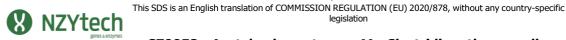
Safety data sheet legislation



CZ0052 - Acetyl xylan esterase 4A, Clostridium thermocellum

Date of	compilation: 23/06/202	0 Revised: 12/10/2023 Version: 2 (Replaced 1)
	• • •	TION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING
1.1		CZ0052 - Acetyl xylan esterase 4A, <i>Clostridium thermocellum</i>
		Glycerol
	CAS:	56-81-5
	EC:	200-289-5
	Index:	Non-applicable
	REACH:	01-2119471987-18-XXXX
	Other means of ide	entification:
	Non-applicable	
1.2		uses of the substance or mixture and uses advised against:
	Relevant uses: Labor	atory. For professional users only.
	Uses advised against	: All uses not specified in this section or in section 7.3
1.3	Details of the supp	lier of the safety data sheet:
	NZYTech Estrada do Paco do L 1649-038 Lisboa - Lis info@nzytech.com www.nzytech.com	umiar Campus do Lumiar - Edif. E, r/c sboa - Portugal
1.4	,	one number: Contact Local Poison Information Center or Local Emergency Number
SECT	FION 2: HAZARDS I	DENTIFICATION **
2.1	Classification of th	e substance or mixture:
	CLP Regulation (E	C) No 1272/2008:
	Classification of this	product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.

Eye Irrit. 2: Eye irritation, 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

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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 - <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 Acute toxicity		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 eve 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:

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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

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---AA Clastridium tharmacallu ----

