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

1.1. Product identifier

Trade name/designation:

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

Use of the substance/mixture:

Enzyme preparations are biocatalysts used in a variety of industrial processes within food manufacturing

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Eaton Technologies GmbH Langenlonsheim Branch An den Nahewiesen 24 55450 Langenlonsheim Germany

Telephone: +49 6704 204-0 (Diese Nummer ist nur zu Bürozeiten besetzt.)

Telefax: +49 6704 204-121

E-mail: SDB@Eaton.com

Website: www.eaton.com/filtration

1.4. Emergency telephone number

Notfallauskunft bei Vergiftungen: Giftinformationszentrum Mainz (Deutsch und Englisch). Emergency medical information: Poison information center Mainz (German and English)., 24h: +49 6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| Hazard classes and hazard categories | | Classification pro cedure |
|---|--|---------------------------|
| | H334: 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:



Health hazard

Signal word: Danger

| hazard statements for health hazards | | |
|--------------------------------------|--|--|
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| Precautionary statements Prevention | | |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. | |
| P285 | In case of inadequate ventilation wear respiratory protection. | |

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Precautionary statements Response

| | · · · · · · · · · · · · · · · · · · · |
|-------------|--|
| P304 + P341 | IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position |
| | comfortable for breathing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention. |
| P342 + P311 | If experiencing respiratory symptoms: Call a POISON CENTER/doctor/ |

2.3. Other hazards

Adverse physicochemical effects:

On basis of test data.: none

Adverse human health effects and symptoms:

Repeated inhalation of enzyme dust or aerosols resulting improper handling may induce sensitization and may cause allergic type 1 reactions in sensitized individuals. Irritant effect on the skin: mild irritant.

Irritant effect on the eve: mild irritant.

Adverse environmental effects:

On basis of test data.: none

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Description:

Enzymes are defined as enzyme concentrate (dry matter basis). Active enzymproteine (AED) 2.5 - c.5 Wt %

Active enzymproteine (AEP): 2.5 - < 5 Wt %

Hazardous ingredients / Hazardous impurities / Stabilisers:

| product identifiers | Substance name Classification according to Regulation (EC) No 1272/2008 [CLP] | Concen- tration |
|---|--|--------------------|
| CAS No.: 9032-75-1 EC No.: 232-885-6 | Polygalacturonase The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP]. Danger H334 | 5 - < 10 Wt % |
| CAS No.: 77-92-9 EC No.: 201-069-1 REACH No.: 01-2119457027-40 | citric acid Eye Irrit. 2 H319 | 1 - < 2.5 Wt % |

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

Accidental release measures high concentrations

Following inhalation:

Effects: May produce an allergic reaction.

Symptoms: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Cough Remove casualty to fresh air and keep warm and at rest. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

In case of skin contact:

Effects: Frequently or prolonged contact with skin may cause dermal irritation. Symptoms: mild irritant.

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.

IF ON CLOTHING: Take off immediately all contaminated clothing. Wash contaminated clothing prior to re-use.

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After eye contact:

Effects: Irritating to eyes.

Symptoms: mild irritant.

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion:

Effects: The following symptoms may occur: After ingestion: Gastrointestinal complaints, Nausea, Vomiting

Symptoms: irritant.

Rinse mouth immediately and drink plenty of water. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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 Treat symptomatically.

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide (CO2), Water mist. alcohol resistant foam, Dry extinguishing powder **Unsuitable extinguishing media:**

none

*

5.2. Special hazards arising from the substance or mixture

May produce an allergic reaction.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

No special environmental measures are necessary. Collect spillage.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Conditions to avoid: generation/formation of aerosols. Generation/formation of dust Take up by mechanical means preferably by a vacuum cleaner equipped with a high efficiency filter. Flush remainder carefully with plenty of water. Avoid splashing and high pressure washing (avoid formation of aerosols).

Provide adequate ventilation.

6.4. Reference to other sections

No data available

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Conditions to avoid: generation/formation of aerosols. Generation/formation of dust Provide adequate ventilation as well as local exhaustion at critical locations. The product is especial fomulated to prevent formation of enzyme dust. However, inappropriate handling may cause formation of dust or aerosols.

Fire prevent measures:

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep container tightly closed in a cool, well-ventilated place. storage temperature 0 - 25 $^{\circ}\mathrm{C}$

7.3. Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Tightly sealed safety glasses.

