

FortisTM Coal ANE

SDS no. : 4021
Issue : 01
Date of revising : 2009-11-18

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

1.1 Identification of the substance or preparation

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1.2 Use of the substance / preparation

Intermediate for the production of blasting explosives.

1.3 Company / undertaking identification

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1.4 Emergency telephone

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2 Hazards identification

Classification of Substance / Preparation

Classification according to Regulation (EC) No. 1272/2008, Annex VII

Ox. Sol. 2 · H272 · EUH044

Classification according to directive 67/548/EEC or directive 1999/45/EC

R44 – Risk of explosion if heated under confinement.

Additional hazard statements for human and environment

The preparation is potentially explosive according to the german Hazardous Substances Ordinance (GefStoffV).

3 Composition / information on ingredients

Dangerous contents	CAS no.	EINECS no	Contents	Classification according to regulation (EC) no. 1272/2008	Classification according to directive 67/548/EEC
Ammonium nitrate	6484-52-2	229-347-8	63 - 78 Gew. %	Ox. Sol. 1 · H271	O · R8-9
Sodium nitrate	7631-99-4	231-554-3	0 - 13 Gew. %	Ox. Sol. 3 · H272 Akut. Tox. 4 · H302	O · R8; Xn · R22

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Additional remarks

Preparation equates to the preparation limits of group E according to Annex III No 6 of Hazardous Substances Ordinance (GefStoffV) and the German technical rule of hazardous Substances 511 (TRGS 511 (Preparations that occur as water in oil emulsions and that are used as precursor products for the manufacture of explosives.)

Substances with prescribed EC-limit value: none

The wording of the cited R-phrases is given in section 16.

4 First aid measures

4.1 General references

Medical help necessary in case of symptoms, e. g. irritation of the respiration tract, which are directly related to the inhalation of dust, vapours or combustion gases.

Evacuate the Casualty under consideration of self protection as soon as possible out of the hazard area.

4.2 After inhalation

Bring victim to fresh air, consult doctor.

Give oxygen if necessary.

If unconscious hold and transport in stable side position, consult doctor immediately.

If breathing stops apply artificial respiration, consult doctor immediately.

4.3 After skin contact

Remove contaminated clothing.

Wash off with water and soap, consult doctor if necessary.

4.4 After eye contact

Flush at least 15 minutes with plenty of water and consult doctor.

4.5 After swallowing

Flush mouth with plenty of water and consult doctor.

4.6 Special references

If possible provide Dexamethason spray by inhalation after inhalation.

Symptoms do not necessarily appear immediately in persons who have inhaled combustion gases

Patients should be kept under medical observation for at least 48 h.

5 Fire-fighting measures

5.1 General references

Keep unauthorised persons away.

Warn neighbourhood announcing risk of explosion.

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

Use Extinguishing agent aligned to the surrounding fire.
Use all available agents (Water, extinguishing powder etc.) to avoid that Product / Preparation will be captured by the fire.
If possible remove product container out of the hazard area.

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

Product may be inflamed after longer or intensive contact with ignition sources.
Risk of explosion if heated under confinement.
Contains oxidizing components.
Cool Container with water.
Use full water jet extinction.
Use water spray to condens fumes.
For reasons of environmental protection hold Extinguishing agent back

5.3.1 Suitable extinguishing media

Extinguish with water only.

5.3.2 Extinguishing media which shall not be used for safety reasons

Do not use any confining extinguishing media, risk of explosion.

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

In case of fire or heat toxic/harmful gases, vapours and pyrolysis products may be formed of the substance, e. g. Carbon monoxide; Nitrogen oxides (nitrous gases); Ammonia.
Do not inhale fire-gases / vapours / smoke.
Danger of toxic lung oedema formation.

5.5 Additional remarks

Restrict the number of action force members in the hazard area.

Avoid contact to combustible substances.

In case of fire or heat toxic/harmful gases, vapours and pyrolysis products may be formed of the substance, e. g. Carbon monoxide; Nitrogen oxides (nitrous gases); Ammonia.
Do not inhale fire-gases / vapours / smoke.
Danger of toxic lung oedema formation.

6 Accidental release measures

6.1 Personal precautions

Avoid skin and eye contact.

