8 NZYtech

CZ0011 - Cellulase 5E, Clostridium thermocellum

| Date of | compilation: 23/06/ | 2020 Revised: 12/10/2023 Version: 2 (Replaced 1) |
|---------|---------------------|---|
| SEC | TION 1: IDENTIF | ICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING |
| 1.1 | Product identifi | er: CZ0011 - Cellulase 5E, <i>Clostridium thermocellum</i> |
| | | Glycerol |
| | CAS: | 56-81-5 |
| | EC: | 200-289-5 |
| | Index: | Non-applicable |
| | REACH: | 01-2119471987-18-XXXX |
| | Other means of | identification: |
| | Non-applicable | |
| 1.2 | Relevant identif | ied uses of the substance or mixture and uses advised against: |
| | Relevant uses: La | boratory. For professional users only. |
| | Uses advised agai | inst: All uses not specified in this section or in section 7.3 |
| 1.3 | Details of the su | Ipplier of the safety data sheet: |
| | | lo Lumiar Campus do Lumiar - Edif. E, r/c - Lisboa - Portugal |
| 1.4 | , | phone number: Contact Local Poison Information Center or Local Emergency Number |
| | | |
| SEC | TION 2: HAZARD | S IDENTIFICATION ** |
| 2.1 | Classification of | the substance or mixture: |
| | CLP Regulation | (EC) No 1272/2008: |
| | Classification of t | his product has been carried out in accordance with CLP Regulation (EC) No 1272/2008. |
| | | ritation, Category 2, H319 |

Repr. 1B: Reproductive toxicity, Category 1B, H360D Skin Irrit. 2: Skin irritation, Category 2, H315

2.2 Label elements:

CLP Regulation (EC) No 1272/2008:

Labelling of packages where the contents do not exceed 125 ml:

Danger



Hazard statements:

Repr. 1B: H360D - May damage the unborn child.

Precautionary statements:

P201: Obtain special instructions before use.

P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.

P308+P313: IF exposed or concerned: Get medical advice/attention.

P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

Substances that contribute to the classification

Imidazole (CAS: 288-32-4)

Additional Labelling:

Restricted to professional users

2.3 Other hazards:

** Changes with regards to the previous version

This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific

Revised: 12/10/2023

legislation



CZ0011 - Cellulase 5E, Clostridium thermocellum

Date of compilation: 23/06/2020

Version: 2 (Replaced 1)

SECTION 2: HAZARDS IDENTIFICATION ** (continued)

Product does not meet PBT/vPvB criteria

Endocrine-disrupting properties: The product does not meet the criteria.

** Changes with regards to the previous version

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

Chemical description: Mixture of substances

Components:

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

| | Identification | Chemical name/Classification | | | Concentration |
|-------------------------|--|------------------------------|--|-----------------|---------------|
| CAS: | 288-32-4 | Imidazole ⁽¹⁾ | | Self-classified | |
| EC: Index: REACH: | 206-019-2 Non-applicable 01-2119485825-24- XXXX | Regulation 1272/2008 | Acute Tox. 4: H302; Eye Dam. 1: H318; Repr. 1B: H360D; Skin Corr. 1C: H314 - Danger | (1) | 1 - <2,5 % |

⁽¹⁾ Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2020/878

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

3.2 Mixture:

Non-applicable

Acute toxicity estimate for the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or as determined in accordance with Annex I to that Regulation:

| Identification | Acu | Genus | |
|----------------|-----------------|------------------|--|
| Imidazole | LD50 oral | 500 mg/kg (ATEi) | |
| CAS: 288-32-4 | LD50 dermal | Non-applicable | |
| EC: 206-019-2 | LC50 inhalation | Non-applicable | |

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

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

Acute and delayed effects are indicated in sections 2 and 11.