	compilation: 23/06/2020	Revised: 12/10/202	23 VE	ersion: 2 (Replace	d 1)					
SECT	TION 7: HANDLING AND	STORAGE (continue	ed)							
	Product is non-flammat to avoid the generation conditions and material	of electrostatic charges that should be avoid	es that can a led.	ffect flammable p						
	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 condit equipment, especially c drink during the proces	ions (emergency show n the hands and face (s, washing hands afte	vers and eyev See section 8 rwards with s	wash stations in o). Limit manual tr	close proximity), ransfers to small	using persona	l protection			
	D Technical recommendat						2)			
7 2	It is recommended to ha				the product (Se	e subsection 6.	3)			
7.2	Conditions for safe stora		compatibiliti	ies:						
	A Technical measures for	storage								
	Store in a cool, dry, wel	l-ventilated location								
	B General conditions for	storage								
	Avoid sources of heat, r	adiation, static electric	ity and contac	ct with food. For a	additional inform	ation see subse	ection 10.5			
7.3	Specific end use(s):									
	Except for the instructions a product.	already specified it is n	ot necessary	to provide any sp	ecial recommen	dation regardin	g the uses of this			
	TON 8: EXPOSURE CONT Control parameters: Substances whose occupat				kplace (Europea	n OEL, not cour	ntry-specific			
	Control parameters:	ional exposure limits ha	ave to be mor	nitored in the wor	ed in the product	:				
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers):	ional exposure limits ha	ave to be mor	hitored in the wor bstances containe Short	ed in the product	Lon	ig exposure			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica	ional exposure limits ha	ave to be mor hits for the sul	nitored in the wor ostances containe Short Systemic	ed in the product exposure Local	Lon	ig exposure			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole	ional exposure limits ha	ave to be mor its for the sub Oral	nitored in the wor bstances containe Short Systemic Non-applicable	ed in the product exposure Local Non-applicable	Lon Systemic Non-applicable	g exposure Local Non-applicable			
SECT 8.1	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4	ional exposure limits ha	ave to be mor its for the sub Oral Dermal	hitored in the wor bstances containe Short Systemic Non-applicable Non-applicable	ed in the product exposure Local Non-applicable Non-applicable	Lon Systemic Non-applicable 1,5 mg/kg	g exposure Local Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole	ional exposure limits ha	ave to be mor its for the sub Oral	nitored in the wor bstances containe Short Systemic Non-applicable	ed in the product exposure Local Non-applicable	Lon Systemic Non-applicable	g exposure Local Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2	ional exposure limits ha	ave to be mor its for the sub Oral Dermal	hitored in the wor bstances containe Short Systemic Non-applicable Non-applicable	ed in the product exposure Local Non-applicable Non-applicable	Lon Systemic Non-applicable 1,5 mg/kg	g exposure Local Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identificat Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population	ional exposure limits ha	ave to be mor its for the sub Oral Dermal	hitored in the wor bstances containe Short Systemic Non-applicable Non-applicable	ed in the product exposure Local Non-applicable Non-applicable	Lon Systemic Non-applicable 1,5 mg/kg	g exposure Local Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population Non-applicable	ional exposure limits ha	ave to be mor its for the sub Oral Dermal	hitored in the wor bstances containe Short Systemic Non-applicable Non-applicable	ed in the product exposure Local Non-applicable Non-applicable	Lon Systemic Non-applicable 1,5 mg/kg	g exposure Local Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population Non-applicable PNEC:	ional exposure limits ha	ave to be mor its for the sub Oral Dermal	hitored in the wor bstances containe Short Systemic Non-applicable Non-applicable	ed in the product exposure Local Non-applicable Non-applicable	Lon Systemic Non-applicable 1,5 mg/kg 10,6 mg/m ³	g exposure Local Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population Non-applicable PNEC: Identifica Imidazole CAS: 288-32-4	ional exposure limits ha	Oral Dermal Inhalation STP Soil	hitored in the wor bstances containe Short Non-applicable Non-applicable Non-applicable 10 mg/L 0,043 mg/kg	ed in the product exposure Local Non-applicable Non-applicable Fresh water Marine water	Lon Systemic Non-applicable 1,5 mg/kg 10,6 mg/m ³	g exposure Local Non-applicable Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population Non-applicable PNEC: Identifica Imidazole	ional exposure limits ha	Oral Oral Dermal Inhalation STP Soil Intermittent	hitored in the wor bostances containe Short Non-applicable Non-applicable Non-applicable 10 mg/L 0,043 mg/kg 1,3 mg/L	ed in the product exposure Local Non-applicable Non-applicable Non-applicable Fresh water Marine water Sediment (Fresh	Lon Systemic Non-applicable 1,5 mg/kg 10,6 mg/m ³	g exposure Local Non-applicable Non-applicable Non-applicable 0,13 mg/L 0,013 mg/L 0,336 mg/kg			
3.1	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population Non-applicable PNEC: Identifica Imidazole CAS: 288-32-4 EC: 206-019-2	ional exposure limits ha	Oral Dermal Inhalation STP Soil	hitored in the wor bstances containe Short Non-applicable Non-applicable Non-applicable 10 mg/L 0,043 mg/kg	ed in the product exposure Local Non-applicable Non-applicable Fresh water Marine water	Lon Systemic Non-applicable 1,5 mg/kg 10,6 mg/m ³	g exposure Local Non-applicable Non-applicable Non-applicable			
	Control parameters: Substances whose occupat legislation): There are no applicable occ DNEL (Workers): Identifica Imidazole CAS: 288-32-4 EC: 206-019-2 DNEL (General population Non-applicable PNEC: Identifica Imidazole CAS: 288-32-4	ional exposure limits ha	Oral Dermal Inhalation STP Soil Intermittent Oral	hitored in the wor bstances containe Short Non-applicable Non-applicable Non-applicable 10 mg/L 0,043 mg/kg 1,3 mg/L Non-applicable	ed in the product exposure Local Non-applicable Non-applicable Non-applicable Fresh water Marine water Sediment (Fresh	Lon Systemic Non-applicable 1,5 mg/kg 10,6 mg/m ³	g exposure Local Non-applicable Non-applicable Non-applicable 0,13 mg/L 0,013 mg/L 0,336 mg/kg			

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8 NZYtech

CZ0052 - Acetyl xylan esterase 4A, Clostridium thermocellum

TION	8: EXPOSURE	CONTROLS/PERSON/	AL PROTECTIO	ON (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 protectio	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)		EN ISO 21420:2020	Repl	lace the gloves at any sign of deterioration
D	Eye and face prot	ection	I			
	Pictogram	PPE	Labelling	CEN Standard		Remarks
	Mandatory face protection	Face shield		EN 166:2002 EN 167:2002 EN 168:2002 EN ISO 4007:2018		n daily and disinfect periodically according nanufacturer 's instructions. Use if there is risk of splashing.
E	Body protection					
	Pictogram	PPE	Labelling	CEN Standard		Remarks
	Mandatory complete body protection	Disposable clothing for protection against chemical risks		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		EN ISO 20345:2011 EN 13832-1:2019	R	eplace boots at any sign of deterioration.
F	Additional emerge	ency measures				
	Emergency me	asure S	Standards	Emergency measure	ure	Standards
	Emergency sho	ISO 3864-1:2	ISI Z358-1 011, ISO 3864-4:20	11 Eyewash station	IS	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011
In a spi	vironmental exp	osure controls: ne community legislation product and its contained			s recon	l nmended to avoid environmental .D
Wit	-	ive 2010/75/EU, this pro		owing characteristics:		
	V.O.C. (Supply):		weight			
	V.O.C. density at	-	/m³ (0 g/L)			
	Average carbon r	number: Non-	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.

