### **DL-Methionine Feed Grade**

 Material no.
 Version
 2.5 / REG\_EU

 Specification
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#### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### **Product information**

Trade name : DL-Methionine Feed Grade

Company : Evonik Degussa GmbH

Health & Nutrition Abteilung HN-M-QR Postfach 1345 D-63403 Hanau

Telephone : +49 (0)6181/59-2024
Telefax : +49 (0)6181/59-72024
Email address : FA-MSDS@evonik.com
Emergency telephone number : +49 (0)2236/76-2222

Emergency telephone

number(Telefax)

: +49 (0)2236/76-2026

Use of the Substance /

Preparation

: Feed Additive

## 2. HAZARDS IDENTIFICATION

### Additional safety information for humans and the environment

Not applicable.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

 Chemical Name
 : DL-Methionine

 Formula
 : C5 H11 N O2 S

 CAS-No.
 : 59-51-8

 EC-No.
 : 200-432-1

#### 4. FIRST AID MEASURES

## Inhalation

In case product dust is released: Possible discomfort: cough, sneezing Move victims into fresh air.

### Skin contact

No hazards which require special first aid measures.

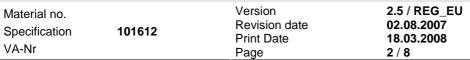
#### Eye contact

Possible discomfort is due to foreign substance effect. Rinse thoroughly with plenty of water keeping eyelid open. In case of persistent discomfort: Consult an ophthalmologist.

#### Ingestion

Have the mouth rinsed with water.

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after absorbing large amounts of substance: Consult a physician.

## Notes to physician

after absorbing large amounts of substance:

Possible discomfort: nausea, vomiting

Treatment of symptoms, administration of activated charcoal, acceleration of the gastro-intestinal tract.

#### 5. FIRE-FIGHTING MEASURES

## Suitable extinguishing media

water, foam, mist

## Extinguishing media which must not be used for safety reasons

carbon dioxide (CO2)

### Specific hazards during fire fighting

May be released in case of fire: hydrocyanic acid, flammable smouldering gases, NOX. sulphur oxides, carbon monoxide, carbon dioxide.

### Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

### **Further information**

Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.

Fire residues should be disposed of in accordance with the regulations.

### **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions**

Wear personal protective equipment.

Keep unauthorised persons away.

#### **Environmental precautions**

Do not allow the product into the following compartments: groundwater

### Methods for cleaning up

Absorb mechanically avoiding production of dust.

## 7. HANDLING AND STORAGE

# Handling

## Safe handling advice

Handle in accordance with good industrial hygiene and safety practices.

#### Advice on protection against fire and explosion

Combustible

Keep away from sources of ignition - No smoking.

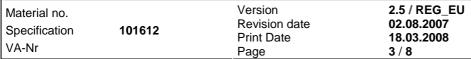
Avoid dust formation.

Must be rendered inert for grinding.

VDI 2263 "Dust fires and dust explosions; dangers, evaluation, preventive measures."

Ensure there are sufficient retaining facilities for water used to extinguish fire.

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## **Dust explosion class**

St1 (VDI 2263)

1 m3 standard container, ignition energy 10 kJ

#### **Storage**

## Requirements for storage areas and containers

Keep in a dry, cool place.

Avoid light effect.

Keep container tightly closed and dry.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

## Components with workplace control parameters

## **Engineering measures**

Ensure suitable suction/aeration at the work place and with operational machinery.

Take precautionary measures against static discharges. Earthing of equipment.

#### Personal protective equipment

## **Respiratory protection**

No special protective equipment required. If dust occurs: dust mask with P1 particle filter

#### Hand protection

Glove material Nitrile, for example, Dermatril 740, Kächele-Cama Latex GmbH (KCL),

Germany

Material thickness 0,11 mm
Break through time 8 h

Method DIN EN 374

Glove material Natural rubber (NR), for example, Cama Clean 708, Kächele-Cama Latex

GmbH (KCL), Germany

Material thickness 0,5 mm Break through time 8 h

Method DIN EN 374

#### Eye protection

Safety glasses with side-shields If dust occurs: basket-shaped glasses

### Skin and body protection

No special protective equipment required.

#### **Hygiene measures**

Wash face and/or hands before break and end of work.

Cleanse and apply cream to skin after work.

### **Protective measures**

Handle in accordance with good industrial hygiene and safety practices.

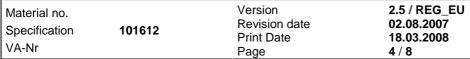
If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## **Appearance**

Form crystalline

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Colour colourless - light brown

Odour characteristic

Safety data

pH 5 - 6 (10 g/l) (20 °C)

water

Melting point/range 266 - 267 °C

decomposition

Boiling point/range not applicable

carbonisation point 210 °C

Flammability Combustible solid.

