

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

1.1. Product identifier

Product name : ENDOZYM Pectofruit
Product code: refer to sales department

1.2. Relevant identified uses of the substance or mixture and uses advised against

Enzymatic formulation for clarification of juices

Sectors of use:

Manufacture of food products[SU4]

Product category:

Enzyme preparation including food additives and food ingredients for the catalysation of a specific biochemical reaction

Not recommended uses

Do not use for purposes other than those listed

1.3. Details of the supplier of the safety data sheet

AEB BRITAIN LTD - 5a Connaught Avenue, London, England, SW14 7RH - Tel: +442081332049
infoecommerce@aeb-group.com - www.aeb-group.com

1.4. Emergency telephone number

Emergency telephone number: 111

AEB BRITAIN LTD
Tel: +442081332049

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

2.1.1 Classification according to Regulation GB CLP:

Pictograms:
GHS08

Hazard Class and Category Code(s):
Resp. Sens. 1

Hazard statement Code(s):
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

The product, if inhaled, can cause sensitization.

2.2. Label elements

Labelling according to Regulation GB CLP:

Pictogram, Signal Word Code(s):
GHS08 - Danger

Hazard statement Code(s):
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements:

Prevention

P261 - Avoid breathing vapours/spray.

P284 - In case of inadequate ventilation wear respiratory protection.

Response

P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or a doctor.

Contains:

Pectin lyase, Arabinanase, Pectin methylesterase

Ingredients:

glycerol, pectin lyase, potassium chloride, ammonium sulphate, potassium sorbate, arabinanase, sodium benzoate, pectin methylesterase, water q.s. to 100.

For food use. Not intended for the final consumer. In accordance with current regulations on the specific matter. Only for industrial use.



2.3. Other hazards

The substance / mixture does NOT contain substances PBT/vPvB according to Regulation No. 1907/2006 (Reach) as amended, Annex XIII

SECTION 3. Composition/information on ingredients

3.1 Substances

Not relevant

3.2 Mixtures

Refer to paragraph 16 for full text of hazard statements

Substance	Concentration[w/w]	Classification	IUB N°	CAS	EINECS	REACH
Glycerol substance for which there are Community workplace exposure limits	>= 25 < 50%			56-81-5	200-289-5	**
Pectin lyase	>= 3 < 5%	Resp. Sens. 1, H334	4.2.2.10	9033-35-6	232-894-5	**
Arabinanase	>= 0,1 < 1%	Resp. Sens. 1, H334	3.2.1.99	37325-54-5	253-463-8	**
Pectin methylesterase	>= 0,1 < 1%	Resp. Sens. 1, H334	3.1.1.11	9025-98-3	232-807-0	**

** Not applicable - Regulation No. 1907/2006 (Reach) as amended, Article 2(5).

SECTION 4. First aid measures

4.1. Description of first aid measures

Inhalation:

Ventilate the area. Move immediately the contaminated patient from the area and keep him at rest in a well ventilated area. If you feel unwell seek medical advice.

Direct contact with skin (of the pure product):

Wash thoroughly with soap and running water.

Direct contact with eyes (of the pure product):

Wash immediately and thoroughly with running water for at least 10 minutes.

Ingestion:

Not dangerous. In case of malaise consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Indication of any immediate medical attention and special treatment needed

Call a POISON CENTER or doctor / physician if you feel unwell.

SECTION 5. Firefighting measures

5.1. Extinguishing media

Suggested extinguishing media:

Water spray, CO₂, foam, dry chemical, depending on the materials involved in the fire.

Extinguishing media to avoid:

Water jets. Use water jets only to cool the surfaces of the containers exposed to fire.

5.2. Special hazards arising from the substance or mixture

No data available.

5.3. Advice for firefighters

Use protection for the breathing apparatus

Safety helmet and full protective clothing.

The water spray can be used to protect the people involved in the extinction.

You may also use self-contained breathing apparatus, especially when working in confined and poorly ventilated areas.

Keep containers cool with water spray

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel:

Leave the area surrounding the spill or release. Do not smoke

Wear gloves and protective clothing

6.1.2 For emergency responders:

Eliminate all unguarded flames and possible sources of ignition. No smoking.

Provide a sufficient ventilation.

Evacuate the danger area and, in case, consult an expert.

6.2. Environmental precautions

Contain spills with earth or sand.