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

This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific

legislation

NZYtech

CZ0011 - Cellulase 5E, Clostridium thermocellum

Date of compilation: 23/06/2020

Revised: 12/10/2023

Version: 2 (Replaced 1)

SECTION 4: FIRST AID MEASURES (continued)

Non-applicable

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

Non-applicable

5.2 Special hazards arising from the substance or mixture:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.- Technical recommendations for the prevention of fires and explosions



This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific

legislation

CZ0011 - Cellulase 5E, Clostridium thermocellum

| Date of compilation: 23/06/2020 | Revised: 12/10/2023 | Version: 2 (Replaced 1) |
|---------------------------------|---------------------|-------------------------|
|---------------------------------|---------------------|-------------------------|

SECTION 7: HANDLING AND STORAGE (continued)

Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

PREGNANT WOMEN SHOULD NOT BE EXPOSED TO THIS PRODUCT. Transfer in designated areas that comply with the necessary safety conditions (emergency showers and eyewash stations in close proximity), using personal protection equipment, especially on the hands and face (See section 8). Limit manual transfers to small amounts only. Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Store in a cool, dry, well-ventilated location

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

7.2

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace (European OEL, not country-specific legislation):

There are no applicable occupational exposure limits for the substances contained in the product

DNEL (Workers):

| | | Short e | xposure | Long ex | xposure |
|----------------|------------|----------------|----------------|------------------------|----------------|
| Identification | | Systemic | Local | Systemic | Local |
| Imidazole | Oral | Non-applicable | Non-applicable | Non-applicable | Non-applicable |
| CAS: 288-32-4 | Dermal | Non-applicable | Non-applicable | 1,5 mg/kg | Non-applicable |
| EC: 206-019-2 | Inhalation | Non-applicable | Non-applicable | 10,6 mg/m ³ | Non-applicable |

DNEL (General population):

Non-applicable

PNEC:

| Identification | | | | |
|----------------|--------------|----------------|-------------------------|-------------|
| Imidazole | STP | 10 mg/L | Fresh water | 0,13 mg/L |
| CAS: 288-32-4 | Soil | 0,043 mg/kg | Marine water | 0,013 mg/L |
| EC: 206-019-2 | Intermittent | 1,3 mg/L | Sediment (Fresh water) | 0,336 mg/kg |
| | Oral | Non-applicable | Sediment (Marine water) | 0,034 mg/kg |

8.2 Exposure controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<CE marking>> in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

NZYtech

CZ0011 - Cellulase 5E, Clostridium thermocellum

| TION | 8: EXPOSURE | CONTROLS/PERSONA | L PROTECTIO | N (continued) | | |
|---------------|--|--|----------------------------------|--|------|--|
| | Pictogram | PPE | Labelling | CEN Standard | | Remarks |
| | Mandatory respiratory tract protection | Filter mask for gases and vapours | CAT III | EN 405:2002+A1:2010 | C | place when there is a taste or smell of the ontaminant inside the face mask. If the contaminant comes with warnings it is commended to use isolation equipment. |
| C | Specific protection | n for the hands | | | | |
| | Pictogram | PPE | Labelling | CEN Standard | | Remarks |
| | Mandatory hand protection | Chemical protective gloves (Material: PVC, Breakthrough time: > 480 min, Thickness: 0.7 mm) | CATI | EN ISO 21420:2020 | Repl | ace the gloves at any sign of deterioration |
| D | Eye and face prot | ection | | | | |
| | Pictogram | PPE | Labelling | CEN Standard | | Remarks |
| | Mandatory face protection | Face shield | CAT II | EN 166:2002 EN 167:2002 EN 168:2002 EN ISO 4007:2018 | | a daily and disinfect periodically according aanufacturer´s instructions. Use if there is risk of splashing. |
| E | Body protection | | | | 1 | |
| | Pictogram | PPE | Labelling | CEN Standard | | Remarks |
| | Mandatory complete body protection | Disposable clothing for protection against chemical risks | CATI | EN 13034:2005+A1:2009 EN 168:2002 EN ISO 13982- 1:2004/A1:2010 EN ISO 6529:2013 EN ISO 6530:2005 EN 464:1994 | | r professional use only. Clean periodically ording to the manufacturer's instructions. |
| | Mandatory foot protection | Safety footwear for protection against chemical risk | CAT III | EN ISO 20345:2011 EN 13832-1:2019 | Re | eplace boots at any sign of deterioration. |
| F | Additional emerge | ency measures | | | | |
| | Emergency mea | asure St | andards | Emergency measu | ıre | Standards |
| | Emergency sho | ISO 3864-1:20 | 5I Z358-1 11, ISO 3864-4:201: | 1 Eyewash station | IS | DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011 |
| Env | vironmental exp | osure controls: | | | | |
| In a spill | ccordance with th | e community legislation for product and its container. | | | | nmended to avoid environmental .D |
| | - | ive 2010/75/EU, this prod | luct has the follo | wing characteristics | | |
| | V.O.C. (Supply): | | weight | יייווש נוומומנופווצוונג. | | |
| | V.O.C. (Supply): V.O.C. density at | | m ³ (0 g/L) | | | |
| | | - | | | | |
| | Average carbon r | | applicable applicable | | | |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

