

## *BioInvert*<sup>®</sup> 300 L

# Safety data sheet

Prepared in accordance with Regulation (EC) No. 1907/2006 (REACH)

**Version 1.0 | Created: 1 June 2015 | Revised: Not applicable**

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

|  |  |
|--|--|
| <b>Product name and description</b>                          | Invertase  |
| <b>Trade name/Brand</b>                                      | <i>BioInvert</i> <sup>®</sup> 300 L  |
| <b>Synonym(s)</b>  | β-fructofuranosidase   |
| <b>REACH Number</b>  | Not applicable, mixture  |
| <b>CAS Number</b>  | Not applicable, mixture  |
| <b>EC Number</b>   | Not applicable, mixture  |
| <b>Recommended use</b>                                       | This product is a laboratory preparation for educational use only.   |
| <b>Uses advised against</b>                                  | The product has not been packaged aseptically. Not for food use.   |
| <b>Supplier of the product and of this safety data sheet</b> | National Centre for Biotechnology Education (NCBE)<br>University of Reading<br>2 Earley Gate<br>Whiteknights<br>READING<br>RG6 6AU<br>United Kingdom<br><br>T: 0118 9873743<br>F: 0118 9750140<br>E: NCBE@reading.ac.uk<br>W: www.ncbe.reading.ac.uk |
| <b>Manufacturer of the product</b>                           | BioCon<br><br>0118 9873743 (NCBE, University of Reading. 08.30–17.00 weekdays only)  |
| <b>Emergency telephone number</b>                            |  |

## SECTION 2. Hazards identification

Classification according to  
Regulation (EC) No. 1272/2008 [CLP]

H334

Resp. Sens. (Category 1)

Label elements\*

**DANGER**

H334

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

P261

Avoid breathing dust/fume/gas/mist/vapours/spray

P285

In case of inadequate ventilation wear respiratory protection

P342 + P311

If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician

P304 + P341

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



Other hazards

None found.

\* Some statements above are omitted from the product label, as the volume of the mixture is less than 125 ml.

## SECTION 3. Composition/Information on the ingredients

| Name of component<br>(Synonym)<br>[CLP index number] | Weight<br>(%) | EC<br>(EINECS)<br>number | CAS<br>number | REACH<br>registration<br>number | Classification under Regulation<br>(EC) No 1272/2008 [CLP]* |
|--|---------------|--------------------------|---------------|---------------------------------|---|
| Invertase<br>( $\beta$ -fructofuranosidase)          | 1–10%         | 232-615-7                | 9001-57-4     | –                               | Resp. Sens. 1 (H334)  |

\* These classifications refer to the pure (100%) substances, not necessarily to the mixture supplied.

For the full text of the safety classification (H-statement), refer to Section 16.

## SECTION 4. First aid measures

**Inhalation**

May cause an allergic respiratory reaction if inhaled, with shortness of breath, wheezing and coughing. The effect of inhalation may be delayed.  
Move the casualty to fresh air. If respiratory problems occur, consult a doctor.

**Skin contact**

May cause slight irritation. Remove contaminated clothing, which can then be washed as normal. Wash enzyme off the skin immediately with plenty of water. Seek medical attention if irritation occurs and persists.

**Eye contact**

May cause slight irritation (redness). Hold eye open and rinse slowly and gently with water for at least 10 minutes. Remove contact lenses, if present. If symptoms persist, call a doctor.

**Ingestion**

Rinse out mouth with water, then drink plenty of water.  
Do not induce vomiting. Seek medical help immediately.

**Self-protection of the first aider**

Rinse your hands with water after handling anything that has been contaminated with the enzyme product.

**Most important symptoms and effects, both acute and delayed**

Irritation to the skin and eyes. Ingestion may cause gastrointestinal irritation nausea, vomiting and diarrhoea.

**Indication of any immediate medical attention and special treatment**

First Aid as outlined above, decontamination of clothing etc, treatment by a medical professional if symptoms persist.

**Advice to doctor**

Treat symptomatically.

