

AMYLOGLUCOSIDASE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Issue date: 4/15/2016 Revision date: 6/12/2024 Supersedes version of: 8/11/2020 Version: 4.0

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

1.1. Product identifier

Product form : Mixture
Product name : AMYLOGLUCOSIDASE
EC-No. : 232-877-2
CAS-No. : 9032-08-0
Product code : AMG

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

1.2.1. Relevant identified uses

No additional information available

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

No additional information available

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Respiratory sensitisation, Category 1 H334
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

Signal word (CLP) : Danger
Contains : GLUCOAMYLASE
Hazard statements (CLP) : H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Precautionary statements (CLP) : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P284 - Wear respiratory protection.
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 doctor.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
EUH-statements : EUH208 - Contains GLUCOAMYLASE(9032-08-0). May produce an allergic reaction.

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--------------|---|---------|---|
| GLUCOAMYLASE | CAS-No.: 9032-08-0 EC-No.: 232-877-2 | 15 – 30 | Resp. Sens. 1, H334 |

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Call a poison center or a doctor if you feel unwell. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor. |
| First-aid measures after skin contact | : Wash skin with plenty of water. |
| First-aid measures after eye contact | : Rinse eyes with water as a precaution. |
| First-aid measures after ingestion | : Call a poison center or a doctor if you feel unwell. |

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

| | |
|-------------------------------------|--|
| Symptoms/effects after inhalation | : May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Symptoms/effects after skin contact | : None under normal conditions. |
| Symptoms/effects after eye contact | : None under normal conditions. |
| Symptoms/effects after ingestion | : None under normal conditions. |

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Water spray. Dry powder. Foam. Carbon dioxide. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|--|--------------------------------|
| Fire hazard | : No fire hazard. |
| Explosion hazard | : No direct explosion hazard. |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters.
Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Keep cool. Protect from sunlight.
Packaging materials : Store always product in container of same material as original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

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8.1.4. DNEL and PNEC

| AMYLOGLUCOSIDASE (9032-08-0) | |
|------------------------------------|---|
| DNEL/DMEL (additional information) | |
| Additional information | Derived minimal effect level (DMEL) of 60 ng/m ³ for workers and 15 ng/m ³ for consumers has been derived for enzyme proteins |

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety goggles

| Eye protection | | | |
|--------------------------------|----------------------|-----------------|----------|
| Type | Field of application | Characteristics | Standard |
| Safety goggles, Safety glasses | Droplet | Plastic | EN 166 |

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

| Skin and body protection | |
|--------------------------|----------|
| Type | Standard |
| Use protective clothing | EN 14605 |

Hand protection:

Protective gloves

| Hand protection | | | | | |
|-------------------|---|-------------------|----------------|-------------|------------|
| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
| Protective gloves | Nitrile rubber (NBR), Butyl rubber, Neoprene rubber (HNBR), Polyvinylchloride (PVC) | 6 (> 480 minutes) | | | EN ISO 374 |

8.2.2.3. Respiratory protection

Respiratory protection:

Ensure adequate ventilation. [In case of inadequate ventilation] wear respiratory protection.

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| Respiratory protection | | | |
|------------------------|------------------|----------------------------|----------|
| Device | Filter type | Condition | Standard |
| | Type P3, ABEK-P3 | Droplet, Vapour protection | EN 143 |

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|----------------------|
| Physical state | : Liquid |
| Appearance | : Liquid. |
| Colour | : brown. |
| Odour | : Perceptible odour. |
| Odour threshold | : No data available |
| pH | : 4 – 4.5 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : Not applicable. |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : > 100 °C |
| Auto-ignition temperature | : Not applicable. |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Not applicable |
| Vapour pressure | : No data available |
| Relative vapour density at 20°C | : No data available. |
| Relative density | : 1.09 - 1.15 |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

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10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

AMYLOGLUCOSIDASE (9032-08-0)

| | |
|---------------|--------------|
| LD50 oral rat | > 2000 mg/kg |
|---------------|--------------|