*Not relevant due to the nature of the product, not providing information property of its hazards.

NZYtech

Safety data sheet This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific legislation

CZ0011 - Cellulase 5E, Clostridium thermocellum

| SECTION 9: I | | |
|--------------|--|------------------------|
| | PHYSICAL AND CHEMICAL PROPERTIES | (continued) |
| For com | plete information see the product datasheet. | |
| Appear | ance: | |
| Physical | state at 20 °C: | Liquid |
| Appeara | nce: | Not available |
| Colour: | | Colourless |
| Odour: | | Odourless |
| Odour th | reshold: | Non-applicable * |
| Volatili | :y: | |
| Boiling p | oint at atmospheric pressure: | Non-applicable * |
| Vapour r | pressure at 20 °C: | Non-applicable * |
| ا Vapour | pressure at 50 °C: | Non-applicable * |
| Evaporat | ion rate at 20 ºC: | Non-applicable * |
| Product | description: | |
| Density | at 20 °C: | 1110,8 kg/m³ |
| Relative | density at 20 °C: | 1,111 |
| Dynamic | viscosity at 20 °C: | Non-applicable * |
| Kinemati | c viscosity at 20 °C: | Non-applicable * |
| Kinemati | c viscosity at 40 °C: | Non-applicable * |
| Concentr | ation: | Non-applicable * |
| pH: | | 7,2 |
| Vapour o | lensity at 20 °C: | Non-applicable * |
| Partition | coefficient n-octanol/water 20 °C: | Non-applicable * |
| Solubility | n water at 20 ºC: | Non-applicable * |
| - | properties: | Non-applicable * |
| Decomp | osition temperature: | Non-applicable * |
| - | point/freezing point: | Non-applicable * |
| Flamma | | |
| Flash Po | | Non Flammable (>60 °C) |
| | ility (solid, gas): | Non-applicable * |
| - | ion temperature: | 480 °C |
| | ammability limit: | Non-applicable * |
| | ammability limit: | Non-applicable * |
| | characteristics: | |
| | equivalent diameter: | Non-applicable |
| | nformation: | |
| | ation with regard to physical hazard classe | |
| | e properties: | Non-applicable * |
| - |) properties: | Non-applicable * |
| | e to metals: | Non-applicable * |
| | combustion: | Non-applicable * |
| compone | -total percentage (by mass) of flammable ents: afety characteristics: | Non-applicable * |
| | tension at 20 °C: | Non-applicable * |
| | ant due to the nature of the product, not providing inform | |