## SECTION 5. Fire fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  |
| <b>Extinguishing media which must not be used for safety reasons</b> | No information available.   |
| <b>Special hazards arising from the substance or mixture</b>         | Thermal decomposition can lead to the release of irritating gases and vapours.  |
| <b>Advice for fire fighters</b>                                      | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapours. |

## SECTION 6. Accidental release measures

The volumes of enzyme preparation that are likely to be used in a school are small enough that any spill can be cleaned up easily and safely. The principal dangers are skin and eye contact and inhalation, as described in Section 4 above.

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Ensure adequate ventilation. Wear personal protective equipment, such as a lab coat, gloves and eye protection. Keep students away from the spill.   |
| <b>Environmental precautions</b>   | Limit leaks or spills with appropriate equipment (e.g., paper towels). If the undiluted product enters drains etc, it should be washed away (diluted) with plenty of water.  |
| <b>Methods and materials for containment and cleaning up</b>               | Soak up the enzyme preparation with inert absorbent material (e.g., paper towels). Place the waste in a suitable, closed container (e.g., a plastic bag) for disposal. Wash away any residue with plenty of water. Do not allow the enzyme to dry up, as there is a risk of dust being produced. |

## SECTION 7. Handling and storage

|                                      |   |
|--------------------------------------|---|
| <b>Precautions for safe handling</b> | Ensure good ventilation. Wear personal protective equipment, such as a lab coat, gloves and eye protection. Do not get into eyes, on skin or clothing. Washing and eye wash facilities should be available in the work area. Prevent the formation of aerosols. Do not breathe in vapours or dust from dried-up enzyme solution. Do not ingest. |
| <b>Conditions for safe storage</b>   | Keep the enzyme concentrate in a tightly-closed container. Store in a fridge at 3–5 °C.   |

***Note that this product is made in the same production area where egg and sulphites are used.***

## SECTION 8. Exposure control/personal protection

### Control parameters

|                                   |  |
|-----------------------------------|--|
| <b>Exposure limits</b>            | The product as supplied does not contain any hazardous materials with occupational exposure limits established by regulatory bodies. |
| <b>Biological limit values</b>    | The product as supplied does not contain any hazardous materials with occupational exposure limits established by regulatory bodies. |
| <b>Derived no effect level</b>    | No information available.  |
| <b>Predicated no effect level</b> | No information available.  |

## Personal protective equipment

|  |  |
|--|--|
| <b>Eye protection</b>                  | Wear safety glasses. Ensure that eyewash stations are close at hand, in case of accidental splashes into the eyes. |
| <b>Hand protection</b>                 | Protective gloves.   |
| <b>Skin and body protection</b>        | Wear appropriate protective gloves and a lab coat to prevent skin exposure.  |
| <b>Respiratory protection</b>          | Not required unless aerosols have been produced.   |
| <b>Hygiene measures</b>                | Handle in accordance with good industrial hygiene and safety practice.   |
| <b>Environmental exposure controls</b> | No information available.  |

## SECTION 9. Physical and chemical properties

|   |  |
|---|--|
| <b>Appearance</b>                             | Pale yellow.                               |
| <b>Physical state</b>                         | Liquid.                                    |
| <b>Odour</b>                                  | Slight fermentation odour.                 |
| <b>Odour threshold</b>                        | No data available.                         |
| <b>pH</b>                                     | 4.5–5.5 @ 20 °C                            |
| <b>Melting point / Range</b>                  | No data available.                         |
| <b>Boiling point / Range</b>                  | > 100 °C @ 760 mm Hg.                      |
| <b>Flash point</b>                            | Not applicable; does not flash.            |
| <b>Evaporation rate</b>                       | No data available.                         |
| <b>Flammability (solid, gas)</b>              | Not applicable as the mixture is a liquid. |
| <b>Explosion limits</b>                       | No data available.                         |
| <b>Vapour pressure</b>                        | No data available.                         |
| <b>Vapour density</b>                         | No data available.                         |
| <b>Density @ 20 °C</b>                        | 1.17 g / ml                                |
| <b>Relative density</b>                       | Not applicable as the mixture is a liquid. |
| <b>Solubility in water</b>                    | Readily soluble.                           |
| <b>Solubility in other solvents</b>           | No data available.                         |
| <b>Partition coefficient: n-octanol/water</b> | No data available.                         |
| <b>Autoignition temperature</b>               | No data available.                         |
| <b>Decomposition temperature</b>              | No data available.                         |
| <b>Viscosity</b>                              | No data available.                         |
| <b>Explosive properties</b>                   | None under normal conditions.              |
| <b>Oxidising properties</b>                   | None under normal conditions.              |