GLUCOAMYLASE (9032-08-0)

| | |
|---------------|--------------|
| LD50 oral rat | > 2000 mg/kg |
|---------------|--------------|

Skin corrosion/irritation : Not classified
pH: 4 – 4.5
Serious eye damage/irritation : Not classified
pH: 4 – 4.5
Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified

GLUCOAMYLASE (9032-08-0)

| | |
|----------------------------|--|
| NOAEL (oral, rat, 90 days) | ≥ 1519.2 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) |
|----------------------------|--|

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

AMYLOGLUCOSIDASE (9032-08-0)

| | |
|-----------------|-----------|
| LC50 - Fish [1] | > 20 mg/l |
|-----------------|-----------|

GLUCOAMYLASE (9032-08-0)

| | |
|-----------------|---|
| LC50 - Fish [1] | > 227.9 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) |
|-----------------|---|

| | |
|----------------------|--|
| EC50 - Crustacea [1] | > 227.9 mg/l Test organisms (species): Daphnia magna |
|----------------------|--|

| | |
|----------------------|--|
| EC50 72h - Algae [1] | > 227.9 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
|----------------------|--|

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12.2. Persistence and degradability

AMYLOGLUCOSIDASE (9032-08-0)

| | |
|-------------------------------|------------------------|
| Persistence and degradability | Not rapidly degradable |
|-------------------------------|------------------------|

GLUCOAMYLASE (9032-08-0)

| | |
|-------------------------------|------------------------|
| Persistence and degradability | Not rapidly degradable |
|-------------------------------|------------------------|

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--|---|
| Regional waste regulation | : Disposal must be done according to official regulations. |
| Waste treatment methods | : Dispose of contents/container in accordance with licensed collector's sorting instructions. |
| Sewage disposal recommendations | : Disposal must be done according to official regulations. |
| Product/Packaging disposal recommendations | : Disposal must be done according to official regulations. |
| Additional information | : Do not re-use empty containers. |

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

| ADR | IMDG | IATA | ADN | RID |
|---|---------------|---------------|---------------|---------------|
| 14.1. UN number | | | | |
| Not regulated for transport | | | | |
| 14.2. UN proper shipping name | | | | |
| Not regulated | Not regulated | Not regulated | Not regulated | Not regulated |
| 14.3. Transport hazard class(es) | | | | |
| Not regulated | Not regulated | Not regulated | Not regulated | Not regulated |
| 14.4. Packing group | | | | |
| Not regulated | Not regulated | Not regulated | Not regulated | Not regulated |
| 14.5. Environmental hazards | | | | |
| Not regulated | Not regulated | Not regulated | Not regulated | Not regulated |
| No supplementary information available | | | | |

14.6. Special precautions for user

Overland transport

Not regulated

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Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

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

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| Abbreviations and acronyms: | |
|-----------------------------|---|
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BLV | Biological limit value |
| BOD | Biochemical oxygen demand (BOD) |
| COD | Chemical oxygen demand (COD) |
| DMEL | Derived Minimal Effect level |
| DNEL | Derived-No Effect Level |
| EC-No. | European Community number |
| EC50 | Median effective concentration |
| EN | European Standard |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| NOAEL | No-Observed Adverse Effect Level |
| NOEC | No-Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| OEL | Occupational Exposure Limit |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| STP | Sewage treatment plant |
| ThOD | Theoretical oxygen demand (ThOD) |
| TLM | Median Tolerance Limit |
| VOC | Volatile Organic Compounds |
| CAS-No. | Chemical Abstract Service number |
| N.O.S. | Not Otherwise Specified |
| vPvB | Very Persistent and Very Bioaccumulative |
| ED | Endocrine disrupting properties |

| Full text of H- and EUH-statements: | |
|-------------------------------------|--|
| EUH208 | Contains GLUCOAMYLASE(9032-08-0). May produce an allergic reaction. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Resp. Sens. 1 | Respiratory sensitisation, Category 1 |

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Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.