

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name

Eurodyn™ 2000

Product no.

-

REACH registration number

Not applicable

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

Relevant identified uses of the substance or mixture

SU2a - Mining (without offshore industries)

Uses advised against

-

The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address

Orica UK Limited
4 Stonecrop
North Quarry Business Pk
Appley Bridge
Wigan WN6 9DL
United Kingdom
Phone +44 1942 256 100

Contact person

sds.emea@orica.com

E-mail

sds.emea@orica.com

SDS date

2018-05-07

SDS Version

2.0

1.4. Emergency telephone number

Contact The National Poisons Information Service (dial 111, 24 h service). See section 4 "First aid measures".

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Expl. 1.1; H201
Acute Tox.; H300
Acute Tox.; H310
Acute Tox.; H330
STOT RE 2; H373

See full text of H-phrases in section 16.

2.2. Label elements

Hazard pictogram(s)



According to EC-Regulation 2015/830

Signal word

Danger

Hazard statement(s)

Explosive; mass explosion hazard. (H201)

Safety statement(s)

- General -
- Prevention
 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210).
 - Wear protective gloves/protective clothing/eye protection/face protection. (P280).
 - Keep only in original packaging. (P234).
 - Do not subject to grinding/shock/friction. (P250).
- Response
 - In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives. (P370+P372+P380+P373).
- Storage -
- Disposal -

Identity of the substances primarily responsible for the major health hazards

Ethylene dinitrate

2.3. Other hazards

Not applicable

Additional labelling

Not applicable

Additional warnings

Not applicable

VOC

Not applicable

SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME: Ammonium nitrate
 IDENTIFICATION NOS.: CAS-no: 6484-52-2 EC-no: 229-347-8 REACH-no: 01-2119490981-27
 CONTENT: 60-80%
 CLP CLASSIFICATION: Ox. Liq. 3, Eye Irrit. 2
 H272, H319

NAME: Ethylene dinitrate
 IDENTIFICATION NOS.: CAS-no: 628-96-6 EC-no: 211-063-0 REACH-no: 01-2119492860-31 Index-no: 603-032-00-9
 CONTENT: 25-40%
 CLP CLASSIFICATION: Unst. Expl., Acute Tox. 2, Acute Tox. 1, STOT RE 2
 H200, H300, H310, H330, H373

(*) See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

ATEmix(inhale, vapour) = 1,456 - <= 2
 ATEmix(Dermal) = 145,456 - <= 200
 ATEmix(oral) = 14,544 - 21,816
 Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = 0,6752 - < 1

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. The doctor can contact The National Poisons Information Service (dial 111, 24 h service). Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

In case of inhalation of decomposition products, affected person should be moved into fresh air and kept

still. If breathing is irregular or stopped, administer artificial respiration.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with soap and water. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses and open eyes widely. Flush eyes with water or saline water (20-30°C) for at least 15 minutes. Seek medical assistance and continue flushing during transport.

Ingestion

In the case of ingestion, contact a doctor immediately and bring the safety data sheet or label. If the person is conscious, give them water. DO NOT try to induce vomiting, unless this is recommended by a doctor. Hold head facing down to prevent vomit returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

Burns

Rinse with water until the pain stops then continue to rinse for a further 30 minutes.

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

Headache, Methaemoglobinaemia.

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

Nothing special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

DO NOT attempt firefighting, risk of explosion.

5.2. Special hazards arising from the substance or mixture

The product is an explosive. In case of fire, the following products may be liberated: Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂), Ammonia (NH₃).

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Restrict the number of action force members in the hazard area. Do not inhale explosion and combustion gases. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Measures in case of adjacent fire (Fire has not yet reached product): Co-ordinate fire-fighting measures to the fire surroundings. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely.

Measures in case of product fire (Fire has just reached the product or is about to reach it): No fire-fighting attempts, risk of explosion. Immediately evacuate danger zone and seek safe cover.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid contact with the substance. Wear suitable protective equipment before handling. Follow emergency procedures. Evacuate the danger area and notify your supervisor. Ask for assistance from a competent person.

For emergency responders: Close off the hazard area. Ask for assistance from a competent person.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

6.3. Methods and material for containment and cleaning up

Use only non-sparking tools. Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

See section on "Disposal considerations" in regard of handling of waste. See section on 'Exposure controls/personal protection' for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Only to be handled by authorised persons. The explosives must be under supervision and kept away from unauthorised persons. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not subject to grinding, shock, friction. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed outside of the workplace. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Store in original packaging if possible. Explosives and explosive articles should be stored in accordance with the licence issued by the relevant national authority. Store under cool conditions. Store under dry conditions. Stable under normal storage conditions. Maximum storage quantity should be agreed with national authorities. Store in a well-ventilated place. Store in a closed container.

