

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

**1.1. Product identifier**

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

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

Enzyme  
Sectors of use:  
Industrial Manufacturing[SU3]  
Product category:  
Process aid for enological use

Not recommended uses  
Industrial Manufacturing[SU3], Manufacture of food products[SU4], Public domain (administration, education, entertainment, services, craftsmen)[SU22]

**1.3. Details of the supplier of the safety data sheet**

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#### 1.4. Emergency telephone number

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## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008:

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 (EC) No 1272/2008:

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):  
EUH208 - Contains  $\beta$ -Glucanase. May produce an allergic reaction.

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:

PECTINE LYASE (PL), POLYGALACTURONASE (PG)

### 2.3. Other hazards

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

The use of this chemical agent involves the obligation of "risk assessment" by the employer in accordance with the provisions of Dlgs n. 81. April 9, 2008. Workers exposed to this chemical agent should not be subject to health surveillance if the results of the risk assessment show that, depending on the type and quantity of dangerous chemical agent and method and frequency of exposure to the agent, there is only a "moderate Risk" for the health and safety of workers and that the measures laid down in the Decree are sufficient to reduce the risk.

## SECTION 3. Composition/information on ingredients

### 3.1 Substances

Irrilevant

### 3.2 Mixtures

Refer to paragraph 16 for full text of hazard statements

Substance	Concentration	Classification	Index	CAS	EINECS	REACH
POLYGALACTURONASE (PG)	> 1 <= 5%	Resp. Sens. 1, H334		9032-75-1	232-885-6	
PECTINE LYASE (PL)	> 1 <= 5%	Resp. Sens. 1, H334		9033-35-6	232-894-5	
β-Glucanase	> 0,1 <= 1%	Resp. Sens. 1, H334		62213-14-3	263-462-4	

## 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 hazardous. It's possible to give activated charcoal in water or medicinal mineral vaseline oil.

#### **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, CO<sub>2</sub>, 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 and if you use halogenated extinguishers (Halon 1211 fluobrene, Solkan 123, NAF, etc...)

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.

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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  
Recover the product for reuse, if possible, or for removal. Possibly absorb it with inert material or suck it.  
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 and inhalation of vapors  
In residential areas do not use on large surfaces.  
At work do not eat or drink.  
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.

### **7.3. Specific end use(s)**

Industrial Manufacturing:  
Handle with extreme caution.  
Store in a well ventilated place away from heat sources.

## **SECTION 8. Exposure controls/personal protection**

### **8.1. Control parameters**

No data available.

## 8.2. Exposure controls



Appropriate engineering controls:

Industrial Manufacturing:

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

When handling the pure product use safety glasses (EN 166).

(b) Skin protection

(i) Hand protection

When handling the pure product use chemical resistant protective gloves (EN 374-1/EN374-2/EN374-3)

(ii) Other

When handling the pure product, wear full protective clothing (generic workwear / antacid, safety shoes S3-EN ISO 20345) or other protective equipment, according to the instructions of the RSPP

(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	brown liquid	
Odour	characteristic	
Odour threshold	not determined as considered not relevant for the characterization of the product	
pH	3,5 - 8,5 (20 ° C)	
Melting point/freezing point	not determined as considered not relevant for the characterization of the product	
Initial boiling point and boiling range	not determined as considered not relevant for the characterization of the product	
Flash point	not determined as considered not relevant for the characterization of the product	
Evaporation rate	not determined as considered not relevant for the characterization of the product	
Flammability (solid, gas)	not determined as considered not relevant for the characterization of the product	

Physical and chemical properties	Value	Determination method
Upper/lower flammability or explosive limits	not determined as considered not relevant for the characterization of the product	
Vapour pressure	not determined as considered not relevant for the characterization of the product	
Vapour density	not determined as considered not relevant for the characterization of the product	
Relative density	0,95 - 1,30 (20 ° C)	
Solubility	in water	
Water solubility	miscible in all proportions	
Partition coefficient: n-octanol/water	not determined as considered not relevant for the characterization of the product	
Auto-ignition temperature	not determined as considered not relevant for the characterization of the product	
Decomposition temperature	non déterminé comme jugé non pertinent pour la caractérisation du produit	
Viscosity	non déterminé comme jugé non pertinent pour la caractérisation du produit	
Explosive properties	not determined as considered not relevant for the characterization of the product	
Oxidising properties	not determined as considered not relevant for the characterization of the product	

## 9.2. Other information

No data available.

