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 Kilnagleary 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

Name of component (Synonym) [CLP index number]	Weight (%)	EC (EINECS) number	CAS number	REACH registration number	Classification under Regulation (EC) No 1272/2008 [CLP]*
Invertase (β-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

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