If the product has entered a watercourse, sewers or has contaminated soil or vegetation, notify the authorities.

Dispose of the waste material in compliance with the regulations

6.3. Methods and material for containment and cleaning up

6.3.1 Containment:

Rapidly recover the product, wear a mask and protective clothing (for specifications refer to section 8.2. SDS)
Recover the product for reuse, if possible, or for removal. Absorb spill with inert material or remove by vacuuming.
Prevent it from entering the sewer system.

6.3.2 Cleaning up:

After wiping up, wash with water the area and materials involved

6.3.3 Other information:

None in particular.

6.4. Reference to other sections

Refer to paragraphs 8 and 13 for more information

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and inhalation of dust and vapours.
Handle the product after consulting all other sections of this safety data sheet.
Do not eat or drink while handling.
See also paragraph 8 below.

7.2. Conditions for safe storage, including any incompatibilities

Keep in original container closed tightly. Do not store in open or unlabelled containers.
Keep containers upright and safe by avoiding the possibility of falls or collisions.
Store in a cool and dry place, away from heat sources and direct exposure to sunlight.
Storage: Store in its original sealed packaging, away from light, in a cool, dry place free from odours, at temperatures < 20°C. Do not freeze. Lot number (BN) and best before (EXP): See barcode.

7.3. Specific end use(s)

Manufacture of food products:

Handle with Care. Store in a clean, dry and ventilated environment, away from heat and direct sunlight. Keep container tightly closed.

Storage: Store in its original sealed packaging, away from light, in a cool, dry place free from odours, at temperatures < 20°C. Do not freeze. Lot number (BN) and best before (EXP): See barcode.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

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Related to contained substances: Glycerol:

Limit value - Eight hours

Australia 10 (1) mg/m³

Belgium 10 mg/m³

Canada - Ontario 10 mg/m³

Canada - Quebec 10 mg/m³

Finland 20 mg/m³

France 10 mg/m³

Germany (AGS) 200 (1) mg/m³

Germany (DFG) 200 (1) mg/m³

Ireland 10 mg/m³

New Zealand 10 (1) mg/m³

Poland 10 mg/m³

Singapore 10 mg/m³

South Africa Mining 10 ppm

South Korea 10 mg/m³

Spain 10 mg/m³

Switzerland 50 inhalable aerosols mg/m³

USA - OSHA 15 (1) mg/m³

5 (2) mg/m³

United Kingdom 10 mg/m³

Limit value - Short-term

Germany (AGS) 400 (1)(2) mg/m³

Germany (DFG) 400 (1)(2) mg/m³

Switzerland 100 inhalable aerosols mg/m³

Remarks

Australia (1) This value refers to inhalable dust containing no asbestos and < 1% crystalline silica. Germany (AGS) (1)

Inhalable fraction (2) Average value 15 minutes

Germany (DFG) (1) Inhalable fraction (2) Average value 15 minutes

New Zealand (1) The value for inhalable dusts containing no asbestos and less than 1% free silica. USA - OSHA (1)

Inhalable fraction (2) Breathable fraction

- Substance: Glycerol

DNEL

Systemic effects Long term Workers inhalation = 56 (mg/m³)

PNEC

Sweet water = 0,885 (mg/l)

sediment Sweet water = 3,3 (mg/kg/sediment)

Sea water = 0,088 (mg/l)

sediment Sea water = 0,33 (mg/kg/sediment)

intermittent emissions = 8,85 (mg/l)

ground = 0,141 (mg/kg ground)

- Substance: Pectin lyase

PNEC

Sweet water = 0,052 (mg/l)

Sea water = 0,00052 (mg/l)

STP = 65 (mg/l)

ground = 0,001 (mg/kg ground)

8.2. Exposure controls



Appropriate engineering controls:

Manufacture of food products:

No specific monitoring foreseen (act according to good practice and specific rules for the type of risk associated)

8.2.2 Individual protection measures:

(a) Eye / face protection Not needed for normal use, unless otherwise provided by the employer and / or by assessments of environmental hygiene investigations

(b) Skin protection

(i) Hand protection

Not needed for normal use, unless otherwise provided by the employer and / or by assessments of environmental hygiene investigations

(ii) Other

Wear normal work clothing.

