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

- **1.1 Product identifier**
  - Trade name: Cellulase »Onozuka R-10«
    from Trichoderma viride ca. 1 U/mg
  - Article number: 16419
  - CAS Number: 9012-54-8
  - EC number: 232-734-4
  - Index number: 647-002-00-3

- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  - No further relevant information available.

- **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:**
  - Medical Emergency Information in case of poisoning:
    Poison Information Center Mainz - Phone: +49 (0) 6131 19240
    (advisory service in German or English language)

**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 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 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.

- **Labelling of packages where the contents do not exceed 125 ml**
  - Hazard pictograms GHS08
  - Signal word Danger

(Contd. on page 2)
Hazard statements
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements
P284 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.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: PBT - assessment not available.
vPvB: vPvB - assessment not available.

SECTION 3: Composition/information on ingredients
3.1 Chemical characterisation: Substances
CAS No. Description:
9012-54-8 Cellulase
Identification number(s):
EC number: 232-734-4
Index number: 647-002-00-3
Description:
MW: ca. 52000

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 and to be sure call for a doctor.
After skin contact
Immediately wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.
After eye contact
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist In case of complaints.
After swallowing
Wash out mouth. Drink plenty of water and supply fresh air. Seek medical advice if discomfort occurs.

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
CO₂, 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
Formation of dangerous gases or vapours is possible in case of fire.
In case of fire, the following can be formed, but not limited to:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
5.3 Advice for firefighters  
Protective equipment: Wear self-contained respiratory protective device.

**SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures  
Wear protective clothing.  
Ensure adequate ventilation.  
Avoid contact with the eyes and skin.

6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up:  
Pick up mechanically.  
Dispose contaminated material as waste according to item 13.

6.4 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.

**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: No special measures required.

7.2 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:  
Keep receptacle tightly sealed and store in dry conditions.  
Protect from exposure to the light.

7.3 Specific end use(s) No further relevant information available.

**SECTION 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.  
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 P3.

Protection of hands:  
Protective gloves.

(Contd. on page 4)
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 trough 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.

**SECTION 9: Physical and chemical properties**

- 9.1 Information on basic physical and chemical properties

  - General Information
    - Appearance: lyophilisate
    - Colour: Beige
    - Odour: Odourless

  - pH-value: Not determined.

  - Change in condition
    - Melting point/freezing point: undetermined
    - Initial boiling point and boiling range: undetermined

  - Flash point: Not applicable

  - Flammability (solid, gaseous): Product is not flammable.

  - Explosive properties: Product does not present an explosion hazard.

  - Density: Not determined

  Solubility in / Miscibility with
  - Water: Soluble

- 9.2 Other information
  No further relevant information available.

**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
  As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion

- 10.4 Conditions to avoid No further relevant information available.

- 10.5 Incompatible materials: No further relevant information available.
Trade name: Cellulase »Onozuka R-10« from Trichoderma viride ca. 1 U/mg

10.6 Hazardous decomposition products: In case of fire: See Section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Based on available data, the classification criteria are not met.
- Primary irritant effect:
  - 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.
- Respiratory or skin sensitisation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):
  - 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.

SECTION 12: Ecological information

12.1 Toxicty
- 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.
- Additional ecological information:
  - General notes:
    Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
    Do not allow product to reach ground water, water course or sewage system.
  - 12.5 Results of PBT and vPvB assessment:
    - PBT: FBT - assessment not available.
    - vPvB: vPvB - assessment not available.
  - 12.6 Other adverse effects: No further relevant information available.

SECTION 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.
  Disposal must be made according to official regulations.

Uncleaned packagings:
- Recommendation:
  Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.

SECTION 14: Transport information

14.1 UN-Number
- ADR, ADN, IMDG, IATA: Void

(Contd. on page 6)
Trade name: Cellulase »Onozuka R-10«
from Trichoderma viride ca. 1 U/mg

### 14.0 Transport information

- **14.1 UN proper shipping name**
  - ADR, ADN, IMDG, IATA: Void

- **14.3 Transport hazard class(es)**
  - ADR, IMDG, IATA: Void
    - Class: Void
    - Label: -
    - ADN/R Class: Void

- **14.4 Packing group**
  - ADR, IMDG, IATA: Void

- **14.5 Environmental hazards:** Not applicable.

- **14.6 Special precautions for user** Not applicable.

- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

- **Transport/Additional information:** Not dangerous according to the above specifications.

### 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - National regulations
    - Water hazard class: Water hazard class 1 (Self-assessment): 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 SDS:** Product safety department
- **Contact:** +49 6221 13840-35

**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
- bw: body weight
- 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
- 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

* Data compared to the previous version altered.