

# **Glucuronoyl Esterase (Ruminococcus** flavefaciens) Safety Data Sheet

according to Regulation (EU) 2015/830

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| SECTION 1: Identification of the s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ubstance/mixture and of the company/undertaking                                                                                                      |  |  |
| 1.1. Product identifier                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                      |  |  |
| Product form                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | : Mixture                                                                                                                                            |  |  |
| Product name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | : Glucuronoyl Esterase (Ruminococcus flavefaciens)                                                                                                   |  |  |
| Product code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | : E-GERF                                                                                                                                             |  |  |
| 1.2. Relevant identified uses of the su                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ubstance or mixture and uses advised against                                                                                                         |  |  |
| 1.2.1. Relevant identified uses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                      |  |  |
| Industrial/Professional use spec                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | : For professional use only                                                                                                                          |  |  |
| Use of the substance/mixture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | : Use as laboratory reagent                                                                                                                          |  |  |
| 1.2.2. Uses advised against                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                      |  |  |
| No additional information available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                      |  |  |
| 1.3. Details of the supplier of the safe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ty data sheet                                                                                                                                        |  |  |
| Manufacturer<br>Megazyme<br>Bray Business Park<br>A98 YV29 Bray - Ireland<br>T +353 12861220 - F +353 12861264<br>cs@megazyme.com - www.megazyme.com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                      |  |  |
| 1.4. Emergency telephone number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                      |  |  |
| Emergency number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | : +353 12861220 [9 am to 5 pm GMT - Monday to Friday]                                                                                                |  |  |
| Not classified Adverse physicochemical, human health a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Classification according to Regulation (EC) No. 1272/2008 [CLP]<br>Not classified<br>Adverse physicochemical, human health and environmental effects |  |  |
| I o our knowledge, this product does not prese<br>practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ent any particular risk, provided it is handled in accordance with good occupational hygiene and safety                                              |  |  |
| 2.2. Label elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                      |  |  |
| Labelling according to Regulation (EC) No.<br>EUH-statements<br>Labelling according to: exemption for inner<br>No labelling required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | . 1272/2008 [CLP]<br>: EUH032 - Contact with acids liberates very toxic gas.<br>er packaging where the contents do not exceed 10ml                   |  |  |
| 2.3. Other hazards<br>No additional information available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                      |  |  |
| <b>SECTION 3: Composition/informat</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | tion on ingredients                                                                                                                                  |  |  |
| 3.1.         Substances           Not applicable         Image: Comparison of the second |                                                                                                                                                      |  |  |
| 3.2. Mixtures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                      |  |  |
| This mixture does not contain any substances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | to be mentioned according to the criteria of section 3.2 of REACH annex II                                                                           |  |  |
| SECTION 4: First aid measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                      |  |  |

| 4.1. Description of first aid measures |                                                                  |     |
|----------------------------------------|------------------------------------------------------------------|-----|
| First-aid measures after inhalation    | : Remove person to fresh air and keep comfortable for breathing. |     |
| First-aid measures after skin contact  | : Wash skin with plenty of water.                                |     |
| First-aid measures after eye contact   | : Rinse eyes with water as a precaution.                         |     |
| 19/11/2010                             | EN (Epolish)                                                     | 1/5 |