▼ Storage temperature

Best stored between 0°C and 50°C.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

Ammonia, anhydrous

Long-term exposure limit (8-hour TWA reference period): 25 ppm | 18 mg/m³

Short-term exposure limit (15-minute reference period): 35 ppm | 25 mg/m³

Nitrogen monoxide

Long-term exposure limit (8-hour TWA reference period): 25 ppm | 31 mg/m³

Short-term exposure limit (15-minute reference period): 35 ppm | 44 mg/m³

Carbon monoxide

Long-term exposure limit (8-hour TWA reference period): 30 ppm | 35 mg/m³

Short-term exposure limit (15-minute reference period): 200 ppm | 232 mg/m³

Carbon dioxide

Long-term exposure limit (8-hour TWA reference period): 5000 ppm | 9150 mg/m³

Short-term exposure limit (15-minute reference period): 15000 ppm | 27400 mg/m³

▼ DNEL / PNEC

DNEL (Ammonium nitrate): 21.3 mg/kg bw/d

Exposure: Dermal

Duration of Exposure: Long term – Systemic effects - Workers

DNEL (Ammonium nitrate): 37.6 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term – Systemic effects - Workers

DNEL (Ethylene dinitrate): 0.085 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term

PNEC (Ammonium nitrate): 0.45 mg/l

Exposure: Freshwater

PNEC (Ammonium nitrate): 0.045 mg/l

Exposure: Marine water

PNEC (Ammonium nitrate): 4.5 mg/l

Exposure: Intermittent release

PNEC (Ammonium nitrate): 18 mg/l

Exposure: Sewage Treatment Plant

PNEC (Ethylene dinitrate): 3 µg/l

Exposure: Freshwater

PNEC (Ethylene dinitrate): 0.3 µg/l

Exposure: Marine water

PNEC (Ethylene dinitrate): 19 µg/l

Exposure: Intermittent release

According to EC-Regulation 2015/830

PNEC (Ethylene dinitrate): 1.3 mg/l
Exposure: Sewage Treatment Plant

PNEC (Ethylene dinitrate): 4 µg/kg dw
Exposure: Freshwater sediment

PNEC (Ethylene dinitrate): 0.4 µg/kg dw
Exposure: Marine water sediment

PNEC (Ethylene dinitrate): 2.5 µg/kg dw
Exposure: Soil

8.2. Exposure controls

Compliance with the accepted occupational exposure limits values should be controlled on a regular basis.

General recommendations

Observe general occupational hygiene standards.

Exposure scenarios

In the event exposure scenarios are appended to the safety data sheet, the operational conditions and risk management measures in these shall be complied with.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures

Airborne gas and dust concentrations must be kept at a minimum and below current limit values (see above). Installation of an exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure emergency eyewash and -showers are clearly marked.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Excessive exposure of ammonium nitrate can lead to an over-fertilization of soil and waters, therefore careful handling of the product is mandatory.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

If ventilation at the work place is insufficient, use a half- or full mask with an appropriate filter or an air-supplied breathing apparatus depending on the specific work situation and how long you will be using the product.

Skin protection

Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product.

Hand protection

Suitable material: NBR (nitrile rubber), EN 388.

Eye protection

Eye glasses with side protection, EN 166.

SECTION 9: Physical and chemical properties

▼ 9.1. Information on basic physical and chemical properties

Form	Solid
Colour	Red
Odour	Sharp/pungent
Odour threshold (ppm)	No data available.
pH	No data available.
Viscosity (40°C)	No data available.
Density (g/cm ³)	1,4

Phase changes

Melting point (°C)	No data available.
Boiling point (°C)	No data available.
Vapour pressure	No data available.
Decomposition temperature (°C)	No data available.
Evaporation rate (n-butylacetate = 100)	No data available.

Data on fire and explosion hazards

Flash point (°C)	No data available.
Ignition (°C)	No data available.
Auto flammability (°C)	No data available.
Explosion limits (% v/v)	No data available.
Explosive properties	Explosive
Oxidising properties	Oxidising properties.

Solubility

Solubility in water	Insoluble
n-octanol/water coefficient	No data available.

9.2. Other information

Solubility in fat (g/L)	No data available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Product is an explosive.

▼ 10.2. Chemical stability

Shelf life: 2 years.

The product is stable under the conditions, noted in the section "Handling and storage".

10.3. Possibility of hazardous reactions

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

▼ 10.4. Conditions to avoid

Mechanical influences (e.g. shock, pressure, impact, friction). Fire, sparks or other ignition sources.

▼ 10.5. Incompatible materials

Reducing agent, Acids, Alkalis, Combustible products, Metal powders, Chromates, Zinc, Copper, Copper alloys, Chlorates, Nitrites.