6.2 Environmental precautions

Prevent substance from soaking into soil, waters or drains.

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6.3 *Methods for cleaning-up*

If possible close leakage.
Collect spilled explosive mass with suitable tools.
Don't use sawdust or other combustible materials to gather or cover this substance.
Don't use plugs/cotters made out of organic material (e.g. wood) to close a leakage.
Do not use any spark-producing tools.
Fill into marked sealable containers.
Dispose professionally (see section 13).

6.4 *Additional remarks*

Inform the responsible authority if substance spills into water or canalisation.

7 Handling and storage

7.1 *Handling*

7.1.1 *Precautions for safe handling*

Ensure that the room is well-ventilated.
Protect from heat, keep away from sources of heat.
Do not smoke.
Keep away from ignition sources and open fire.

7.1.2 *Advice on technical measures*

Do not use any spark-producing tools.
Avoid contact to combustible substances.

7.2 *Storage*

7.2.1 *Conditions for a safe storage*

Keep substance fire-proof and in a well-ventilated place.
Maximum storage temperature 80 °C.
In case of tempered storage the temperature should not be exceeded by 65 °C.

7.2.2 *Recommendations regarding quantity limits*

Maximum storage volume should be agreed with national authorities.

7.3 *Specific use(s)*

Intermediate for the production of blasting explosives.
Product for industrial use only.

8 Exposure controls / personal protection

8.1 *Exposure limit values*

At the moment no exposure limit values are fixed for the individual material components.

8.2 *Exposure controls*

Technical arrangements and usage of adequate operation methods, as given in section 7, takes priority over the application of personal protective equipment.

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8.2.1 Occupational exposure controls

Workplace exposure limit (WEL) Germany

AMMONIUM NITRATE: EC-No.: 229-347-8; CAS-No.: 6484-52-2

spezifikation: -/
limit: -/
peak limiting: -/
teratogenic: -/

SODIUM NITRATE: EC-No.: 231-554-3; CAS-No.: 7631-99-4

spezifikation: -/
limit: -/
peak limiting: -/
teratogenic: -/

Possible products of decomposition:

CARBON DIOXIDE: EC-No.: 204-696-9; CAS-No.: 124-38-9

spezifikation: TRGS 900 – Workplace exposure limit (DFG, EU, 01/2006)
limit: 5000 ppm / 9100 mg/m³
peak limiting: 2 (II)
teratogenic: no information

CARBON MONOXIDE: EC-No.: 211-128-3; CAS-No.: 630-08-0

spezifikation: TRGS 900 – Workplace exposure limit (DFG, 01/2006)
limit: 30 ppm / 35 mg/m³
peak limiting: 1 (II)
teratogenic: Z Substance, The risk of a teratogenic effect cannot be excluded even when complying with the workplace exposure limit value (AGW) and the biological limit value (BGW).

NITROGEN DIOXIDE: EC-No.: 233-272-6; CAS-No.: 10102-44-0

spezifikation: processing list TRGS 900 (DFG, 03/2006)
limit: 5 ppm / 9,5 mg/m³
peak limiting: =1=
teratogenic: no information

NITROGEN MONOXIDE: EC-No.: 233-271-0; CAS-No.: 10102-43-9

spezifikation: no information
limit: no information
peak limiting: no information
teratogenic: no information

AMMONIA: EC-No.: 231-635-3; CAS-No.: 7664-41-7

spezifikation: TRGS 900 – Workplace exposure limit (DFG, EU, 12/2007)
limit: 20 ppm / 14 mg/m³
peak limiting: 2 (I)
teratogenic: Y Substance, the risk of a teratogenic effect might not be feared provided the workplace exposure limit value (AGW) and the biological limit value (BGW) is complied with.