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| Bala Chool                                       |                                                                                                                                                             |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| according to Regulation (EU) 2015/830            |                                                                                                                                                             |
| First-aid measures after ingestion               | : Call a poison center or a doctor if you feel unwell.                                                                                                      |
| 4.2. Most important symptoms and effe            | cts, both acute and delayed                                                                                                                                 |
| No additional information available              |                                                                                                                                                             |
| 4.3. Indication of any immediate medica          | al attention and special treatment needed                                                                                                                   |
| Treat symptomatically.                           |                                                                                                                                                             |
| SECTION 5: Firefighting measures                 |                                                                                                                                                             |
| 5.1. Extinguishing media                         |                                                                                                                                                             |
| Suitable extinguishing media                     | : Water spray. Dry powder. Foam. Carbon dioxide.                                                                                                            |
| 5.2. Special hazards arising from the su         | ibstance or mixture                                                                                                                                         |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released.                                                                                                                              |
| 5.3. Advice for firefighters                     |                                                                                                                                                             |
| Protection during firefighting                   | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                    |
| SECTION 6: Accidental release mea                | sures                                                                                                                                                       |
| 6.1. Personal precautions, protective eq         | uipment and emergency procedures                                                                                                                            |
| 6.1.1. For non-emergency personnel               |                                                                                                                                                             |
| Emergency procedures                             | : Ventilate spillage area.                                                                                                                                  |
| 6.1.2. For emergency responders                  |                                                                                                                                                             |
| Protective equipment                             | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
| 6.2. Environmental precautions                   |                                                                                                                                                             |
| Avoid release to the environment.                |                                                                                                                                                             |
| 6.3. Methods and material for containme          | ent and cleaning up                                                                                                                                         |
| Methods for cleaning up                          | : Take up liquid spill into absorbent material.                                                                                                             |
| Other information                                | : Dispose of materials or solid residues at an authorized site.                                                                                             |
| 6.4. Reference to other sections                 |                                                                                                                                                             |
| For further information refer to section 13.     |                                                                                                                                                             |
| SECTION 7: Handling and storage                  |                                                                                                                                                             |
| 7.1. Precautions for safe handling               |                                                                                                                                                             |
| Precautions for safe handling                    | : Ensure good ventilation of the work station. Wear personal protective equipment.                                                                          |
| Hygiene measures                                 | : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.                                                         |
| 7.2. Conditions for safe storage, includi        |                                                                                                                                                             |
| Storage conditions                               | : Store in a well-ventilated place. Keep cool.                                                                                                              |
| 7.3. Specific end use(s)                         |                                                                                                                                                             |
| No additional information available              |                                                                                                                                                             |
| SECTION 8: Exposure controls/pers                | sonal protection                                                                                                                                            |
| 8.1. Control parameters                          |                                                                                                                                                             |
| No additional information available              |                                                                                                                                                             |
| 8.2. Exposure controls                           |                                                                                                                                                             |
| Appropriate engineering controls:                |                                                                                                                                                             |
| Ensure good ventilation of the work station.     |                                                                                                                                                             |
| Hand protection:                                 |                                                                                                                                                             |
| Protective gloves                                |                                                                                                                                                             |
| -                                                |                                                                                                                                                             |

| Туре              | Material             | Permeation       | Thickness (mm) | Penetration | Standard |
|-------------------|----------------------|------------------|----------------|-------------|----------|
| Disposable gloves | Nitrile rubber (NBR) | 3 (> 60 minutes) |                | 2 (< 1.5)   | EN 374-2 |

# Eye protection:

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| Туре           | Use     | Characteristics   | Standard |
|----------------|---------|-------------------|----------|
| Safety glasses | Droplet | With side shields | EN 166   |

# Skin and body protection:

Wear suitable protective clothing

| Туре     | Standard |
|----------|----------|
| Lab coat |          |

# **Respiratory protection:**

In case of insufficient ventilation, wear suitable respiratory equipment

| Device    | Filter type | Condition                       | Standard       |
|-----------|-------------|---------------------------------|----------------|
| Dust mask | Туре Р1     | Protection for Liquid particles | EN 143, EN 149 |



# Environmental exposure controls:

Avoid release to the environment.

| SECTION 9: Physical and chemical properties |                                                            |  |  |
|---------------------------------------------|------------------------------------------------------------|--|--|
| 9.1. Information on basic physical and      | 9.1. Information on basic physical and chemical properties |  |  |
| Physical state                              | : Liquid                                                   |  |  |
| Colour                                      | : white.                                                   |  |  |
| Odour                                       | : None.                                                    |  |  |
| Odour threshold                             | : No data available                                        |  |  |
| рН                                          | : No data available                                        |  |  |
| Relative evaporation rate (butylacetate=1)  | : No data available                                        |  |  |
| Melting point                               | : Not applicable                                           |  |  |
| Freezing point                              | : No data available                                        |  |  |
| Boiling point                               | : No data available                                        |  |  |
| Flash point                                 | : No data available                                        |  |  |
| Auto-ignition temperature                   | : No data available                                        |  |  |
| Decomposition temperature                   | : No data available                                        |  |  |
| Flammability (solid, gas)                   | : Not applicable                                           |  |  |
| Vapour pressure                             | : No data available                                        |  |  |
| Relative vapour density at 20 °C            | : No data available                                        |  |  |
| Relative density                            | : No data available                                        |  |  |
| Solubility                                  | : Soluble in water.                                        |  |  |
| Log Pow                                     | : No data available                                        |  |  |
| Viscosity, kinematic                        | : No data available                                        |  |  |
| Viscosity, dynamic                          | : No data available                                        |  |  |
| Explosive properties                        | : No data available                                        |  |  |
| Oxidising properties                        | : No data available                                        |  |  |
| Explosive limits                            | : No data available                                        |  |  |
| 9.2. Other information                      |                                                            |  |  |
| No additional information available         |                                                            |  |  |