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CZ0052 - Acetyl xylan esterase 4A, Clostridium thermocellum

Date of	compilation: 23/06/2020 Revised: 12/10/2023	Version: 2 (Replaced 1)
SECT	FION 9: PHYSICAL AND CHEMICAL PROPERTIES	G (continued)
	For complete information see the product datasheet.	
	Appearance:	
	Physical state at 20 ºC:	Liquid
	Appearance:	Not available
	Colour:	Colourless
	Odour:	Odourless
	Odour threshold:	Non-applicable *
	Volatility:	
	Boiling point at atmospheric pressure:	Non-applicable *
	Vapour pressure at 20 °C:	Non-applicable *
	Vapour pressure at 50 °C:	Non-applicable *
	Evaporation rate at 20 °C:	Non-applicable *
	Product description:	
	Density at 20 °C:	1110,8 kg/m ³
	Relative density at 20 °C:	1,111
	Dynamic viscosity at 20 °C:	Non-applicable *
	Kinematic viscosity at 20 °C:	Non-applicable *
	Kinematic viscosity at 40 °C:	Non-applicable *
	Concentration:	Non-applicable *
	pH:	7,2
	Vapour density at 20 °C:	Non-applicable *
	Partition coefficient n-octanol/water 20 °C:	Non-applicable *
	Solubility in water at 20 °C:	Non-applicable *
	Solubility properties:	Non-applicable *
	Decomposition temperature:	Non-applicable *
	Melting point/freezing point:	Non-applicable *
	Flammability: Flash Point:	Non Flammable (>60 °C)
	Flammability (solid, gas):	Non-applicable *
	Autoignition temperature:	480 °C
	Lower flammability limit:	Non-applicable *
	Upper flammability limit:	Non-applicable *
	Particle characteristics:	
	Median equivalent diameter:	Non-applicable
9.2	Other information:	
	Information with regard to physical hazard class	ses:
	Explosive properties:	Non-applicable *
	Oxidising properties:	Non-applicable *
	Corrosive to metals:	Non-applicable *
	Heat of combustion:	Non-applicable *
	Aerosols-total percentage (by mass) of flammable components: Other safety characteristics:	Non-applicable *
	Surface tension at 20 °C:	Non-applicable *
	*Not relevant due to the nature of the product, not providing infor	

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ate of c	compilation: 23/06/2020	Revised: 12/10/2023	Version: 2 (Replac	ed 1)	
SECT	Ton 9: Physical and (CHEMICAL PROPERTIE	ES (continued)		
	Refraction index:		Non-applicable *		
	*Not relevant due to the nature of	of the product, not providing info	ormation property of its hazards.		
SECT	TON 10: STABILITY AND	D REACTIVITY			
10.1	Reactivity:				
10.2	No hazardous reactions are Safety Data Sheet. Chemical stability:	e expected because the pr	oduct is stable under recon	nmended storage condit	ions. See section 7 from
	Chemically stable under the	e indicated conditions of s	torage, handling and use.		
10.3	Possibility of hazardous	reactions:			
	Under the specified condition	ons, hazardous reactions t	hat lead to excessive temp	eratures or pressure are	not expected.
10.4	Conditions to avoid:				-
	Applicable for handling and	l storage at room tempera	iture:		
	Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	T	1			
10.5	Incompatible materials:				
10.5	Acids	Water	Oxidising materials	Combustible materials	Others

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.