Safety data sheet legislation

This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific) NZYtech

CZ0011 - Cellulase 5E, Clostridium thermocellum

| Date of compilation: 23/06/2020 Revised: 12/10/2023 Version: 2 (Replaced 1) | | | | | | | | |
|---|---|-----------------------------------|-----------------------------------|-----------------------------|-------------------------------|--|--|--|
| SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued) | | | | | | | | |
| | Refraction index: Non-applicable * | | | | | | | |
| | *Not relevant due to the nature of | f the product, not providing info | prmation property of its hazards. | | | | | |
| SECT | ION 10: STABILITY AND | REACTIVITY | | | | | | |
| 10.1 | Reactivity: | | | | | | | |
| 10.2 | No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet. 0.2 Chemical stability: | | | | | | | |
| | Chemically stable under the | e indicated conditions of st | orage, handling and use. | | | | | |
| 10.3 | Possibility of hazardous | reactions: | | | | | | |
| | Under the specified condition | ons, hazardous reactions t | hat lead to excessive temp | peratures or pressure are i | not expected. | | | |
| 10.4 | Conditions to avoid: | | | | | | | |
| | Applicable for handling and | l storage at room tempera | ture: | | | | | |
| | Shock and friction | Contact with air | Increase in temperature | Sunlight | Humidity | | | |
| | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | | | |
| 10.5 | Incompatible materials: | | | | | | | |
| | Acids | Water | Oxidising materials | Combustible materials | Others | | | |
| | Avoid strong acids | Not applicable | Precaution | Not applicable | Avoid alkalis or strong bases | | | |

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

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

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

- A- Ingestion (acute effect):
 - Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
 - Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- B- Inhalation (acute effect):
 - Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
 - Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.
- C- Contact with the skin and the eyes (acute effect):
 - Contact with the skin: Produces skin inflammation.
 - Contact with the eyes: Produces eye damage after contact.
- D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
 - Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
 - IARC: Non-applicable
 - Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
 - Reproductive toxicity: May damage the unborn child.



This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific legislation

CZ0011 - Cellulase 5E, Clostridium thermocellum

| Date of c | ompilation: 23/06/2020 | Revised: 12/10/2023 | Version: 2 (Re | eplaced 1) | | |
|--|---|--|--|---|---|--------------|
| SECT | ION 11: TOXICOLOGICAL | INFORMATION (continue | ed) | | | |
| | E- Sensitizing effects: | | | | | |
| | E- Sensitizing effects: Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3. Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3. F- Specific target organ toxicity (STOT) - single exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3. G- Specific target organ toxicity (STOT)-repeated exposure: | | | | | |
| | it does not contain substa - Skin: Based on availab hazardous for this effect. H- Aspiration hazard: | oxicity (STOT)-repeated expo ances classified as hazardous le data, the classification crite For more information see se | o for this effect. I eria are not met, ection 3. | For more informati as it does not cont | on see section 3. ain substances classifie | ed as |
| | this effect. For more infor Other information: | the classification criteria are r rmation see section 3. | iot met, as it doe | S NOT CONTAIN SUDS | Lances Classifieu as naz | ai uous ior |
| | Non-applicable | | | | | |
| | Specific toxicology inform | ation on the substances: | | | | |
| | | Identification | | Acu | te toxicity | Genus |
| | Imidazole | | | LD50 oral | 500 mg/kg (ATEi) | |
| | CAS: 288-32-4 | | | LD50 dermal | >2000 mg/kg | |
| | EC: 206-019-2 | | | | | |
| 11.7 | Information on other haz | ards | | LC50 inhalation | >5 mg/L | |
| 11.2 | Information on other haz | | | LC50 inhalation | >5 mg/L | |
| 11.2 | Endocrine disrupting prop | erties | at the criteria | LC50 inhalation | >5 mg/L | |
| 11.2 | Endocrine disrupting prop | erties | et the criteria. | LCS0 inhalation | >5 mg/L | |
| 11.2 | Endocrine disrupting prop Endocrine-disrupting propertie Other information | erties | et the criteria. | LC50 inhalation | >5 mg/L | |
| 11.2 | Endocrine disrupting prop | erties | et the criteria. | LCS0 inhalation | >5 mg/L | |
| | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable | erties es: The product does not me | et the criteria. | LC50 inhalation | >5 mg/L | |
| SECT | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable | erties es: The product does not mee ORMATION | | | | |
| SECT The ex | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF xperimental information related | erties es: The product does not mee ORMATION d to the eco-toxicological prop | perties of the pro | duct itself is not av | /ailable | |
| SECT The ex Based For m | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradability | erties es: The product does not med ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradable Not available | erties es: The product does not med ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradable Not available Bioaccumulative potential | erties es: The product does not med ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradable Not available Bioaccumulative potential Not available | erties es: The product does not med ORMATION d to the eco-toxicological prop cation criteria are not met, as | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 12.4 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF Apperimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradabie Not available Bioaccumulative potential Not available Mobility in soil: | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as ility: | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 12.4 12.5 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF Apperimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradable Not available Bioaccumulative potential Not available Mobility in soil: Not available Results of PBT and vPvB a Product does not meet PBT/v | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as ility: : PyB criteria | perties of the pro | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 12.4 12.5 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradable Not available Bioaccumulative potential Not available Mobility in soil: Not available Results of PBT and vPvB a Product does not meet PBT/v Endocrine disrupting prop | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as ility: : PvB criteria erties: | perties of the pro it does not conta | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 12.4 12.5 12.6 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF Apperimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradabie Not available Bioaccumulative potential Not available Mobility in soil: Not available Results of PBT and vPvB and Product does not meet PBT/v Endocrine disrupting propertie | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as ility: : PvB criteria erties: | perties of the pro it does not conta | duct itself is not av | /ailable | this effect. |
| SECT The ex Based For m 12.1 12.2 12.3 12.4 12.5 12.6 | Endocrine disrupting prop Endocrine-disrupting propertie Other information Non-applicable ION 12: ECOLOGICAL INF experimental information related on available data, the classific ore information see section 3. Toxicity: Not available Persistence and degradable Not available Bioaccumulative potential Not available Mobility in soil: Not available Results of PBT and vPvB a Product does not meet PBT/v Endocrine disrupting prop | erties es: The product does not mee ORMATION d to the eco-toxicological prop cation criteria are not met, as ility: : PvB criteria erties: | perties of the pro it does not conta | duct itself is not av | /ailable | this effect. |