Skin protection:

Hand protection: The selsection of suitable gloves not only depends on the material, but also on other quality characteristics. These may vary from manufacturer to manufacturer. Since the product is a preparation from several substances, the resistance of glove materials cannot be determined in advance and must therefore be checked prior to the application.

Suitable material: The glove material has to be impermeable and resistant to the product/the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/the preparation/the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Breakthrough time (maximum wearing time): The exact break through time has to be found out by the manufacturer of the protective gloves nad has to be observed.

Respiratory protection:

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Suitable respiratory protection apparatus: Particle filter device (DIN EN 143) P 3

Other protection measures:

Protective clothing: lab coat

General health and safety measures: The usual precautionary measures are to be adhered to when handling chemicals.

8.2.3. Environmental exposure controls No data available

8.3. Additional information

*

Data apply to the main component. inhalative, long-term, local DMEL worker : 60 ng/m³

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Granulate **Odour:** slight fermentation odour Colour: whitish - brown

9.2. Other information

Odour, ph Value, Boiling Point, Melting Point, Flash Point, Ignition temperature, Vapour pressure, Density and Solubility are not relevant to safety. For further information see the Product Specification and the Product Sheet for this preparation.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Substance is, under normal conditions, chemically stable.

10.3. Possibility of hazardous reactions No data available

10.4. Conditions to avoid

Harmful dust is produced during dry-state pulverisation.

10.5. Incompatible materials

none

*

10.6. Hazardous decomposition products

This article doesn't contain hazardous substances or mixtures intended to be released under normal or reasonably foreseeable conditions of use.

SECTION 11: Toxicological information

----. .

| CAS No. | Substance name | Toxicological information |
|----------------------------------|--|--|
| 9032-75-1 | Polygalacturonase | LD ₅₀ oral: 2,000 mg/kg OECD TG 401, 420 |
| Not an irrit (OECD 404 | | |
| | ant. (OECD 405) | |
| | y or skin sensitisation: sensitization by inhalation. | |
| | hicity: ons of human germ cell mutagenicity exist. (Ames test) OECD 476 | |
| Reproduct i No data av | ive toxicity: ailable | |
| STOT-single No data av | e exposure: ailable | |
| STOT-repea No data av | a ted exposure: ailable | |
| | information: to the main component. | |
| | | |
| | | en |



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SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity: Acute Daphnia toxicity Polygalacturonase EC50 (48h): 31,7 - 457 mg aep/l (OECD 202) Citric Acid LC50: > 100 mg/l

Algae toxicity Polygalacturonase ErC50: (72h): > 5,2 mg aep/l (OECD 201) Citric Acid LC50: > 100 mg/l

Acute fish toxicity Polygalacturonase LC50: (96h): 58,3 - 326,7 mg aep/l (OECD 203) citric acid LC50: > 100 mg/l

Terrestrial toxicity: No data available

Effects in sewage plants: No data available

12.2. Persistence and degradability

Additional information:

Further ecological information: Partition coefficient: n-octanol/water: < 0 The organic part of the product is biodegradable. According to the present state of knowledge negative ecological effects are not expected.

12.3. Bioaccumulative potential

Accumulation / Evaluation:

No indication of bioaccumulation potential.

12.4. Mobility in soil

not relevant

12.5. Results of PBT and vPvB assessment

| CAS No. | Substance name | Results of PBT and vPvB assessment |
|-----------|-------------------|------------------------------------|
| 9032-75-1 | Polygalacturonase | _ |
| 77-92-9 | citric acid | — |

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Do not allow to enter into surface water or drains.

Waste treatment options

Appropriate disposal / Package:

Non-contaminated packages may be recycled.

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SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.

not relevant

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant

SECTION 15: Regulatory information

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

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

S Selbsteinstufung

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1. Indication of changes

- 4.3. Indication of any immediate medical attention and special treatment needed
- 8.3. Additional information
- 11.1. Information on toxicological effects

16.2. Abbreviations and acronyms

No data available

16.3. Key literature references and sources for data

No data available



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16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

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

| Hazard classes and hazard categories | Hazard statements | Classification pro cedure |
|---|--|------------------------------|
| Respiratory or skin sensitisation (Resp. Sens. 1) | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

| Hazard statements | |
|-------------------|--|
| H319 | Causes serious eye irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |

16.6. Training advice

No data available

16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

* Data changed compared with the previous version