10.6. Hazardous decomposition products

Ammonia (NH₃), Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

▼ Acute toxicity

Substance: Ethylene dinitrate
Species: Rat
Test: LD50
Route of exposure: Oral
Result: 616 mg/kg bw

Substance: Ethylene dinitrate
Species: Rat
Test: LD50
Route of exposure: Dermal
Result: 3800 mg/kg bw

Substance: Ammonium nitrate
Species: Rat
Test: LD50
Route of exposure: Oral
Result: 2950 mg/kg

Substance: Ammonium nitrate
Species: Rat
Test: LD50
Route of exposure: Dermal
Result: >5000 mg/kg

According to EC-Regulation 2015/830

Skin corrosion/irritation

No data available.

Serious eye damage/irritation

No data available.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

STOT-single exposure

No data available.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available.

Long term effects

Nothing special

SECTION 12: Ecological information

▼ 12.1. Toxicity

Substance: Ethylene dinitrate

Species: Fish

Test: LC50

Duration: 96h

Result: 1.9 mg/l

Substance: Ethylene dinitrate

Species: Fish

Test: LOEC

Duration: 96h

Result: 0.2 mg/l

Substance: Ethylene dinitrate

Species: Daphnia

Test: EC50

Duration: 48h

Result: >100 mg/l

Substance: Ethylene dinitrate

Species: Daphnia

Test: NOEC

Duration: 48h

Result: 100 mg/l

Substance: Ethylene dinitrate

Species: Algae

Test: EC50

Duration: 72h

Result: 100 mg/l

Substance: Ethylene dinitrate

Species: Algae

Test: LOEC

Duration: 72h

Result: 32 mg/l

Substance: Ethylene dinitrate

Species: Algae

Test: NOEC

Duration: 72h

Result: 10 mg/l

Substance: Ammonium nitrate

Species: Fish

Test: LC50

According to EC-Regulation 2015/830

Duration: 48h
Result: 447 mg/l

Substance: Ammonium nitrate
Species: Daphnia
Test: EC50
Duration: 48h
Result: 490 mg/l

Substance: Ammonium nitrate
Species: Algae
Test: EC50
Duration: 10d
Result: 1700 mg/l

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BCF
No data available.			

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

12.6. Other adverse effects

Nothing special

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Burn under supervision of an expert at a government-approved explosive burning ground or destroy, by detonation in boreholes, in accordance with applicable local, provincial and federal laws.

Product is covered by the regulations on hazardous waste.

Waste

EWC code

16 04 03* other waste explosives

Specific labelling

-

Contaminated packing

Contaminated packaging must be disposed of similarly to the product.

SECTION 14: Transport information

14.1 – 14.4

This product is within scope of the regulations of transport of dangerous goods.

ADR/RID

14.1. UN number	0081
14.2. UN proper shipping name	EXPLOSIVE, BLASTING, TYPE A
14.3. Transport hazard class(es)	1.1D
14.4. Packing group	II
Notes	-
Tunnel restriction code	B1000C

IMDG

UN-no.	0081
Proper Shipping Name	EXPLOSIVE, BLASTING, TYPE A
Class	1.1D
PG*	II
EmS	F-B, S-X
MP**	No
Hazardous constituent	-

According to EC-Regulation 2015/830

IATA/CAO

UN-no.	0081
Proper Shipping Name	EXPLOSIVE, BLASTING, TYPE A
Class	1.1D
PG*	II

14.5. Environmental hazards

-

14.6. Special precautions for user

Product is an explosive.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No data available

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information

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

Restrictions for application

People under the age of 18 shall not be exposed to this product cf. Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

Industrial use only.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education

-

Additional information

Not applicable

Seveso

Seveso III Part 1: H2, P1a

Seveso III Part 2: Ammonium nitrate, Ammonia, anhydrous

Sources

Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677. The Stationery Office, 2002.

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 (CLP).

EC regulation 1907/2006 (REACH).

The Control of Major Accident Hazards (COMAH) Regulations 2015.

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H200 - Unstable explosives.

H272 - May intensify fire; oxidiser.

H300 - Fatal if swallowed.

H310 - Fatal in contact with skin.

H319 - Causes serious eye irritation.

H330 - Fatal if inhaled.

H373 - May cause damage to organs through prolonged or repeated exposure^a.

The full text of identified uses as mentioned in section 1

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Additional label elements

Not applicable

Other

In accordance with Regulation (EC) No. 1272/2008 (CLP) the evaluation of the classification of the mixture is based on:

The classification of the mixture in regard of physical hazards has been based on experimental data.

The classification of the mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP)

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

The safety data sheet is validated by

Thomas Lagerström

Date of last essential change

(First cipher in SDS version)

2017-05-31(1.0)

Date of last minor change

(Last cipher in SDS version)

2017-05-31

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