- CONTINUED ON NEXT PAGE -

Revised: 12/10/2023



This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific

legislation

CZ0011 - Cellulase 5E, Clostridium thermocellum

Date of compilation: 23/06/2020

Revised: 12/10/2023

Version: 2 (Replaced 1)

13.1 Waste treatment methods:

SECTION 13: DISPOSAL CONSIDERATIONS

| Code | Description | Waste class (Regulation (EU) No 1357/2014) |
|------|---|---|
| | It is not possible to assign a specific code, as it depends on the intended use by the user | Dangerous |

Type of waste (Regulation (EU) No 1357/2014):

HP10 Toxic for reproduction

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2014/955/EC) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. Waste should not be disposed of to drains. See paragraph 6.2.

Regulations related to waste management:

In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to ADR 2023 and RID 2023:

| 14.2 14.3 14.4 14.5 | UN number or ID number: UN proper shipping name: Transport hazard class(es): Labels: Packing group: Environmental hazards: Special precautions for user Special regulations: | Non-applicable Non-applicable Non-applicable Non-applicable Non-applicable No |
|------------------------------|---|--|
| | Tunnel restriction code: | Non-applicable |
| | Physico-Chemical properties: Limited quantities: | see section 9 Non-applicable |
| 14.7 | Maritime transport in bulk according to IMO instruments: | Non-applicable |
| Transpo | t of dangerous goods by sea: | |
| With rega | rd to IMDG 40-20: | |
| | UN number or ID number: UN proper shipping name: | Non-applicable Non-applicable |
| 14.3 | | Non-applicable Non-applicable |
| 14.4 | Packing group: | Non-applicable |
| 14.5 | Marine pollutant: | No |
| 14.6 | Special precautions for user | |
| | Special regulations: EmS Codes: | Non-applicable |
| | Physico-Chemical properties: | see section 9 |
| | Limited quantities: | Non-applicable |
| | Segregation group: | Non-applicable |
| 14.7 | Maritime transport in bulk according to IMO instruments: | Non-applicable |
| Transpo | rt of dangerous goods by air: | |

