

**1. Product Identification.**

Product name: Maxiren 180 and Maxiren 600.  
 Chemical name: Chymosin  
 Synonyms: Rennin; Rennet; Liquid enzyme (enzyme protein)  
 Substance/preparation: This product is a preparation.  
 Use of the substance/preparation: This product is an enzyme and is used as a processing aid or additive in the food/feed industry.

**2. Composition/ Information on Ingredients.**

<u>Chemical name</u>	<u>CAS No.</u>	<u>EC No./EC index-No.</u>	<u>Class.</u>	<u>R-phrases</u>	<u>%</u>	<u>IUB No.</u>
Chymosin	9001-98-3	232-645-0/647-009-00-1	Xn	36/37/38-42	1-10	3.4.23.4

For the complete text of the R-phrases, see chapter 16. Occupational Exposure Limit(s), if available, are listed in section 8.

**3. Hazards Identification.**

Labelling: Harmful.  
 Risk phrases: R 42 may cause sensitisation by inhalation.  
 Physical/chemical hazards: The data available do not support any physical or chemical hazard.  
 Environmental hazards: The data available do not support any environmental hazard.  
 Human health hazards: Repeated inhalation of enzyme aerosol, resulting from improper handling, may induce sensitisation and may cause allergic type reactions in sensitisation individuals.  
 Symptoms of overexposure: See section 4.

**4. First Aid Measures.**

Inhalation:  
 Effects: May cause sensitisation. Symptoms may occur after a latency period has elapsed.  
 Symptoms: Shortness of breath, wheezing and laboured coughing.  
 First aid: Remove victim from area of exposure. If symptoms of irritation or sensitisation occur, consult a doctor.



**Skin:**

Effects: May be irritating.  
Symptoms: Redness.  
First aid: Remove contaminated clothing. Wash off affected skin with plenty of water. Consult a doctor in event of any complaints.

**Eyes:**

Effects: May be irritating.  
Symptoms: Redness.  
First aid: Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Consult a doctor in event of any complaints.

**Ingestion:**

Effects: May be irritating.  
Symptoms: No specific symptoms are known.  
First aid: Rinse mouth and throat thoroughly with water. Consult a doctor in event of any complaints.

**5. Fire Fighting Measures.**

Extinguishing measures: Suitable: Water, foam, halones.  
Unsuitable: None.  
Thermal decomposition products: None.  
Protective equipment: Self-contained breathing apparatus.  
Specific hazards: Inhalation of aerosol may result in sensitisation. Avoid any contact with the substance.

**6. Accidental Release Measures.**

Personal precautions: Use appropriate personal protection (see section 8). Avoid any contact with the liquid. Ventilate areas.  
Environmental precautions: Do not allow to enter natural waters or soil.  
Methods for cleaning up: Use appropriate personal protection (see section 8). Avoid any contact with the liquid. After spillage avoid raising aerosols or dust from dried preparation. Avoid splashing and high pressure washing (formation of aerosols). Dike spilled liquid. Take up spilled substance by mechanical means or with a vacuum cleaner equipped with a high efficiency filter. Wash away remainder with plenty of water. Ventilate areas. Remove and wash contaminated clothing before re-use.

See section 8 and 13.



## 7. Handling and Storage.

Handling:	Use appropriate personal protection (see section 8). Avoid any contact with the liquid. Avoid the formation of aerosols and dust from dry product. Ventilate areas.
Storage:	Keep in a cool, dry place.
Packaging materials:	Polyethylene High Density (PEHD) containers, drums or jerrycans.
Specific use(s):	See section 1: Use of the substance/preparation.

## 8. Exposure Controls/ Personal Protection.

Avoid exposure first of all by technical and/or organizational measures.

Occupational exposure limits:	MAC value: No occupational exposure limits are known. Other exposure limits: Unknown.
Respiratory protection:	Wear a suitable respiratory protection in case of aerosol formation.
Hand protection:	Practical experience has shown that gloves of polychloropropene (neoprene), nitrile rubber, butyl rubber, fluor rubber (viton) and polyvinyl chloride (PVC) offer sufficient protection.
Breakthrough:	Replace damaged gloves.
Eye protection:	Safety goggles or face shield.
Skin protection:	Protective clothing.
Environmental exposure controls:	Avoid dispersion to the environment.

## 9. Physical and Chemical Properties.

Appearance:	Liquid.
Colour:	Brown – dark brown.
Odour:	Slight fermentation odour.
pH:	5.3 – 5.5
Solubility in water:	Soluble.

## 10. Stability and Reactivity.

General:	Stable under storage conditions (see section 7).
Conditions to avoid:	None.
Materials to avoid:	None.



Hazardous decomposition products: None.

## 11. Toxicological Information.

Irritation:	Eyes:	100% Chymosin: irritating.
	Skin:	100% Chymosin: irritating.
	Respiratory system:	100% Chymosin: irritating.
Acute toxicity:	Oral:	LD <sub>50</sub> rat: > 2000 mg/kg.
	Dermal:	Information not available.
	Inhalation:	Information not available.
Chronic toxicity:	Oral:	Information not available.
	Dermal:	Information not available.
	Inhalation:	Information not available.
Other information:	Inhalation:	Repeated inhalation of enzyme aerosol, resulting from reactions in sensitised individuals. Prolonged or repeated skin contact may be irritating.
	Oral:	Not toxic.
Carcinogenicity:		Information not available.
Mutagenicity:		Not mutagenic.
Reproduction toxicity:		Information not available.

## 12. Ecological Information.

Ecotoxicity:	The preparation is believed not to be dangerous to the environment with respect to mobility, persistence and degradability, bio-accumulative potential, aquatic toxicity and other data relating to ecotoxicity.
Persistence / degradability:	The substance is readily biodegradable.
Bioaccumulative potential:	Bioaccumulation in aquatic organisms is not expected.
Other adverse effects:	Not applicable.

## 13. Disposal Considerations.

Please check the consequences of national regulations on this product yourself.



Methods of disposal: No special disposal methods required, except that it has to be in accordance with current authority regulations.

Contaminated packaging: Contaminated packaging must be disposed of in a safe way.

#### 14. Transport Information.

Proper shipping name: Not dangerous according to transport regulations.  
National transport regulations: No additional national transport regulations are known to the supplier.

#### 15. Regulatory Information.

Please check the consequences of national regulations on this product yourself.

Labelling according to Directive 67/548/EC.

Contains: Chymosin (liquid enzyme)

This product is dangerous according to the EC regulations: 67/548/EEC Annex 1.

This product is dangerous within the meaning of Directive: 88/379/EEC.

Symbol: Xn – harmful.

Risk phrases: R 42 May cause sensitisation by inhalation.

Safety phrases: S 23 Do not breathe spray.  
S 24 Avoid contact with skin.  
S 36/37 Wear suitable protective clothing and gloves.  
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### 16. Other Information.

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