

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

1.1. Product identifier

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

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

Enzyme preparations
Sectors of use:
Manufacture of food products[SU4]
Product category:
Technological adjuvant for brewery use

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:
+442081332049infoecommerce@aeb-group.com - www.aeb-group.com Produced by AEB
FRANCE Sarl - 10, rue du Stade - 68240 KAYSERSBERG-VIGNOBLE, France

Produced by
AEB FRANCE Sarl - 10, rue du Stade - 68240 KAYSERSBERG-VIGNOBLE, France

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 (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/758, and UK SI 2020/1577:

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

Pictogram, Signal Word Code(s):

GHS08 - Danger

Hazard statement Code(s):

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

Supplemental Hazard statement Code(s):

not applicable

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:
Glucoamylase

Ingredients : Glucoamylase, glycerol, glucose, potassium sorbate, sodium benzoate, water q.s. to 100.

Food use, brewery 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	Index	CAS	EINECS	UK REACH
Glucoamylase	≥10 < 25%	Resp. Sens. 1, H334	3.2.1.3	9032-08-0	232-877-2	**
Glycerol substance for which there are Community workplace exposure limits	≥5 < 10%			56-81-5	200-289-5	**

**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 contaminated area and immediately remove the patient to a well-ventilated area. Keep the patient rested and seek medical advice if unwell.

Direct contact with skin (of the pure product):.Wash thoroughly with soap and running water. Immediately take off contaminated clothing.

Direct contact with eyes (of the pure product): Wash immediately and thoroughly with running water, keeping eyelids open for at least 10 minutes, then protect your eyes with a dry sterile gauze. Seek medical advice immediately. Do not use eye drops or ointments of any kind before the examination or advice from an ophthalmologist.

Ingestion: Not dangerous. Consult a doctor if you feel unwell

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

If experiencing respiratory symptoms: Call a POISON CENTER or a doctor.

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

Advice for firefighters:

PPE: Use breathing apparatus (self-contained in confined spaces) appropriate head protection and protective clothing.

Keep product 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 sufficient ventilation.

Evacuate the danger zone and 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 (Personal Protective Equipment).

Recover the product for reuse if uncontaminated, or for removal using a vacuum or with absorption with an insert material.

Prevent the material from entering sewer or water collection systems.

Dispose of the waste material in compliance with the regulations.

6.3.2 Cleaning up:

Following spillage, wash the surfaces of the area with water.

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 and inhalation of vapors.

Only handle the product after reading all other sections of this safety data sheet. Do not eat or drink while handling.

(See paragraph 8 below for substance specific information).

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 the original sealed packaging, away from light, in a cool, dry, odour-free place and at a temperature < 20°C. Do not freeze. Batch number (BN) and Best before date (EXP): See Barcode.

7.3. Specific end use(s)

Manufacture of food products.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

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Occupational Exposure Limits:

Related to contained substances:

Glycerol CAS 56-81-5

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

Biological limit values:

- Substance: Glucoamylase CAS 9032-08-0:

PNEC:Predicted no-effect concentration

Sweet water = 0,1037 (mg/l)

Sea water = 0,01037 (mg/l)

STP = 65 (mg/l)

ground = 0,0124 (mg/kg ground)

- Substance: Glycerol CAS 56-81-5:

DNEL:Derived No Effect Level f

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

PNEC:Predicted no-effect concentration

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)



8.2. Exposure controls

Appropriate engineering controls:

Manufacturer of food products. Use as per instructions and in accordance with safe food production practices.

8.2.2 Individual protection measures:

(a) Eye / face protection

Not normally required unless defined by specific risk assessments.

(b) Skin protection

(i) Hand protection

Not normally required unless defined by specific risk assessments.

(ii) Other

Wear appropriate clothing to prevent reasonably probable skin contact

(c) Respiratory protection

Use adequate protective respiratory equipment (EN 14387:2008)

(d) Thermal hazards

No hazard to report

Hygiene measures: Wash hands thoroughly after handling. Do not eat, drink or smoke when handling..