### Other information

No additional information relevant to the safe use of the substance.

## SECTION 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | No known reactivity hazards when stored under normal conditions. |
| <b>Chemical stability</b>                 | When stored at 3–5 °C, the product is stable.                    |
| <b>Possibility of hazardous reactions</b> | No hazardous have been identified.                               |
| <b>Conditions to avoid</b>                | Do not freeze. Avoid excess heat.                                |
| <b>Incompatible materials</b>             | Not applicable.  |
| <b>Hazardous decomposition products</b>   | None under normal conditions.                                    |

## SECTION 11. Toxicological information

|                               |  |
|-------------------------------|--|
| <b>Acute toxicity</b>         | No information available.  |
| <b>Irritation</b>             | On the skin: irritant effect after prolonged contact; On the eye: irritating effect. |
| <b>Corrosivity</b>            | No information available.  |
| <b>Sensitisation</b>          | No information available.  |
| <b>Repeated dose toxicity</b> | No information available.  |
| <b>Carcinogenicity</b>        | No information available.  |
| <b>Mutagenicity</b>           | No information available.  |

|  |                           |
|--|---------------------------|
| <b>Toxicity for reproduction</b>       | No information available. |
| <b>Developmental effects</b>           | No information available. |
| <b>Target organs</b>                   | No information available. |
| <b>Other adverse effects</b>           | No information available. |
| <b>Endocrine disruptor information</b> | No information available. |

## SECTION 12. Ecological information

|   |   |
|---|---|
| <b>Ecotoxicity effects</b>                | Do not empty into drains without dilution (see Section 13). |
| <b>Toxicity</b>                           | No information available.                                   |
| <b>Persistence and degradability</b>      | Biodegradable.  |
| <b>Bioaccumulative potential</b>          | Not expected to bioaccumulate.                              |
| <b>Mobility in soil</b>                   | No information available.                                   |
| <b>Results of PBT and vPVB assessment</b> | Not applicable.   |
| <b>Other adverse effects</b>              | None known.   |

## SECTION 13. Disposal considerations

|   |  |
|---|--|
| <b>Waste from residues/unused product</b> | Wash down a foul water drain with plenty of water. Wipe up any spills of the solution with absorbent material (e.g., paper towels) and water. Dispose of the paper towels in the normal waste. |
| <b>Contaminated packaging</b>             | Rinse with water and dispose of in normal waste according to local regulations. Recycle (the bottles are HDPE) where appropriate facilities are available.                                     |

## SECTION 14. Transport information

|                                |                 |
|--------------------------------|-----------------|
| <b>UN number</b>               | Not applicable. |
| <b>UN proper shipping name</b> | Not applicable. |
| <b>Transport hazard class</b>  | Not applicable. |
| <b>Packaging group</b>         | Not applicable. |
| <b>Environmental hazards</b>   | Not applicable. |

## SECTION 15. Regulatory information

|                                   |  |
|-----------------------------------|--|
| <b>Chemical Safety Assessment</b> | A Chemical Safety Assessment has not been carried out. |
|-----------------------------------|--|

## SECTION 16. Other information

### Full text of GHS hazard statements

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

The information given in this Safety Data Sheet is based on the present state of our knowledge.

This Safety Data Sheet has been compiled and is solely intended for this product.

**END OF SAFETY DATA SHEET**