

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.01.2024

Version number 4

Revision: 18.01.2024

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

- **1.1 Product identifier**
- **Trade name:** *Catalase from bovine liver ca. 11 000 U/mg*
- **Article number:** 26910
- **CAS Number:**  
9001-05-2
- **EC number:**  
232-577-1
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
*No further relevant information available.*
- **Application of the substance / the mixture:** *Laboratory chemicals*
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*SERVA Electrophoresis GmbH*  
*Carl-Benz-Str. 7*  
*D-69115 Heidelberg*  
*Tel.: +49 6221 13840-0*  
*FAX: +49 6221 13840-10*  
*msds.info@serva.de*
- **Information department:** *Product Safety Department Tel.: +49 6221 13840-35*
- **1.4 Emergency telephone number:**  
*Emergency medical information in case of poisoning*  
*Poison Information Centre Mainz-Tel: +49 (0) 6131 19240*  
*(Counselling in German and English)*



**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008:**



GHS08

*Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008:**  
*The substance is classified and labelled according to the GB CLP regulation.*
- **Hazard pictograms:** *GHS08*
- **Signal word:** *Danger*
- **Hazard statements:**  
*H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
- **Precautionary statements**
- *P261 Avoid breathing dust.*
- *P284 [In case of inadequate ventilation] wear respiratory protection.*
- *P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
- *P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*
- *P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment:**
- **PBT:** *PBT - Assessment not available.*
- **vPvB:** *vPvB - Assessment not available.*

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· **Determination of endocrine-disrupting properties** No further relevant information available.

### SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description:**  
9001-05-2 Catalase
- **Identification number(s):**
- **EC number:** 232-577-1
- **Description:**
- **MW:** ca. 240 000

· **Regulation (EC) No 648/2004 on detergents / Labelling for contents**

enzymes

≥30%

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Wash off immediately with soap and water and rinse thoroughly. In case of complaints, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes with running water. Remove contact lenses, if possible, and continue rinsing. In case of complaints, consult an ophthalmologist.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture:**  
In case of fire, the following can be formed, but not limited to:  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide and carbon dioxide
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained breathing apparatus.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective clothing.  
Ensure adequate ventilation  
Avoid formation of dust.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up**  
Dispose contaminated material as waste according to section 13.  
Pick up mechanically.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling:**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of dust.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store at -15 to -25 °C
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store containers tightly closed and dry.
- **7.3 Specific end use(s):** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls:** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Store protective clothing separately.  
Immediately remove all soiled and contaminated clothing  
Avoid contact with the eyes and skin.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:**  
Short term filter device:  
Filter P2.
- **Hand protection:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves:**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material:**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Natural rubber, NR  
Nitrile rubber, NBR
- **Eye/face protection:** Safety glasses
- **Body protection:** Protective work clothing.

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### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

##### · General Information:

- |   |  |
|---|--|
| · Physical state:   | Solid.   |
| · Colour:   | green to light brown   |
| · Odour:  | Odourless  |
| · Odour threshold:  | Not determined.  |
| · Melting point/freezing point:                             | No information available   |
| · Boiling point or initial boiling point and boiling range: | No information available   |
| · Flammability:   | Based on available data, the classification criteria for flammable solids are not met. |
| · Lower and upper explosion limit:                          |  |
| · Lower:  | No information available   |
| · Upper:  | No information available   |
| · Flash point:  | No information available   |
| · Decomposition temperature:                                | No information available   |
| · Viscosity:  |  |
| · Kinematic viscosity:                                      | No information available   |
| · Dynamic viscosity:  | No information available   |
| · Solubility:   |  |
| · Water:  | Partly soluble   |
| · Partition coefficient n-octanol/water (log value):        | No information available   |
| · Vapour pressure:  | No information available   |
| · Density and/or relative density:                          |  |
| · Density:  | No information available   |
| · Relative density:   | No information available   |
| · Particle characteristics                                  | No information available   |

#### · 9.2 Other information

- |   |   |
|---|---|
|   | Soluble in $K_3P O_4$ buffer, pH 7<br>soluble in $K_3P O_4$ -buffer, pH 7 |
| · Appearance:   |   |
| · Form:   | lyophilisate  |
| · Important information on protection of health and environment, and on safety: |   |
| · Explosive properties:   | Product does not present an explosion hazard.                             |
| · Molecular weight  | ~240,000 g/mol  |

### SECTION 10: Stability and reactivity

- 10.1 Reactivity: No further relevant information available.
- 10.2 Chemical stability:
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions: No further relevant information available.
- 10.4 Conditions to avoid: High temperatures
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: In case of fire: see section 5

### SECTION 11: Toxicological information

- 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:
- Acute toxicity: Based on available data, the classification criteria are not met.
- Skin corrosion/irritation: Based on available data, the classification criteria are not met.
- Serious eye damage/irritation: Based on available data, the classification criteria are not met.

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- **Respiratory or skin sensitisation:**  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards:**
- **Endocrine disrupting properties:** No relevant information available

**SECTION 12: Ecological information**

- **12.1 Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability:** No further relevant information available.
- **12.3 Bioaccumulative potential:** No further relevant information available.
- **12.4 Mobility in soil:** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment:**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6 Endocrine disrupting properties:** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects:**
- **Additional ecological information:**
- **General notes:** Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Dispose of in accordance with official regulations.  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**  
Uncleaned packaging must be disposed of in the same way as the product in accordance with official regulations.

**SECTION 14: Transport information**

- |  |                 |
|--|-----------------|
| · <b>14.1 UN number or ID number</b><br>· ADR, ADN, IMDG, IATA                 | Void            |
| · <b>14.2 UN proper shipping name</b><br>· ADR, ADN, IMDG, IATA                | Void            |
| · <b>14.3 Transport hazard class(es)</b><br>· ADR, ADN, IMDG, IATA<br>· Class: | Void            |
| · <b>14.4 Packing group</b><br>· ADR, IMDG, IATA                               | Void            |
| · <b>14.5 Environmental hazards</b>  | Not applicable. |

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- |   |  |
|---|--|
| · <b>14.6 Special precautions for user</b>                            | Not applicable.                                      |
| · <b>14.7 Maritime transport in bulk according to IMO instruments</b> | Not applicable.                                      |
| · <b>Transport/Additional information:</b>                            | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>                                       | Void   |

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Poisons Act**
  - **Regulated explosives precursors** Substance is not listed.
  - **Regulated poisons** Substance is not listed.
  - **Reportable explosives precursors** Substance is not listed.
  - **Reportable poisons** Substance is not listed.
  - **Directive 2012/18/EU**
  - **Named dangerous substances - ANNEX I** Substance is not listed.
  - **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**  
Substance is not listed.
  - **REGULATION (EU) 2019/1148**
  - **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**  
Substance is not listed.
  - **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
  - **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
  - **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**  
Substance is not listed.
  - **National regulations:**
  - **Technical instructions (air):**
- | Class | Share in % |
|-------|------------|
| I     | 80-100     |
- **Water hazard class:** Water hazard class I (Assessment by list): slightly hazardous for water.
  - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing SDS:** Product Safety Department
- **Contact:** +49 6221 13840-35
- **Date of previous version:** 02.05.2018
- **Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organisation  
PBT: persistent, bioaccumulative, toxic substance (UK REACH)  
vPvB: very persistent, very bioaccumulative substance (UK REACH)  
UK REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals  
GB CLP: Regulation on classification, labelling and packaging of substances and mixtures  
bw: body weight  
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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*IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Resp. Sens. 1: Respiratory sensitisation – Category 1*

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