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	viscous liquid, brown	
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	4-5.5 (20°C, sol 100%)	
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	

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	0,950 - 1,300 (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

Related to contained substances

Glucoamylase CAS 9032-08-0: no risk of reactivity

Glycerol CAS 56-81-5: reacts with strong acids and bases

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

With regard to the substances contained:
Glucoamylase CAS 9032-08-0: not available
Glycerol CAS 56-81-5: humidity.

10.5. Incompatible materials

No one in particular.

10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

SECTION 11. Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

(a) acute toxicity: Glucoamylase: Ingestion - LD50 rat (mg / kg / 24h bw): nd

Skin contact - LC50 rat / rabbit (mg / kg / 24h bw): nd

Inhalation - LD50 rat (mg / l / 4h): nd

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

(b) skin corrosion/irritation: Glucoamylase: No known significant data

Glycerol: Not classified

Glucoamylase: No known significant effects or critical hazards

Glycerol: Not classified

(c) serious eye damage/irritation: Glucoamylase: No known significant data

Glycerol: Not classified

Glucoamylase: No known significant effects or critical hazards

Glycerol: Not classified

(d) respiratory or skin sensitisation: The product, if inhaled, can cause sensitization.

Glucoamylase: Respiratory sensitizer

Glycerol: Not classified

(e) germ cell mutagenicity: Glucoamylase: Not classified

Glycerol: Not classified

(f) carcinogenicity: Glucoamylase: Not classified

Glycerol: Not classified

(g) eproductivetoxicity: Glucoamylase: Not classified

Glycerol: Not classified - Does not affect fertility. Non-toxic for development.

(h) specific target organ toxicity (STOT) single exposure: Glucoamylase: Unavailable

Glycerol: Not classified Ingestion may cause nausea, vomiting and avoidance.

(i) specific target organ toxicity (STOT) repeated exposureGlucoamylase: Once sensitised, a strong allergic reaction may occur when subsequently exposed to very low levels.

Glycerol: Not classified

(j) aspiration hazard: Glucoamylase: May cause allergy or asthma symptoms or breathing difficulties if inhaled

Glycerol: Inhalation: May cause irritation to the respiratory tract and other mucous membranes.

11.2. Information on other hazards

No data available.

SECTION 12. Ecological information

12.1. Toxicity

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Related to contained substances:

Glucoamylase CAS 9032-08-0:

Acute toxicity - fish LC50 (mg / l / 96h): NA

Acute toxicity - crustaceans EC50 (mg / l / 48h): NA

Acute toxicity to algae ErC50 (mg / l / 72-96h): NA

Chronic toxicity - fish NOEC (mg / l): NA

Chronic toxicity - crustaceans NOEC (mg / l): NA

Chronic toxicity to algae NOEC (mg / l): NA

Glycerol CAS 56-81-5:

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

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:

Glucoamylase CAS 9032-08-0:

readily biodegradable

Glycerol CAS 56-81-5:

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

12.3. Bioaccumulative potential

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Related to contained substances:

Glucoamylase CAS 9032-08-0: unavailable

Glycerol CAS 56-81-5:

Log P octanol / water at 20 ° C -1.76 - 2.6

Kow log -1.76 Bioaccumulative potential

Not expected to bioaccumulate.

12.4. Mobility in soil

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Related to contained substances:

Glucoamylase CAS 9032-08-0:

unavailable

Glycerol CAS 56-81-5:

ground Product that penetrates easily into the ground.

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. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No known adverse effects.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

General information:

Do not reuse empty containers.

Disposal methods:

Dispose of contents/container in accordance with local requirements for commercial waste disposal.

Contaminated Packaging:

Treat as contaminated packaging and follow label warnings even after container is emptied.

European Waste Codes:

Unused product: 02 07 04 materials unsuitable for consumption or processing.

