

**SAFETY DATA SHEET** (EC 1907/2006)**Biolys®**

Material no.		Version	2.20 / REG_EU
Specification	140080	Revision date	21.09.2007
VA-Nr		Print Date	18.03.2008
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**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING****Product information**

Trade name : Biolys®

Company : Evonik Degussa GmbH  
Health & Nutrition  
Abteilung HN-M-QR  
Postfach 1345  
D-63403 Hanau

Telephone : +49 (0)6181/59-2024  
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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 nature**

Content 67,7 %

Chemical Name : L-Lysine sulphate and its by-products from fermentation  
Formula : C<sub>12</sub> H<sub>28</sub> N<sub>4</sub> O<sub>4</sub> x H<sub>2</sub>SO<sub>4</sub>  
CAS-No. : 60343-69-3

**4. FIRST AID MEASURES****General advice**

Remove contaminated or saturated clothing.

**Inhalation**

In case product dust is released:  
Possible discomfort: cough, sneezing  
Move victims into fresh air.  
If symptoms persist, call a physician.

**Skin contact**

Wash off with soap and plenty of water.

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## Eye contact

Rinse thoroughly with plenty of water keeping eyelid open.  
In case of persistent discomfort: Consult an ophthalmologist.

## Ingestion

Have the mouth rinsed with water.  
after absorbing large amounts of substance:  
Consult a physician.

## Notes to physician

after absorbing large amounts of substance:  
Acceleration of gastrointestinal passage  
administration of activated charcoal.

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## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

water, mist

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

quenching powder, carbon dioxide (CO<sub>2</sub>)

### Specific hazards during fire fighting

In the case of fire, the following hazardous smoke fumes may be produced: carbon monoxide, carbon dioxide, nitric oxides, hydrocyanic acid.  
In the event of fire and/or explosion do not breathe fumes.

### 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.

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## 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

Use mechanical handling equipment.

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**Additional advice**

Avoid dust formation.

**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**

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."

**Dust explosion class**

St1 (VDI 2263)

1 m<sup>3</sup> 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****Other information**

none known.

**Engineering measures**

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

Earthing of equipment.

Take precautionary measures against static discharges.

**Personal protective equipment****Respiratory protection**

If dust occurs: dust mask with P1 particle filter

**Hand protection**

Wear protective gloves made of the following materials: rubber or plastics.

Change protective gloves regularly.

**Eye protection**

safety glasses

**Hygiene measures**

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

Cleanse and apply cream to skin after work.

**Protective measures**

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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	granular
Colour	light brown
Odour	characteristic

**Safety data**

pH	5 - 7	(10 g/l)	(20 °C)
	water		
Melting point/range	not applicable		
Boiling point/range	not applicable		
Ignition temperature	450 °C	Method: VDI Guideline 2263 sheet 1 (BAM-furnace)	
glow temperature	> 400 °C	Method: VDI 2263	
Autoinflammability	ca. 140 °C	(Autoignition temperature) Method: VDI Guideline 2263 sheet 1 (in dm <sup>3</sup> wire basket (IMDG code))	
Lower explosion limit	dust:	60 g/m <sup>3</sup>	( < 63 µm )
Minimum ignition energy	> 10 mJ	(25 °C)	Method: VDI 2263 mean grain size: 12 µm Normal combustability
	30 - 100 mJ	(25 °C)	Method: VDI 2263 mean grain size: 63 µm
Vapour pressure	not applicable		
Density	not determined		
Bulk density	630 - 770 kg/m <sup>3</sup>		
Tapped density	670 - 810 kg/m <sup>3</sup>		
Water solubility	min. 360 g/l	partly soluble	
	related to substance:	Product	
	min. 215 g/l	partly soluble	
	related to substance:	L-Lysine	
speed of hydrolysis	half-life period:	1 years	(25 °C) (pH 7)

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Method: 92/69/EEC, C.7

**10. STABILITY AND REACTIVITY**

Hazardous decomposition products decomposition products when exposed to heat  
flammable smouldering gases

Hazardous reactions Avoid dust formation.

**11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity LD50 Rat: > 5110 mg/kg  
Method: OECD Test Guideline 401  
(limit test)

Acute inhalation toxicity LC50 rat(male/female): > 5,3 mg/l / 4 h  
Method: OECD Test Guideline 403  
limit test (maximum concentration attainable in experiments) - No deaths  
occurred.

Skin irritation Rabbit  
not irritating  
Method: OECD Test Guideline 404

Eye irritation Rabbit  
slightly irritating  
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: 28 d  
Subsequent observation period: 42 day  
NOAEL: > 1870 mg/kg  
Method: OECD 407

Gentoxicity in vitro Ames test Salmonella typhimurium  
negative  
Method: OECD TG 471

chromosomal aberration human lymphocytes  
negative  
Metabolic activation: S-9 rat liver mix  
Method: OECD TG 473

Toxicity to reproduction 1 generation pharyngeal probe Rat: in maternally non-toxic doses  
NOEL (No Observed Effect Level) of parents: > 1000 mg/kg  
NOEL F1: > 1000 mg/kg  
Method: OECD Test Guideline 415

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**12. ECOLOGICAL INFORMATION****Elimination information (persistence and degradability)**

Biodegradability	aerobic	DOC (Dissolved Organic Carbon)
	inoculum:	Activated sludge
	Concentration:	16,8 mg/l
	Exposure time:	28 d
	Result:	100 % Readily biodegradable.
	Method:	OECD TG 301 A
		DOC decay

**Behaviour in environmental compartments****Ecotoxicity effects**

Toxicity to fish	LC50 semi-static test Cyprinus carpio: > 200 mg/l / 96 h Method: OECD TG 203
	LC0 semi-static test Cyprinus carpio: > 200 mg/l / 96 h Method: OECD TG 203
Toxicity to daphnia	EC50 static test Daphnia magna: > 2000 mg/l / 48 h Method: OECD TG 202
	EC0 static test Daphnia magna: > 700 mg/l / 48 h Method: OECD TG 202
Toxicity to algae	EC50 static test Desmodesmus subspicatus: > 2000 mg/l / 72 h End point: growth rate Method: OECD TG 201
	EC50 static test Desmodesmus subspicatus: 450 mg/l / 72 h End point: Biomass Method: OECD TG 201

**13. DISPOSAL CONSIDERATIONS****Product**

Disposal according to local authority regulations.  
Offer rinsed packaging material to local recycling facilities.

**Waste Key Number**

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., 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.

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**14. TRANSPORT INFORMATION****Transport/further information**

Not classified as dangerous in the meaning of transport regulations.

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**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**

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**16. OTHER INFORMATION****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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