eat, drink, and smoke when working.
Change dirty or soaked clothing.
Always wash hands before breaks and at end of work.
Avoid substance contact with skin and eyes.
Avoid spillage and leakage, immediately collect spilled substance (see chapter 6.3).

8.2.2 Environmental exposure controls

Actually no exposure limit values available. Prevent substance from soaking into waters, soil or drains.

9th Physical and chemical properties

9.1 General information

Appearance (state of aggregation, colour)	granulate, reddish
Odour	like mineral oil

9.2 Important health, safety and environmental information

pH	4,5 - 5,5 (10 g/l)
Boiling point / boiling range	Not applicable
Flash point	Not applicable
Flammability	Not applicable
Explosive properties	Given, especially in presence of impurities, if confined, under initiation or strong heat
Oxidizing properties	Like ammonium nitrate and sodium nitrate
Vapour pressure	Not applicable
Relative density	0.83 ±0.05 g/cm^3 (20 ℃)
Solubility	Not applicable
Water solubility	1877 g/l (ammonium nitrate at 20℃)
Partition coefficient: (n-octanol / water)	Not applicable
Viscosity	Not applicable
Vapour density	Not applicable
Evaporation rate	Not applicable

9.3 Other information

Thermal decomposition beginning at	229 ℃

10th Stability and reactivity

10.1 Conditions to avoid

Mechanical influences (e.g. shock, pressure, impact, friction).
Fire, sparks or other ignition sources.
Electrostatic discharges.
Temperatures above 40 ℃.
Substance contact with substances mentioned in chapter 10.2.

10.2 Materials to avoid

Lyes; strong acids.
Product contact with lyes / alkaline substances leads to liberation of ammonia (corrosive).

10.3 Hazardous decomposition products

Carbon monoxide; Nitrogen oxides (nitrous gases); Ammonia.

11th Toxicological information

Ammonium nitrate

Acute toxicity (LD_{50} oral, rat (mg/kg))	*2217*

Slightly irritant (to skin and eyes).
In case of oral uptake gastrointestinal effects and formation of methemoglobin possible, after reduction of nitrate to nitrite, cyanosis.

Diesel fuel

Acute toxicity (LD_{50} oral, rat (mg/kg))	>2000
Acute toxicity (LD_{50} dermal, rabbit (mg/kg))	>2000

Under testing-conditions found to be not irritant to skin or eyes, not sensitizing (skin and respiratory tract).

Practical experience

Repeated substance contact, especially after drying-in of the substance, can lead to skin- and eye-irritation.

12th Ecological information

12.1 Ecotoxicity

Ammonium nitrate

Toxicity to fish:
Generally depending on the species tested.

LC_{50} = 74 mg/l /48 h (Cyprinus carpio)

Toxicity to daphnia:

EC_{50} = 555 mg/l (Daphnia magna)

Toxicity to algae:

IC_{50} = 83 mg/l (Scenedesmus quadricauda)

General remark: Feeding of waters and soil with ammonium nitrate may lead to an overfertilization.

Diesel fuel

Toxicity to fish:

LL_{50} / 96 h = 21 – 230 mg/l (Oncorhynchus mykiss)

Toxicity to daphnia:

EL_{50} /48 h = 6.2 - 210 mg/l (Daphnia magna)

Toxicity to algae:

IL_{50} / 72 h = 10-78 mg/l (Raphidocelis subcapitata)

Diesel fuel is toxic to various aquatic organisms

12.2 Mobility

Exan™-components dissolved in water generally show the mobility that is common for all good water-soluabkle substances. Therefore keep product away from water. In case of accidential release the measures described in chapter 4 have to be taken.

12.3 Persistence and degradability

Ammonium nitrate is a substance the ionogenic components of which are elements of natural circuits, (e.g. the nitrogene circuit). So they can easily be transformed into other elements of this circuit. But also compare section 6.2. The mineral oil component is looked upon being not easily degradable under normal testing-conditions. But under environmental conditions mineral oils are generally regarded to be well biodegradable after adaption of the microorganisms.

12.4 Bio accumulative potential

The substance does not have any relevant bio accumulative potential.

12.5 Results of PBT assessment

No PBT-assessments carried out up to now.

12.6 Other adverse effects

Excessive exposure of ammonium nitrate, sodium nitrate or Exan™ can lead to an over-fertilization of soil and waters. Therefore a careful handling of the substance is mandatory.

13th Disposal considerations

Substance/preparation	Wastes and receptacles afflicted with explosives must be eliminated in a safeguard manner, according to the national regulations for explosives by persons authorized to handle this substances.
Contaminated packaging	To be handled in the same way as the substance.

14th Transport information

ADR / RID - class	1.1D
UN number	0082
Packing method	P116
Special packaging provisions as well as Packing method	PP61, PP62, PP65 IBC100
Special packaging provisions	B9
Proper shipping name	EXPLOSIVE, BLASTING, TYPE B (Exan™)
IMDG / GGVSee - class	1.1D
UN number	0082
EmS-no.	F-B, S-Y
ICAO-IATA-DGR	prohibited

15th Regulatory information

Labelling according to Directives 67/548/EEC and 1999/45/EC

Hazard symbols and indications of danger for the substance / product

E, Explosive

Preparation contains the following hazardous components

Ammonium nitrate

R- Phrases

2 - Risk of explosion by shock, friction, fire or other sources of ignition.

S- Phrases

35 - This material and its container must be disposed of in a safe way.

Other regulations

Compare national regulations for handling of explosives

16th Other information

Responsible department for this Data sheet

Qualtiy control department
Svetlana Voloshenjuk
Phone number: +372 33 64 638

This Safety Data Sheet is handed only in the form of a machine-written original document, any copies are not authorized.
The information contained is based on the present state of our knowledge.
It characterizes the product with regard to the appropriate safety precautions, but does not represent any guarantee with regard to product properties fixed by contract.
As being machine-written this Safety Data Sheet is not signed.