Revised: 12/10/2023

8 NZYtech

CZ0011 - Cellulase 5E, Clostridium thermocellum

| Date of compilation: 23/06/2020 | Revised: 12/10/2023 | Version: 2 (Replaced 1) | |
|---|---------------------------------|-------------------------|--|
| SECTION 14: TRANSPORT INFORMATION (continued) | | | |
| With regard to IATA/ICAO 2023: | | | |
| 14.1 UN number | or ID number: Non-applicable | | |
| 14.2 UN proper s | shipping name: Non-applicable | | |
| 14.3 Transport h | azard class(es): Non-applicable | | |
| Labels: | Non-applicable | | |
| 14.4 Packing gro | Non-applicable | | |
| 14.5 Environme | ntal hazards: No | | |
| 14.6 Special pred | cautions for user | | |
| Physico-Chen | nical properties: see section 9 | | |
| 14.7 Maritime tra according t instruments | | | |

SECTION 15: REGULATORY INFORMATION

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

Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Non-applicable

Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable

Regulation (EC) No 1005/2009, about substances that deplete the ozone layer: Non-applicable

Article 95, REGULATION (EU) No 528/2012: Non-applicable

REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

Seveso III:

Non-applicable

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc):

Product classified hazardous under the CMR. Sale and distribution to the general public is prohibited. Due to its CMR category, it is essential to apply the specific measures for workplace hazard prevention covered in articles 4 and 5 of the 2004/37/EC Directive and later modifications.

Shall not be used in:

--ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,

tricks and jokes,

-games for one or more participants, or any article intended to be used as such, even with ornamental aspects.

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation:

The product could be affected by sectorial legislation

15.2 Chemical safety assessment:

The supplier has not carried out evaluation of chemical safety.

SECTION 16: OTHER INFORMATION **

Legislation related to safety data sheets:

The SDS shall be supplied in an official language of the country where the product is placed on the market. This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878).

Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:

** Changes with regards to the previous version

NZYtech

CZ0011 - Cellulase 5E, Clostridium thermocellum

| SECTION 16: OTHER INFORMATION ** (continued) COMMISSION REGULATION (EU) 2020/878 CLP Regulation (EC) No 1272/2008 (SECTION 2, SECTION 16): • Hazard statements Texts of the legislative phrases mentioned in section 2: H315: Causes skin irritation. H360D: May damage the unborn child. | |
|---|----|
| CLP Regulation (EC) No 1272/2008 (SECTION 2, SECTION 16): · Hazard statements Texts of the legislative phrases mentioned in section 2: H315: Causes skin irritation. H360D: May damage the unborn child. | |
| H315: Causes skin irritation. H360D: May damage the unborn child. | |
| H319: Causes serious eye irritation. | |
| Texts of the legislative phrases mentioned in section 3: | |
| The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3 | |
| CLP Regulation (EC) No 1272/2008: | |
| Acute Tox. 4: H302 - Harmful if swallowed. | |
| Eye Dam. 1: H318 - Causes serious eye damage. | |
| Repr. 1B: H360D - May damage the unborn child. | |
| Skin Corr. 1C: H314 - Causes severe skin burns and eye damage. | |
| Advice related to training: | |
| Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension are interpretation of this safety data sheet, as well as the label on the product. | .d |
| Principal bibliographical sources: | |
| http://echa.europa.eu | |
| http://eur-lex.europa.eu | |
| Abbreviations and acronyms: | |
| ADR: European agreement concerning the international carriage of dangerous goods by road | |
| IMDG: International maritime dangerous goods code | |
| IATA: International Air Transport Association | |
| ICAO: International Civil Aviation Organisation | |
| COD: Chemical Oxygen Demand | |
| BOD5: 5day biochemical oxygen demand BCF: Bioconcentration factor | |
| LD50: Lethal Dose 50 | |
| LC50: Lethal Concentration 50 | |
| EC50: Effective concentration 50 | |
| LogPOW: Octanolwater partition coefficient | |
| Koc: Partition coefficient of organic carbon | |
| UFI: unique formula identifier | |
| IARC: International Agency for Research on Cancer | |

** Changes with regards to the previous version

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.