BioInvert® 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

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

Product name and description: Invertase
Trade name/Brand: BioInvert® 300 L
Synonym(s): β-fructofuranosidase
REACH Number: Not applicable, mixture
CAS Number: Not applicable, mixture
EC Number: Not applicable, mixture

Recommended use: This product is a laboratory preparation for educational use only.
Uses advised against: The product has not been packaged aseptically. Not for food use.

Supplier of the product and of this safety data sheet:
National Centre for Biotechnology Education (NCBE)
University of Reading
2 Earley Gate
Whiteknights
READING
RG6 6AU
United Kingdom

T: 0118 9873743
F: 0118 9750140
E: NCBE@reading.ac.uk
W: www.ncbe.reading.ac.uk

Manufacturer of the product:
Kerry Ingredients & Flavours
Kilnagley
Carrigaline
Co. Cork
Ireland

Emergency telephone number: 0118 9873743 (NCBE, University of Reading. 08.30–17.00 weekdays only)
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

<table>
<thead>
<tr>
<th>Name of component (Synonym) [CLP index number]</th>
<th>Weight (%)</th>
<th>EC (EINECS) number</th>
<th>CAS number</th>
<th>REACH registration number</th>
<th>Classification under Regulation (EC) No 1272/2008 [CLP]*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invertase (β-fructofuranosidase)</td>
<td>1–10%</td>
<td>232-615-7</td>
<td>9001-57-4</td>
<td>–</td>
<td>Resp. Sens. 1 (H334)</td>
</tr>
</tbody>
</table>

* 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

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which must not be used for safety reasons
No information available.

Special hazards arising from the substance or mixture
Thermal decomposition can lead to the release of irritating gases and vapours.

Advice for fire fighters
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.

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Wear personal protective equipment, such as a lab coat, gloves and eye protection. Keep students away from the spill.

Environmental precautions
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.

Methods and materials for containment and cleaning up
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

Precautions for safe handling
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.

Conditions for safe storage
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

Exposure limits
The product as supplied does not contain any hazardous materials with occupational exposure limits established by regulatory bodies.

Biological limit values
The product as supplied does not contain any hazardous materials with occupational exposure limits established by regulatory bodies.

Derived no effect level
No information available.

Predicated no effect level
No information available.
Personal protective equipment

Eye protection
Wear safety glasses. Ensure that eyewash stations are close at hand, in case of accidental splashes into the eyes.

Hand protection
Protective gloves.

Skin and body protection
Wear appropriate protective gloves and a lab coat to prevent skin exposure.

Respiratory protection
Not required unless aerosols have been produced.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls
No information available.

SECTION 9. Physical and chemical properties

Appearance
Pale yellow.

Physical state
Liquid.

Odour
Slight fermentation odour.

Odour threshold
No data available.

pH
4.5–5.5 @ 20 °C

Melting point / Range
No data available.

Boiling point / Range
> 100 °C @ 760 mm Hg.

Flash point
Not applicable; does not flash.

Evaporation rate
No data available.

Flammability (solid, gas)
Not applicable as the mixture is a liquid.

Explosion limits
No data available.

Vapour pressure
No data available.

Vapour density
No data available.

Density @ 20 °C
1.17 g / ml

Relative density
Not applicable as the mixture is a liquid.

Solubility in water
Readily soluble.

Solubility in other solvents
No data available.

Partition coefficient: n-octanol/water
No data available.

Autoignition temperature
No data available.

Decomposition temperature
No data available.

Viscosity
No data available.

Explosive properties
None under normal conditions.

Oxidising properties
None under normal conditions.

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

SECTION 10. Stability and reactivity

Reactivity
No known reactivity hazards when stored under normal conditions.

Chemical stability
When stored at 3–5 °C, the product is stable.

Possibility of hazardous reactions
No hazardous have been identified.

Conditions to avoid
Do not freeze. Avoid excess heat.

Incompatible materials
Not applicable.

Hazardous decomposition products
None under normal conditions.

SECTION 11. Toxicological information

Acute toxicity
No information available.

Irritation
On the skin: irritant effect after prolonged contact; On the eye: irritating effect.

Corrosivity
No information available.

Sensitisation
No information available.

Repeated dose toxicity
No information available.

Carcinogenicity
No information available.

Mutagenicity
No information available.
Toxicity for reproduction No information available.
Developmental effects No information available.
Target organs No information available.
Other adverse effects No information available.
Endocrine disruptor information No information available.

SECTION 12. Ecological information

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

SECTION 13. Disposal considerations

Waste from residues/unused product 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.
Contaminated packaging 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

UN number Not applicable.
UN proper shipping name Not applicable.
Transport hazard class Not applicable.
Packaging group Not applicable.
Environmental hazards Not applicable.

SECTION 15. Regulatory information

Chemical Safety Assessment 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