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Community Indicative Occupational Exposure Limit

AMMONIUM NITRATE: EC-No.: 229-347-8; CAS-No.: 6484-52-2
spezifikation: no information
Short term exposure limit (STEL): no information
Time weighted average (8 h TWA): no information

SODIUM NITRATE: EC-No.: 231-554-3; CAS-No.: 7631-99-4
spezifikation: no information
Short term exposure limit (STEL): no information
Time weighted average (8 h TWA): no information

Possible products of decomposition:

CARBON DIOXIDE: EC-No.: 204-696-9; CAS-No.: 124-38-9
spezifikation: 2006/15/EC
Short term exposure limit (STEL): no information
Time weighted average (8 h TWA): 5000 ppm / 9000 mg/m³

CARBON MONOXIDE: EC-No.: 211-128-3; CAS-No.: 630-08-0
spezifikation: Draft 11280/3/02 under 98/24//EC
Short term exposure limit (STEL): 100 ppm / 117 mg/m³
Concentration may not exceed limit value during a length of time of 15 minutes.
Time weighted average (8 h TWA): 20 ppm / 23 mg/m³

NITROGEN DIOXIDE: EC-No.: 233-272-6; CAS-No.: 10102-44-0
spezifikation: Draft 11280/3/02 under 98/24//EC
Short term exposure limit (STEL): no information
Time weighted average (8 h TWA): 0,2 ppm

NITROGEN MONOXIDE: EC-Nr.: 233-271-0; CAS-No.: 10102-43-9
spezifikation: no information
Short term exposure limit (STEL): no information
Time weighted average (8 h TWA): no information

AMMONIA: EC-No.: 231-635-3; CAS-No.: 7664-41-7
spezifikation: 2000/39/EC
Short term exposure limit (STEL): 50 ppm / 36 mg/m³
Concentration may not exceed limit value during a length of time of 15 minutes.
Time weighted average (8 h TWA): 20 ppm / 14 mg/m³

Personal Protective Equipment

The personal protection equipment is to be selected in its execution as a function of dangerous material concentration and dangerous material quantity job-specifically.

a) Respiratory protection

Not necessary when properly handled.

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b) Hand protection

Gloves of rubber or plastic. Consider national guidelines.

c) Eye protection

Protective goggles (framed). Consider national guidelines.

d) Skin protection

Work clothes of cotton. Consider national guidelines.

e) General protective measures

Do not eat, drink, and smoke when working.
Remove all strongly contaminated or soaked clothing.
Always wash hands before breaks and at end of work.
Avoid substance contact with skin and eyes.
Avoid spillage and leakage.

8.2.2 Environmental exposure controls

Avoid release to the environment, if necessary carry out measures according to chapter 6 and 7.

9 Physical and chemical properties

9.1 General information

Colour pasty mass (solid)
Odour like mineral oil

9.2 Important health, safety and environmental information

pH inapplicable
Boiling point / boiling range inapplicable
Flash point inapplicable
Flammability inapplicable
Explosive properties if confined
Oxidizing properties contains ammonium nitrate
Vapour pressure not applicable
Relative density 1.35 – 1.40 g/cm³ (20 °C)
Solubility not applicable
Water solubility not applicable
Partition coefficient: (n-octanol / water) not applicable
Viscosity 40.000 – 80.000 mPas (20 °C)
Vapour density not applicable
Evaporation rate not applicable

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9.3 Other information

After the results of the GHS testseries 8 (a) to 8 (c) in accordance with regulation (EC) No. 1272/2008 for the classification of nitrate of ammonia emulsions, - suspensions or - gel the product is not an explosive mixture. The product can be classified as igniting (oxidizing) working solid and/or as intermediate product for the production of explosives.

10 Stability and reactivity

10.1 Conditions to avoid

Temperature above 65 °C.

10.2 Materials to avoid

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

10.3 Hazardous decomposition products

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

11 Toxicological information

Toxicological tests

No data over the product available.

Experience in practice

Repeated contact with mineral oils (vapours and liquids) may cause irritations to skin and eyes.

Data of the ingredients

Substance / Individual component	Acute toxicity (LD ₅₀ oral, rat (mg/kg))
Fortis TM Coal ANE	>2000
Ammonium nitrate	2217
Sodium nitrate	3430
Mineral oil	>4300

12 Ecological information

12.1 Ecotoxicity

Toxicity to fish - Species Leuciscus idus
Test result LC 50 = 825 mg/l

Inhibition of microbiological activity - Species Pseudomonas putida
Test result LC 10 = 6000 mg/l

FortisTM Coal ANE is practically insoluble in water.
Accidental water contact with the product bears only little risks of water contamination.

