

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2018

Reviewed on 06/18/2009

## 1 Identification

- **Product identifier**
- **Trade name:** Glutamate dehydrogenase from bovine liver
- **Article number:** 22904
- **Application of the substance / the mixture** Laboratory chemicals
- **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
- **Emergency telephone number:**  
Medical Emergency Information in case of poisoning:  
Poison Information Center Mainz - Phone: +49 (0) 6131 19240  
(advisory service in German or English language)



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08

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

- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS08
- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Glutamate dehydrogenase
- **Hazard statements**  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- **Precautionary statements**  
Avoid breathing dust/fume/gas/mist/vapors/spray  
[In case of inadequate ventilation] wear respiratory protection.  
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.  
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = \*0

Fire = 0

Reactivity = 0

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- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization:** *Mixtures*
- **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Dangerous components:**

9029-12-3	Glutamate dehydrogenase	1-3%
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- **Additional information:** *For the wording of the listed hazard phrases refer to section 16.*

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*
- **After skin contact:** *Immediately rinse with water.*
- **After eye contact:** *Rinse opened eye for several minutes under running water.*
- **After swallowing:**  
*Rinse out mouth and then drink plenty of water.*  
*If symptoms persist consult doctor.*
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
- **Indication of any immediate medical attention and special treatment needed**  
*No further relevant information available.*

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** *Use fire fighting measures that suit the environment.*
- **Special hazards arising from the substance or mixture** *No further relevant information available.*
- **Advice for firefighters**
- **Protective equipment:** *Mouth respiratory protective device.*

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** *Wear protective clothing.*
- **Environmental precautions:**  
*Dilute with plenty of water.*  
*Do not allow to enter sewers/ surface or ground water.*
- **Methods and material for containment and cleaning up:**  
*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*  
*Dispose contaminated material as waste according to item 13.*
- **Reference to other sections**  
*See Section 7 for information on safe handling.*  
*See Section 8 for information on personal protection equipment.*  
*See Section 13 for disposal information.*

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** *Ensure good ventilation/exhaustion at the workplace.*

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- **Information about protection against explosions and fires:** *No special measures required.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** *Store at +2 to +8 °C*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *None.*
- **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.*
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
*The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.*
- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **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:**  
*Protective gloves*  
*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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*
- **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

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

<b>Form:</b>	<i>Solution</i>
<b>Color:</b>	<i>Colorless</i>

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- |  |   |
|--|---|
| <b>· Odor:</b>                                   | Characteristic                                |
| <b>· Change in condition</b>                     |   |
| <b>Melting point/Melting range:</b>              | Undetermined.                                 |
| <b>Boiling point/Boiling range:</b>              | Undetermined.                                 |
| <b>· Flash point:</b>                            | Not applicable.                               |
| <b>· Auto igniting:</b>                          | Product is not selfigniting.                  |
| <b>· Danger of explosion:</b>                    | Product does not present an explosion hazard. |
| <b>· Density:</b>                                | Not determined.                               |
| <b>· Solubility in / Miscibility with Water:</b> | Fully miscible.                               |
| <b>· Solvent content:</b>                        |   |
| <b>Organic solvents:</b>                         | 50.0 %  |
| <b>VOC content:</b>                              | 50.0 %  |
| <b>Solids content:</b>                           | 2.0 %   |
| <b>· Other information</b>                       | No further relevant information available.    |

## 10 Stability and reactivity

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

## 11 Toxicological information

- **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.
- **Additional toxicological information:**
- The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful
- **Carcinogenic categories**

<b>· IARC (International Agency for Research on Cancer)</b>
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None of the ingredients is listed.
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<b>· NTP (National Toxicology Program)</b>
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None of the ingredients is listed.
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<b>· OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
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None of the ingredients is listed.
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## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 1 (Self-assessment): slightly hazardous for water*  
*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, ADN, IMDG, IATA</b></li> </ul>  | Void   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, ADR, ADN, IMDG, IATA</b></li> </ul>                            | Void   |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, ADR, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul> | Void   |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>   | Void   |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>                                     | No   |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>   | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>                        | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>  | Not dangerous according to the above specifications. |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>   | Void   |

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## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Section 355 (extremely hazardous substances):**

*None of the ingredients is listed.*

· **Section 313 (Specific toxic chemical listings):**

*None of the ingredients is listed.*

· **TSCA (Toxic Substances Control Act):**

*All ingredients are listed.*

· **Proposition 65**

*None of the ingredients is listed.*

· **Chemicals known to cause cancer:**

*None of the ingredients is listed.*

· **Chemicals known to cause reproductive toxicity for females:**

*None of the ingredients is listed.*

· **Chemicals known to cause reproductive toxicity for males:**

*None of the ingredients is listed.*

· **Chemicals known to cause developmental toxicity:**

*None of the ingredients is listed.*

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

*None of the ingredients is listed.*

· **TLV (Threshold Limit Value established by ACGIH)**

*None of the ingredients is listed.*

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

*None of the ingredients is listed.*

· **GHS label elements**

*The product is classified and labeled according to the Globally Harmonized System (GHS).*

· **Hazard pictograms** GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

*Glutamate dehydrogenase*

· **Hazard statements**

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

· **Precautionary statements**

*Avoid breathing dust/fume/gas/mist/vapors/spray*

*[In case of inadequate ventilation] wear respiratory protection.*

*If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.*

*If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*

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

· **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 SDS:** *Product safety department*

· **Contact:** *+49 6221 13840-35*

· **Date of preparation / last revision** *05/03/2018 / 1*

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**· 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 (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)*  
*IMDG: International Maritime Code for Dangerous Goods*  
*DOT: US Department of Transportation*  
*IATA: International Air Transport Association*  
*ACGIH: American Conference of Governmental Industrial Hygienists*  
*EINECS: European Inventory of Existing Commercial Chemical Substances*  
*ELINCS: European List of Notified Chemical Substances*  
*CAS: Chemical Abstracts Service (division of the American Chemical Society)*  
*NFPA: National Fire Protection Association (USA)*  
*HMIS: Hazardous Materials Identification System (USA)*  
*VOC: Volatile Organic Compounds (USA, EU)*  
*PBT: Persistent, Bioaccumulative and Toxic*  
*vPvB: very Persistent and very Bioaccumulative*  
*NIOSH: National Institute for Occupational Safety*  
*OSHA: Occupational Safety & Health*  
*TLV: Threshold Limit Value*  
*PEL: Permissible Exposure Limit*  
*REL: Recommended Exposure Limit*  
*Resp. Sens. 1: Respiratory sensitisation – Category 1*

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