

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

Printing date 25.11.2011

Version number 1

Revision: 22.06.2009

## 1 Identification of the substance/mixture and of the company/undertaking

- **1.1. Product identifier**
- **Trade name:** Catalase from bovine liver
- **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**
- **Application of the substance / the preparation** 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:** +49 6131 19240 (university hospital Mainz)

**SERVA**  
Electrophoresis

## 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.*

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xn; Sensitising

*R42: May cause sensitisation by inhalation.*

- **Classification system:**

*The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.*

- **2.2. Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

*The substance is classified and labelled according to the CLP regulation.*

- **Hazard pictograms** GHS08

- **Signal word** Danger

- **Hazard statements**

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

- **Precautionary statements**

*P285 In case of inadequate ventilation wear respiratory protection.*

*P261 Avoid breathing dust/fume/gas/mist/vapours/spray.*

*P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.*

*P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.*

*P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **2.3. Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

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· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

#### · 3.1. Chemical characterization: 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%

### 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** Immediately wash with water and soap and rinse thoroughly.· **After eye contact** Rinse opened eye for several minutes under running water.· **After swallowing** Drink copious amounts of water and provide fresh air. Call for doctor immediately.

#### · Information for 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.

### 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 released:

Nitrogen oxides (NO<sub>x</sub>)

Carbon monoxide and carbon dioxide

#### · 5.3. Advice for firefighters

· **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental release measures

· **6.1. Personal precautions, protective equipment and emergency procedures** Wear protective clothing.· **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 item 13.

#### · 6.4. Reference to other sections

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## 7 Handling and storage

- **Handling**
- **7.1. Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of dust.
- **Information about protection against explosions and fires:** No special measures required.
- **7.2. Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in dry conditions.
- **7.3. Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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**
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:**  
Short term filter device:  
Filter P2.
- **Protection of hands:**  
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 protection:** Safety glasses
- **Body protection:** Protective work clothing.

## 9 Physical and chemical properties

- **9.1. Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
- **Form:** Powder
- **Colour:** Light brown

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- |  |   |
|--|---|
| · <b>Odour:</b>  | Odourless                                     |
| · <b>Change in condition</b><br>Melting point/Melting range: undetermined<br>Boiling point/Boiling range: undetermined |   |
| · <b>Flash point:</b>  | Not applicable                                |
| · <b>Flammability (solid, gaseous)</b>   | Product is not flammable.                     |
| · <b>Danger of explosion:</b>  | Product does not present an explosion hazard. |
| · <b>Density:</b>  | Not determined                                |
| · <b>Solubility in / Miscibility with</b><br>Water:  | Partly soluble                                |
| · <b>9.2. Other information</b>  | soluble in $K_3P O_4$ -buffer, pH 7           |

### 10 Stability and reactivity

- **10.1. Reactivity**
- **10.2. Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3. Possibility of hazardous reactions** No dangerous reactions known
- **10.4. Conditions to avoid** No further relevant information available.
- **10.5. Incompatible materials:** No further relevant information available.
- **10.6. Hazardous decomposition products:** No dangerous decomposition products known

### 11 Toxicological information

- **11.1. Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through inhalation.

### 12 Ecological information

- **12.1. Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **12.2. Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.3. Bioaccumulative potential** No further relevant information available.
- **12.4. Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5. Results of PBT and vPvB assessment**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6. Other adverse effects** No further relevant information available.

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### 13 Disposal considerations

- **13.1. Waste treatment methods**
- **Recommendation**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |  |  |
|--|--|
| · <b>14.1. UN-Number</b><br>· <b>ADR, ADN, IMDG, IATA</b>                                    | Void   |
| · <b>14.2. UN proper shipping name</b><br>· <b>ADR, ADN, IMDG, IATA</b>                      | Void   |
| · <b>14.3. Transport hazard class(es)</b><br>· <b>ADR, ADN, IMDG, IATA</b><br>· <b>Class</b> | Void   |
| · <b>14.4. Packing group</b><br>· <b>ADR, IMDG, IATA</b>                                     | Void   |
| · <b>14.6. Special precautions for user</b>  | Not applicable.                                      |
| · <b>14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>       | Not applicable.                                      |
| · <b>Transport/Additional information:</b>   | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>  | -  |

### 15 Regulatory information

- **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **National regulations**
  - **Technical instructions (air):**
- | Class | Share in % |
|-------|------------|
| I     | 80-100     |
- **Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.
  - **15.2. Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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 MSDS:** Product safety department
- **Contact:** +49 6221 13840-35
- **Abbreviations and acronyms:**  
PBT: persistent, bioaccumulative, toxic substance (REACH)  
vPvB: very persistent, very bioaccumulative substance (REACH)  
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals  
CLP: Regulation on classification, labelling and packaging of substances and mixtures  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*ICAO: International Civil Aviation Organization*

*GHS: Globally Harmonized 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)*

**\* Data compared to the previous version altered.**

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