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12.2 Mobility

At the moment no information available.

12.3 Persistence and degradability

Sodium- and ammonium nitrate can also occur in nature as components of ecological cycles like e.g. the nitrogen cycle. Also see chapter 12.6.
Mineral oils were generally found to be not easily biodegradable under normal standardized test conditions. However under environmental conditions they showed to be long-term-biodegradable.

12.4 Bio accumulative potential

At the moment no information available.

12.5 Results of PBT assessment

At the moment no information available.

12.6 Other adverse effects

Feeding of waters and soil with ammonium nitrate as well as sodium nitrate may lead to an overfertilization.
Mineral oils are toxic to various aquatic organisms.

13 Disposal considerations

Substance / preparation	Waste and receptacles afflicted with explosive must be eliminated in safeguarded manner.
Contaminated packaging	Contaminated containers can be cleaned by treatment with hot water (e.g. by flushing-out). Prior to its disposal the mineral oil contained in the waste-water should be separated, e.g. by an oil-trap. Anionic or non-anionic tensides can be added to the subsequent cleaning process. As the preparation contains mineral oils, appropriate waste water treatment should be regarded. The authorities' regulations should be complied with.

14 Transport information

Ground transport (ADR / RID / ADN / GGVSEB)

Class	5.1 Oxidizing Agent
Hazard label	5.1
UN no.	3375
Proper shipping name	AMMONIUM NITRATE EMULSION or SUSPENSION or GEL, intermediate for blasting explosives, solid
Packing group	II
Hazard number	50
Tunnel restriction code (ADR)	2 (E)

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Ship transport (IMDG-Code / GGVSee)

Class	5.1 Oxidizing Agent
Hazard label	5.1
UN no.	3375
Proper shipping name	AMMONIUM NITRATE EMULSION or SUSPENSION or GEL, intermediate for blasting explosives, solid
Packing group	II
Marine pollutant	No
EmS no.	F-H, S-Q

Air transport (ICAO-TI / IATA-DGR)

Hazard label	5.1 Oxidizing Agent
UN no.	3375
Proper shipping name	AMMONIUM NITRATE EMULSION or SUSPENSION or GEL, intermediate for blasting explosives, solid
Packing group	II
Special provisions	-

15 Regulatory information

Chemical safety assessment

A chemical safety assessment for the ingredients is not present.

Labeling according to Hazardous Substances Ordinance

Ammonium nitrate containing Preparation according to Group E (Preparations that occur as water in oil emulsions and that are used as precursor products for the manufacture of explosives.)

R44: Risk of explosion if heated under confinement.

S17: Keep away from combustible material.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36: Wear suitable protective clothing.

Preparation contains the following hazardous components

Ammonium nitrate, Sodium nitrate

Labelling according to Regulation (EC) No. 1272/2008

Pictogram(s) and Signalword of the Product



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Signal word

Danger

Danger determining component for labeling

Not applicable

Hazard statements

H272: May intensify; fire; oxidizer.
EUH044: Risk of explosion if heated under confinement.

Precautionary statements

P210: Keep away from heat / sparks / open flames / hot surfaces. – No smoking.
P221: Take any precaution to avoid mixing with combustibles.
P280: Wear eye protection.
P370+378: In case of fire: Use water for extinction.

German National Regulations

Approval conditions must be respected.

Water pollution class WGK 1 (weakly endangering to water).
Compare to this also the chapter 12.1.
Self classification with consideration of the ingredients.

16 Other information

Further Applicable EC-directives and EC-regulations

Directive 1999/45/EC (Dangerous Preparation Directive)
Directive 67/548/EEC (Dangerous Substance Directive)
Regulation (EC) No. 1907/2006 (REACH)
Regulation (EC) No. 1272/2008 (GHS)

Restrictions of use

Product for industrial use only

R-phrases referred in section 2 and 3

8 Contact with combustible material may cause fire.
9 Explosive when mixed with combustible material.
22 Harmful if swallowed.
44 Risk of explosion if heated under confinement.

Reference: Hommel; Handbuch der gefährlichen Güter, bulletin no. 28 and 147

Changes in relation to the last version

The available safety data sheet was completely revised.

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Technical contact point

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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.