(c) Respiratory protection

Use adequate protective respiratory equipment (EN 14387:2008)

(d) Thermal hazards

No hazard to report

Environmental exposure controls:

Use according to good working practices and avoid to disperse the product into the environment.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical and chemical properties	Value	Determination method
Appearance	Liquid	

According to Regulation (EC) N.1907/2006

Physical and chemical properties	Value	Determination method
Odour	Not determined because it is considered not relevant for characterization of the product	
Odour threshold	Not determined because it is considered not relevant for characterization of the product	
pH	5.0 ± 0.5 (20° C)	
Melting point/freezing point	Not determined because it is considered not relevant for characterization of the product	
Initial boiling point and boiling range	Not determined because it is considered not relevant for characterization of the product	
Flash point	Not determined because it is considered not relevant for characterization of the product	ASTM D92
Evaporation rate	Not determined because it is considered not relevant for characterization of the product	
Flammability (solid, gas)	Not determined because it is considered not relevant for characterization of the product	
Upper/lower flammability or explosive limits	Not determined because it is considered not relevant for characterization of the product	
Vapour pressure	Not determined because it is considered not relevant for characterization of the product	
Vapour density	Not determined because it is considered not relevant for characterization of the product	
Relative density	1,00 ± 0,25 (20°C)	
Solubility	in water	
Water solubility	Miscible in all proportions	
Partition coefficient: n-octanol/water	Not determined because it is considered not relevant for characterization of the product	
Auto-ignition temperature	Not determined because it is considered not relevant for characterization of the product	
Decomposition temperature	Not determined because it is considered not relevant for characterization of the product	
Viscosity	Not determined because it is considered not relevant for characterization of the product	
Explosive properties	Not determined because it is considered not relevant for characterization of the product	
Oxidising properties	Not determined because it is considered not relevant for characterization of the product	

9.2. Other information

No data available.

SECTION 10. Stability and reactivity

10.1. Reactivity

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Related to contained substances:

Glycerol:

Reacts with: Strong acids. Strong foundations

Pectin lyase:

Not relevant.

Arabinanase:

Unavailable

Pectin methylesterase:

Unavailable

10.2. Chemical stability

No hazardous reaction when handled and stored according to provisions.

10.3. Possibility of hazardous reactions

There are no hazardous reactions

10.4. Conditions to avoid

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Related to contained substances:

Glycerol:

Humidity

Arabinanase:

Unavailable

Pectin methylesterase:

Unavailable

10.5. Incompatible materials

None in particular

10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

SECTION 11. Toxicological information

11.1. Information on toxicological effect

(a) acute toxicity: Glycerol: Ingestion - LD50 rat (mg / kg / 24h bw): not available
Skin contact - LC50 rat / rabbit (mg / kg / 24h bw): not available

Inhalation - LD50 rat (mg / l / 4h): not available

Pectin lyase: Ingestion - LD50 rat (mg / kg / 24h bw): not available

Skin contact - LC50 rat / rabbit (mg / kg / 24h bw): not available

Inhalation - LD50 rat (mg / l / 4h): not available

Arabinanase: Ingestion - LD50 rat (mg / kg / 24h bw): not available

Skin contact - LC50 rat / rabbit (mg / kg / 24h bw): not available

Inhalation - LD50 rat (mg / l / 4h): not available

Pectin methylesterase: Ingestion - LD50 rat (mg / kg / 24h bw): not available

Skin contact - LC50 rat / rabbit (mg / kg / 24h bw): not available

Inhalation - LD50 rat (mg / l / 4h): not available

(b) skincorrosion/irritation: Glycerol: Not classified

Pectin lyase: Not corrosive

Arabinanase: Not corrosive

Pectin methylesterase: Not corrosive

Glycerol: Not classified

Pectin lyase: Not irritating

Arabinanase: Not irritating

Pectin methylesterase: Not irritating

(c) serious eye damage/irritation: Glycerol: Not classified

Pectin lyase: Not corrosive

Arabinanase: Not corrosive

Pectin methylesterase: Not corrosive

Glycerol: Not classified

Pectin lyase: Not irritating

Arabinanase: Not irritating

Pectin methylesterase: Not irritating

(d) respiratoryorskinsensitisation: The product, if inhaled, can cause sensitization.

Glycerol: Not classified

Pectin lyase: Sensitizer: May cause sensitization by inhalation.

Arabinanase: May cause sensitization by inhalation.