## SECTION 10. Stability and reactivity

### 10.1. Reactivity

POLYGALACTURONASE (PG)

Irrélevant

PECTINE LYASE (PL)

Irrélevant

### 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

Nothing to report

### 10.5. Incompatible materials

None to report

### 10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

## SECTION 11. Toxicological information

### 11.1. Information on toxicological effects

ATE(mix) oral = ∞

ATE(mix) dermal = ∞

ATE(mix) inhal = ∞

(a) acute toxicity: POLYGALACTURONASE (PG): Non-toxic

PECTINE LYASE (PL): Non-toxic

β-Glucanase: 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

(b) skin corrosion/irritation POLYGALACTURONASE (PG): Non-corrosive

PECTINE LYASE (PL): Non-corrosive

β-Glucanase: Not corrosive

POLYGALACTURONASE (PG): Slightly irritating

PECTINE LYASE (PL): Slightly irritating

β-Glucanase: Not irritating

(c) serious eye damage/irritation: POLYGALACTURONASE (PG): Non-corrosive

PECTINE LYASE (PL): Non-corrosive

β-Glucanase: Not corrosive

POLYGALACTURONASE (PG): Irritating

PECTINE LYASE (PL): Irritating

β-Glucanase: Not irritating

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

POLYGALACTURONASE (PG): Respiratory sensitizer

PECTINE LYASE (PL): Respiratory sensitizer

β-Glucanase: Respiratory sensitizer.

May cause allergic or asthmatic symptoms, or difficulty breathing if inhaled.

(e) germ cell mutagenicity: POLYGALACTURONASE (PG): Not available

PECTINE LYASE (PL): Not available

β-Glucanase: Not available

(f) carcinogenicity: POLYGALACTURONASE (PG): Not available

PECTINE LYASE (PL): Not available

β-Glucanase: Not available

(g) reproductive toxicity: POLYGALACTURONASE (PG): Not available

PECTINE LYASE (PL): Not available

β-Glucanase: Not available

(h) specific target organ toxicity (STOT) single exposure: POLYGALACTURONASE (PG): Not available

PECTINE LYASE (PL): Not available

β-Glucanase: Not available

(i) specific target organ toxicity (STOT) repeated exposure POLYGALACTURONASE (PG): Not available

PECTINE LYASE (PL): Not available

β-Glucanase: Not available

(j) aspiration hazard: POLYGALACTURONASE (PG): Not available

PECTINE LYASE (PL): Not available

β-Glucanase: Not available

## SECTION 12. Ecological information

### 12.1. Toxicity

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Related to contained substances:

POLYGALACTURONASE (PG):

Not ecotoxic

PECTINE LYASE (PL):

Not ecotoxic

Protease:

Acute toxicity - LC50 (mg / l / 96h): 8.2 A

Acute toxicity - crustaceans EC50 (mg / l / 48h): 0.868

Acute toxicity - Daphnia EC50 (mg / l / 48h): 0.586 (OECD TG 202)

Toxicity Acute Algae ErC50 (mg / l / 72-96h): 0.830

Chronic Toxicity - NOEC Fish (mg / l): na

Chronic Toxicity - NOEC Crustaceans (mg / l): 0.066

Chronic NOE Toxicity (mg / l): 0.566

β-Glucanase:

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

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

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

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

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

Chronic toxicity NOEC algal (mg / l): nd

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:

POLYGALACTURONASE (PG):

Biodegradable

PECTINE LYASE (PL):

Biodegradable

β-Glucanase:

Not available

### 12.3. Bioaccumulative potential

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Related to contained substances:

POLYGALACTURONASE (PG):

Not bioaccumulabile

PECTINE LYASE (PL):

Not bioaccumulabile

$\beta$ -Glucanase:

Not available

### 12.4. Mobility in soil

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Related to contained substances:

POLYGALACTURONASE (PG):

Not available

PECTINE LYASE (PL):

Not available

$\beta$ -Glucanase:

Not available

### 12.5. Results of PBT and vPvB assessment

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

### 12.6. Other adverse effects

No adverse effects

## SECTION 13. Disposal considerations

### 13.1. Waste treatment methods

Do not reuse empty containers. Dispose of them in accordance with the regulations in force. Any remaining product should be disposed of according to applicable regulations by addressing to authorized companies.

Recover if possible. Operate according to local or national regulations

## SECTION 14. Transport information

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**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. EC 1907/2006): not applicable  
Substances in Candidate List (art. 59 Reg. EC 1907/2006): the product does not contain SVHC  
Substances subject to authorisation (Ann. XIV Reg. CEC 1907/2006): the product does not contain SVHC  
Reg. EC 648/04: see 2.2  
Reg. (EU) n. 1169/2011: see 2.2

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## 15.2. Chemical safety assessment

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 based on data of all mixture components

Main normative references:

Reg. (CE) n. 1907 del 18/12/06 REACH (Registration, Evaluation and Authorisation of CHemicals) et seq.

Reg. (CE) 1272/2008 CLP (Classification Labelling and Packaging) et seq.

Regulation (EC) n. 648 of 31/03/04 (on detergents) et seq.

Regulation (UE) n. 1169/2011 (on the provision of food information to consumers)

Directive 2012/18/EU (on the control of major-accident hazards involving dangerous substances) et seq.

Procedure used to classify under CLP mixture (Reg . EC 1272/2008): calculation method

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: Enviroment 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>
  - 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>

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\*\*\* this tab annuls and replaces any previous edition. (IIXX)

Changes to the previous edition: labeling variation.

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