Used product: 15 01 10: Packaging containing residues of or contaminated by hazardous substances.

SECTION 14. Transport information

14.1. UN number or ID number

ADR/ADN/RID/IMDG/IATA: Not regulated.

14.2. UN proper shipping name

ADR/ADN/RID/IMDG/IATA: Not regulated.

14.3. Transport hazard class(es)

ADR/ADN/RID/IMDG/IATA: Not regulated.

14.4. Packing group

ADR/ADN/RID/IMDG/IATA: Not regulated.

14.5. Environmental hazards

ADR/ADN/RID/IMDG/IATA: Not regulated.

14.6. Special precautions for user

ADR/ADN/RID/IMDG/IATA: Not regulated.

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

ADR/ADN/RID/IMDG/IATA: Transport in bulk is not foreseen

SECTION 15. Regulatory information

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

Assimilated laws applicable:

EU. REACH Annex XIV, Substances Subject to Authorization: None present or none present in regulated quantities.
EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC): None present or none present in regulated quantities.

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended: None present or none present in regulated quantities

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: None present or none present in regulated quantities.

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances: None present or none present in regulated quantities.

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I: None present or none present in regulated quantities.

Other relevant assimilated laws (Regulations):

Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (as amended).
EC 1935/2004 and EU 10/2011 on Food Contact materials (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

Relevant Domestic Regulations

The Food Information Regulations 2014 (as amended in England /Wales/ Scotland)

The Food Additives (England/Wales/Scotland) Regulations 2009

The Purity Criteria for Colours, Sweeteners and Miscellaneous Food Additives England/Wales/Scotland) Regulations 2009

The General Food Regulations 2004 (as amended in England /Wales/ Scotland).

The Chemicals (Health and Safety) Trade and Miscellaneous Amendments Regulations 2022

The REACH Enforcement Regulations 2008 (as amended)

Health and Safety at Work etc. Act 1974

Control of Substances Hazardous to Health Regulations 2002 (as amended)

Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (as amended)

The Hazardous Waste (England and Wales) Regulations 2005 (as amended) and The Waste (Miscellaneous Amendments) (EU Exit) Regulations 2019

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]:

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

Classification procedure: Calculation method

Classification according to Assimilated law Regulation (EC) No.1272/2008 (GB).

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: Agreement concerning the International Carriage of Dangerous Goods by Road

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways;

ATE: Acute Toxicity Estimate

BFC: Bioconcentration Factor

BOD: Biochemical Oxygen Demand
CAS: Chemical Abstract Service number
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

Key literature References and Sources for data:

- ECHA Registered Substances:
<https://echa.europa.eu/web/guest/information-on-chemicals/registered-substances>
- SDS supplier
- GESTIS DNEL Database: <http://www.dguv.de/ifa/gestis/gestis-dnel-datenbank/index-2.jsp>
- GESTIS International Limit Value: <http://limitvalue.ifa.dguv.de>
- EH40/2005 Workplace exposure limits
- HSE Great Britain limit values: <https://www.hsl.gov.uk/>
- GB MCL-GB mandatory clas. and labelling list: <https://www.hse.gov.uk/chemical/chemicalclassification/>

Modifications as compared to previous release:

2.2. Label elements, 3.2. Mixtures, 7.2. Conditions for safe storage, including any incompatibilities, 8.2. Exposure controls, 9.1 Information on basic physical and chemical properties

Notice:

This msds was made in good faith by technical Office on the basis of the information available at the date of the last revision. The person in charge must regularly inform the employees about the specific risks they encounter when using this substance/product. The information contained here relate only to the substance/the preparation indicated and may not apply if the product is used improperly or in combination with others. Nothing contained herein shall be construed as a guarantee, either express or implied. It is the responsibility of the user to ensure the opportunities and completeness of the information contained herein for their own particular use.

*** this tab annuls and replaces any previous edition.

Changes to the previous edition: general update.