Pectin methylesterase: May cause sensitization by inhalation.

(e) germ cell mutagenicity: Glycerol: Not classified

Pectin lyase: Unavailable

Arabinanase: Unavailable

Pectin methylesterase: Unavailable

(f) carcinogenicity: Glycerol: Not classified

Pectin lyase: Unavailable

Arabinanase: Unavailable

Pectin methylesterase: Unavailable

(g) eproductivetoxicity: Glycerol: Not classified - Does not affect fertility. Non-toxic for development.

Pectin lyase: Unavailable

Arabinanase: Unavailable

Pectin methylesterase: Unavailable

(h) specific target organ toxicity (STOT) single exposure: Glycerol: Not classified Ingestion may cause nausea, vomiting and avoidance.

Pectin lyase: Unavailable

Arabinanase: Unavailable

Pectin methylesterase: Unavailable

(i) specific target organ toxicity (STOT) repeated exposure: Glycerol: Not classified

Pectin lyase: Once sensitized, a severe allergic reaction can occur upon subsequent exposure to very low levels.

Arabinanase: Once sensitized, a severe allergic reaction can occur upon subsequent exposure to very low levels.

Pectin methylesterase: Once sensitized, a severe allergic reaction can occur upon subsequent exposure to very low levels.

(j) aspiration hazard: Glycerol: Inhalation: May cause irritation to the respiratory tract and other mucous membranes.

Pectin lyase: Unavailable
Arabinanase: Unavailable
Pectin methylesterase: Unavailable

11.2. Information on other hazards

No data available.

SECTION 12. Ecological information

12.1. Toxicity

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Related to contained substances:

Glycerol:

Acute aquatic toxicity: Not classified

Chronic aquatic toxicity: Not classified

LC50-96 h - fish 54000 mg / l Oncorhynchus mykiss EC50-48 h - Daphnia 1955 mg / l

EC50-72 h - algae 3200 mg / l Entosiphon sulcatum

Pectin lyase:

Acute toxicity - fish LC50 (mg / l / 96h): not available

Acute toxicity - crustaceans EC50 (mg / l / 48h): not available

Acute toxicity algae ErC50 (mg / l / 72-96h): not available

Chronic toxicity - fish NOEC (mg / l): not available

Chronic toxicity - shellfish NOEC (mg / l): not available

Chronic toxicity algae NOEC (mg / l): not available

Arabinanase:

Acute toxicity - fish LC50 (mg / l / 96h): not available

Acute toxicity - crustaceans EC50 (mg / l / 48h): not available

Acute toxicity algae ErC50 (mg / l / 72-96h): not available

Chronic toxicity - fish NOEC (mg / l): not available

Chronic toxicity - shellfish NOEC (mg / l): not available

Chronic toxicity algae NOEC (mg / l): not available

Pectina metilesterasi

Acute toxicity - fish LC50 (mg / l / 96h): not available

Acute toxicity - crustaceans EC50 (mg / l / 48h): not available

Acute toxicity algae ErC50 (mg / l / 72-96h): not available

Chronic toxicity - fish NOEC (mg / l): not available

Chronic toxicity - shellfish NOEC (mg / l): not available

Chronic toxicity algae NOEC (mg / l): not available

Use according to good working practices and avoid to disperse the product into the environment.

12.2. Persistence and degradability

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Related to contained substances:

Glycerol:

Persistence and degradability Readily biodegradable.

COD value 1.16 g O₂ / g substance

ThOD (gO₂ / g) 1.217 g O₂ / g substance

BOD (% of ThOD) 71% DTO

Pectin lyase:
Unavailable

Arabinanase:
Unavailable

Pectina metilesterasi
Unavailable

12.3. Bioaccumulative potential

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Related to contained substances:
Glycerol:
Log P octanol / water at 20 ° C -1.76 - 2.6
Kow log -1.76 Bioaccumulative potential
Not expected to bioaccumulate.

Pectin lyase:
Unavailable

Arabinanase:
Unavailable

Pectina metilesterasi
Unavailable

12.4. Mobility in soil

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Related to contained substances:
Glycerol:
ground Product that penetrates easily into the ground.