# No additional information available

# SECTION 10: Stability and reactivity 10.1. Reactivity The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

# 10.3. Possibility of hazardous reactions

Contact with acids liberates very toxic gas.

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#### 10.4. **Conditions to avoid**

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

Acids.

term (acute)

term (chronic)

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

| SECTION 11: Toxicological information        | tion                                                                                                                    |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 11.1. Information on toxicological effects   |                                                                                                                         |
| Acute toxicity (oral)                        | : Not classified                                                                                                        |
| Acute toxicity (dermal)                      | : Not classified                                                                                                        |
| Acute toxicity (inhalation)                  | : Not classified                                                                                                        |
| Skin corrosion/irritation                    | : Not classified                                                                                                        |
| Serious eye damage/irritation                | : Not classified                                                                                                        |
| Respiratory or skin sensitisation            | : Not classified                                                                                                        |
| Germ cell mutagenicity                       | : Not classified                                                                                                        |
| Carcinogenicity                              | : Not classified                                                                                                        |
| Reproductive toxicity                        | : Not classified                                                                                                        |
| STOT-single exposure                         | : Not classified                                                                                                        |
| STOT-repeated exposure                       | : Not classified                                                                                                        |
| Aspiration hazard                            | : Not classified                                                                                                        |
|                                              |                                                                                                                         |
| SECTION 12: Ecological information           | 1                                                                                                                       |
| 12.1. Toxicity                               |                                                                                                                         |
| Ecology - general                            | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short- | : Not classified                                                                                                        |

| 12.2.   | Persistence and degradability      |
|---------|------------------------------------|
| No addi | tional information available       |
| 12.3.   | Bioaccumulative potential          |
| No addi | tional information available       |
| 12.4.   | Mobility in soil                   |
| No addi | tional information available       |
| 12.5.   | Results of PBT and vPvB assessment |
| No addi | tional information available       |
| 12.6.   | Other adverse effects              |
| No addi | tional information available       |
| SECT    | ION 13: Disposal considerations    |
| 13.1.   | Waste treatment methods            |

: Not classified

# Waste treatment methods

: Dispose of contents/container in accordance with licensed collector's sorting instructions.

## **SECTION 14: Transport information**

Hazardous to the aquatic environment, long-

| In accordance with ADR / RID / IMDG / IATA / ADN |                  |  |
|--------------------------------------------------|------------------|--|
| ADR                                              | ΙΑΤΑ             |  |
| 14.1. UN number                                  |                  |  |
| Not applicable                                   | Not applicable   |  |
| 14.2. UN proper shipping name                    |                  |  |
| Not applicable                                   | Not applicable   |  |
| 14.3. Transport hazard class(es)                 |                  |  |
| Not applicable                                   | Not applicable   |  |
| 18/11/2019                                       | EN (English) 4/5 |  |

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| ADR                                    | ΙΑΤΑ           |  |
|----------------------------------------|----------------|--|
| 14.4. Packing group                    |                |  |
| Not applicable                         | Not applicable |  |
| 14.5. Environmental hazards            |                |  |
| Not applicable                         | Not applicable |  |
| No supplementary information available |                |  |

## 14.6. Special precautions for user

- Overland transport

Not applicable

## - Air transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

# Not applicable

| SECTION 15: Degulatory information |  |
|------------------------------------|--|
| SECTION 15. REQUISION INORMATION   |  |
| SECTION 15: Regulatory information |  |

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

## 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions Contains no substance on the REACH candidate list Contains no REACH Annex XIV substances

## 15.1.2. National regulations

No additional information available

## 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

# **SECTION 16: Other information**

| Full text of H- and EUH-statements: |                                              |
|-------------------------------------|----------------------------------------------|
| EUH032                              | Contact with acids liberates very toxic gas. |

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.