Method: VDI 2263

Ignition temperature 330 °C

Method: VDI Guideline 2263 sheet 1

(BAM-furnace)

Standard commercial product with characteristic grain size distribution is

normally flammable.

glow temperature > 400 °C

Method: VDI 2263

Autoinflammability 130 °C

Method: VDI Guideline 2263 sheet 1

(in dm3 wire basket (IMDG code))

Lower explosion limit dust: 30 g/m³

Minimum ignition energy > 10 mJ (25 °C)

Method: VDI 2263 Normal combustability

Vapour pressure < 0,0000001 hPa

Method: calculated Modified Grain Method

Density 1,34 g/cm3

Bulk density 610 - 750 kg/m3

Water solubility ca. 30 g/l (20 °C)

speed of hydrolysis half-life period: 1 years (25 °C)

Partition coefficient (n-octanol/water) log Pow: -1,28

Method: (calculated)

Burning number BZ 5 - burns out with flames or shower of sparks.

Method: VDI 2263

## 10. STABILITY AND REACTIVITY

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Hazardous decomposition products sulphides, flammable smouldering gases

Thermal decomposition 215 °C

TG (thermal gravimetric analysis)

Hazardous reactions Must be rendered inert for grinding.

## 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity LD50 Rat: > 10000 mg/kg

Method: literature

No signs of toxicity occurred

Acute inhalation toxicity LC0 rat(male/female): > 5,25 mg/l / 4 h

Method: OECD Test Guideline 403

limit test (maximum concentration attainable in experiments) - No deaths

occurred.

Skin irritation Rabbit: 500 mg / 4 h / No skin irritation

Method: OECD Test Guideline 404

Eye irritation Rabbit: 100 mg / No eye irritation

Method: OECD Test Guideline 405

Sensitization Buehler Test guinea pig: not sensitizing to the skin

Method: OECD Test Guideline 406

Repeated dose toxicity Oral Rat

Testing period: 9 month NOAEL: 700 mg/kg Method: literature

Reversible effects during the application period on liver, spleen, pancreas,

Gentoxicity in vitro Microorganisms, cell cultures

none mutagenic / genotoxic effects

Method: literature

Ames test Salmonella typhimurium

negative

Method: OECD TG 471

Toxicity to reproduction 1 generation pharyngal probe Rat: in maternally non-toxic doses

NOEL (No Observed Effect Level) of parents: 300 mg/kg

NOEL F1: 300 mg/kg

Method: OECD Test Guideline 415

Human experience gastro-intestinal symptoms: nausea, vomiting

Side-effects were observed in the event of higher dosage (10 g)

## 12. ECOLOGICAL INFORMATION

## Elimination information (persistence and degradability)

Biodegradability aerobic DOC (Dissolved Organic Carbon)

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inoculum: Activated sludge

Concentration: 17 mg/l Exposure time: 28 d

Result: 97 % Readily biodegradable.

Method: OECD TG 301 A

DOC decay

## Behaviour in environmental compartments

Bioaccumulation low

log Pow: see chapter 9

**Ecotoxicity effects** 

Toxicity to fish LC50 (Brachydanio rerio): > 3200 mg/l / 96 h

Method: OECD 203

NOEC (Brachydanio rerio): 3200 mg/l / 96 h

Method: OECD 203

Toxicity to daphnia EC50 static test Daphnia magna: 324 mg/l / 48 h

Method: OECD TG 202 Own test result.

Toxicity to algae EC50 static test Desmodesmus subspicatus: > 1000 mg/l / 72 h

End point: Biomass
Analytical monitoring: yes
Method: OECD TG 201

EC50 static test Desmodesmus subspicatus: > 1000 mg/l / 72 h

End point: growth rate
Analytical monitoring: yes
Method: OECD TG 201

Toxicity to bacteria EC 10 Pseudomonas putida: 2000 mg/l / 18 h

Method: UBA method

## Further information on ecology

Biochemical Oxygen Demand 480 mg/g

(BOD) Concentration: (BOD5)

## 13. DISPOSAL CONSIDERATIONS

## **Product**

Disposal according to local authority regulations.

Offer rinsed packaging material to local recycling facilities.

## **Waste Key Number**

The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority., No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer.

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#### 14. TRANSPORT INFORMATION

#### **Transport/further information**

Not classified as dangerous in the meaning of transport regulations.

## 15. REGULATORY INFORMATION

## Labelling according to EC Directives

Other data

On the basis of our data the product is not a hazardous substance as

defined by the Chemicals Act or Hazardous Substance Ordinance in the

currently valid versions.

## **National legislation**

#### **16. OTHER INFORMATION**

#### registration

Europe (EINECS/ELINCS) listed/registered USA (TSCA) listed/registered Canada (DSL) listed/registered Australia (AICS) listed/registered Japan (MITI) listed/registered Philippines (PICCS) listed/registered China listed/registered Switzerland not listed/registered

## **Further information**

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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