Pectin lyase:
Unavailable

Arabinanase:
Unavailable

Pectina metilesterasi
Unavailable

12.5. Results of PBT and vPvB assessment

Based on the available data, no PBT or vPvB substances are present in accordance with Regulation (EC) 1907/2006, annex XIII

12.6. Other adverse effects

No adverse effects

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Residual waste

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner and in accordance with local/regional/national/international regulations.

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code

The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information

Incinerate. Incinerator should be appropriately for this product. Workers should wear appropriate personal protective equipment(s) such as respirator.

Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Do not allow this material to drain into sewers/water supplies

SECTION 14. Transport

14.1. UN number

Not included in the field of application of regulations concerning the transport of dangerous goods: by road (ADR); by rail (RID); by air (ICAO / IATA); by sea (IMDG).

14.2. UN proper shipping name

None

14.3. Transport hazard class(es)

None

14.4. Packing group

None

14.5. Environmental hazards

None

14.6. Special precautions for user

No data available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Transport in bulk is not foreseen

SECTION 15. Regulatory information

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

Restrictions relating to the product or contained substances (All. XVII Reg. Reach as amended): not applicable

Substances in Candidate List (art. 59 UK Reach): the product does not contain SVHC

Substances subject to authorisation (Ann. XIV Reach as amended): the product does not contain SVHC

Regulation (EC) No 1169/2011, as amended: see 2.2

Regulation (EC) No 1332/2008, as amended: see 2.2

Regulation (EC) No 1333/2008, as amended: see 2.2

15.2. Chemical safety assessment

No chemical safety assessment was carried out by the supplier

SECTION 16. Other information

16.1. Other information

Description of hazard statements set out in paragraph 3

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

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled Classification procedure:
Calculation method

Main normative references:

Regulation (EC) 1272/2008 (CLP Regulation) as amended

Regulation (EC) No. 1907/2006, REACH as amended

Regulation (EU) No 1169/2011 of the European Parliament and of the Council as amended

Regulation (EC) No 1332/2008 of the European Parliament and of the Council

Regulation (EC) No 1333/2008 of the European Parliament and of the Council

Regulation (EC) No 1331/2008 of the European Parliament and of the Council

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, as amended

Regulation (EC) No. 850/2004 On persistent organic pollutants, as amended

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, as amended

Regulation (EC) No. 166/2006 Pollutant Release and Transfer Registry, as amended

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

Commission Regulation (EC) No 1881/2006 on contaminants in food

EC 1935/2004 and EU 10/2011 as amended on Food Contact materials

EU regulations Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Training required: This document must be submitted to the employer to determine the possible need for appropriate training for workers to ensure protection of human health and the environment.

n.a.: not applicable

n.d.: not available

ADR: Accord européen relative au transport International des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

ATE: Acute Toxicity Estimati

BFC: BioconCentration Factor

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstract Service number

CAP: Centre AntiPoison

CE/EC number EINECS (European Inventory of existing Commercial Substances) e ELINCS (European List of notified Chemical Substances)

CL50/LC50: Lethal Concentration 50

DL50/LD50: Lethal Dose 50

COD: Chemical Oxygen Demand

DNEL: Derived No Effect Level

EC50: half maximal Effective Concentration

ERC: Environment Release Classes

EU/UE: European Union

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods code

Kow: Octanol water partition coefficient

NOEC: No Observed Effect Concentration

OEL: Occupational Exposure Limit

PBT: Persistent Bioaccumulative and Toxic

PC: Product Categories

PNEC: Predicted No Effect Concentration

PROC: Process Categories

RID: Règlement concernant le transport International ferroviaire des marchandises dangereuses (Regulations concerning International rail transport of dangerous goods)

STOT: Target Organ Systemic Toxicity

STOT (RE): Repeated Exposure

STOT (SE): Single Exposure

STP: Sewage Treatment Plants

SU: Sector of Use

SVCH: Substance of Very High Concern

TLV: Threshold Limit Value

vPvB: Very Persistent Very Bioaccumulative

References and Sources:

ECHA Registered Substances:

- <https://echa.europa.eu/web/guest/information-on-chemicals/registered-substances>
- GB MCL-GB mandatory clas. and labelling list: <https://www.hse.gov.uk/chemicalclassification/assets/docs/mcl-list.xlsx>
- SDS supplier
- GESTIS International Limit Value: <http://limitvalue.ifa.dguv.de>
- HSE Great Britain limit values: <https://www.hsl.gov.uk/>

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