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	compilation: 23/06/2020 Revised: 12/10/2023 Version: 2 (R	eplaced 1)						
SECT	ION 11: TOXICOLOGICAL INFORMATION (continued)							
	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:							
	 Specific target organ toxicity (STOT)-repeated exposure: Based on it does not contain substances classified as hazardous for this effect. Skin: Based on available data, the classification criteria are not met hazardous for this effect. For more information see section 3. H- Aspiration hazard: 	For more information	tion see section 3.					
	Based on available data, the classification criteria are not met, as it do this effect. For more information see section 3. Other information:	es not contain sub	stances classified as ha	zardous for				
	Non-applicable							
	Specific toxicology information on the substances:	1						
	Identification	Ac	ute toxicity	Genus				
	Imidazole	LD50 oral	500 mg/kg (ATEi)					
	CAS: 288-32-4	LD50 dermal	>2000 mg/kg					
	EC: 206-019-2 Information on other hazards:	LC50 inhalation	>5 mg/L					
	Endocrine disrupting properties Endocrine-disrupting properties: The product does not meet the criteria. Other information							
SECT	Other information Non-applicable							
	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION							
The ex Based For me	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pro- on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity:			• this effect.				
The ex Based For mo 12.1	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pro on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity: Not available			this effect.				
The ex Based For mo 12.1	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pro- on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity: Not available Persistence and degradability:			• this effect.				
The ex Based For ma 12.1 12.2	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pro on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity: Not available Persistence and degradability: Not available			this effect.				
The ex Based For mo 12.1 12.2	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pro- on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity: Not available Persistence and degradability: Not available Bioaccumulative potential:			this effect.				
The ex Based For ma 12.1 12.2 12.3	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pro- on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity: Not available Persistence and degradability: Not available Bioaccumulative potential: Not available			• this effect.				
The ex Based For ma 12.1 12.2 12.3	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pre- on available data, the classification criteria are not met, as it does not cont ore information see section 3. Toxicity: Not available Persistence and degradability: Not available Bioaccumulative potential: Not available Mobility in soil:			this effect.				
The ex Based For ma 12.1 12.2 12.3 12.4	Other information Non-applicable ION 12: ECOLOGICAL INFORMATION experimental information related to the eco-toxicological properties of the pre- on available data, the classification criteria are not met, as it does not conte ore information see section 3. Toxicity: Not available Persistence and degradability: Not available Bioaccumulative potential: Not available Mobility in soil: Not available			• this effect.				
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Revised: 12/10/2023

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

legislation

CZ0052 - Acetyl xylan esterase 4A, 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	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: Physico-Chemical properties:	Non-applicable see section 9
	Limited quantities:	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:	Non-applicable
	UN proper shipping name:	Non-applicable
1/1 2	Transport hazard class(es):	Non-applicable
14.5		••
	Labels:	Non-applicable
14.4	Labels: Packing group:	Non-applicable Non-applicable
14.4 14.5	Labels: Packing group: Marine pollutant:	Non-applicable
14.4	Labels: Packing group: Marine pollutant: Special precautions for user	Non-applicable Non-applicable No
14.4 14.5	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations:	Non-applicable Non-applicable
14.4 14.5	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations: EmS Codes:	Non-applicable Non-applicable No Non-applicable
14.4 14.5	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations: EmS Codes: Physico-Chemical properties:	Non-applicable Non-applicable No Non-applicable see section 9
14.4 14.5	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations: EmS Codes: Physico-Chemical properties: Limited quantities:	Non-applicable Non-applicable No Non-applicable see section 9 Non-applicable
14.4 14.5 14.6	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations: EmS Codes: Physico-Chemical properties: Limited quantities: Segregation group:	Non-applicable Non-applicable No Non-applicable see section 9 Non-applicable Non-applicable
14.4 14.5	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations: EmS Codes: Physico-Chemical properties: Limited quantities:	Non-applicable Non-applicable No Non-applicable see section 9 Non-applicable
14.4 14.5 14.6 14.7	Labels: Packing group: Marine pollutant: Special precautions for user Special regulations: EmS Codes: Physico-Chemical properties: Limited quantities: Segregation group: Maritime transport in bulk according to IMO	Non-applicable Non-applicable No Non-applicable see section 9 Non-applicable Non-applicable

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



CZ0052 - Acetyl xylan esterase 4A, Clostridium thermocellum

Date of compilation:	23/06/2020 Revised: 12/	10/2023	Version: 2 (Replaced 1)
SECTION 14: T	RANSPORT INFORMATION (continued)	
With rega	ard to IATA/ICAO 2023:		
14.1	UN number or ID number:	Non-applicable	
14.2	UN proper shipping name:	Non-applicable	
14.3	Transport hazard class(es):	Non-applicable	
	Labels:	Non-applicable	
14.4	Packing group:	Non-applicable	
14.5	Environmental hazards:	No	
14.6	Special precautions for user		
	Physico-Chemical properties:	see section 9	
14.7	Maritime transport in bulk according to IMO instruments:	Non-applicable	

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

This SDS is an English translation of COMMISSION REGULATION (EU) 2020/878, without any country-specific legislation **8** NZYtech

CZ0052 - Acetyl xylan esterase 4A, Clostridium thermocellum

Date of compilation: 23/06/2020 Revised: 12/10/2023 Version: 2 (Replaced 1)	
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. 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 a interpretation of this safety data sheet, as well as the label on the product.	nd
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.