

SpiceIT™ AL

Product Information

Version: 3 PI-GLOB-EN 08-21-2014

Description

SpiceIT™ AL is a lipase originating from the epiglottis of freshly slaughtered lambs which catalyzes the breakdown of fat, resulting in the formation of free fatty acids. Free fatty acids contribute to improved flavor of various cheese types. Animal lipases result in the formation of shorter chain fatty acids which contribute to a piquant flavor characteristic of unpasteurized cheese.

Material No: 712151

Size 1 kg

Type Bucket

Storage temp: < 10 °C / < 50 °F

Conditions: Dry, Cool. Keep closed in the original container.

Shelf life

12 months from quality release when stored according to the recommended storage conditions. The shelf life is limited to 3 months after opening, provided the product is maintained according to the recommended storage conditions.

Transport

The product may be transported at ambient temperature.

Application

SpiceIT™ AL can be used for improving the flavor profile of various cheese types including Italian, Italian-style and Feta cheese. Desired flavor profiles are highly subjective and vary according to individual. As a result, selection and dosage of lipases should be adjusted for each market. It is advised to adjust dosage levels according to desired flavor profiles.

Dosage

1-3 LFU /L

The correct dosage of lipases depends on the following factors: cheese type, cheese dry-matter, temperature and pH. Factors may vary according to country, dairy and day. Therefore, exact dosage should be optimized to local conditions.

The following dosage rates are guidelines provided for trial purposes.

Cheese Type	Animal Lipases
Feta	0.8 - 1.7 LFU /L
Pecorino/Pepato	1.7 - 2.9 LFU /L
Parmesan	1.7 - 2.9 LFU /L
Romano	1.7 - 2.9 LFU /L

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Directions for use

It is recommended to reconstitute 1 part of lipase in 10-50 parts of clean cold water, free of chlorine, prior to use. The dilution should preferably take place in a stainless steel container as some plastic materials have a negative effect on the enzyme activity. Heat the milk to the desired temperature. The diluted lipase should be added immediately to the milk, prior to the coagulant and possibly together with the cultures, while stirring for 2-3 minutes to distribute the lipase properly.

Composition

Sodium chloride , Maltodextrin, Animal lipase

Specification

Properties

Average activity:	80 LFU/g	Guaranteed activity	$\geq 74,00$ LFU/g
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Guaranteed activity is the minimum activity at best-before date.

Content

Enzyme type:	Lamb Lipase
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Physical Properties

Color:	Creamy to light brown	Form:	Powder
Solubility:	Water soluble	Odor:	Characteristic

The product may exhibit batch-to-batch color variations. This has no influence on the activity.

Microbiological quality

Total count:	< 5.000 cfu/g	Yeast:	< 100 cfu/g
Mold:	< 100 cfu/g	Coliform bacteria:	Negative in 5 g
Salmonella:	Negative in 20 g	Listeria:	Negative in 20 g
Staphylococcus aureus:	Negative in 2,5 g		

Comments

Methods are available on request.

This product complies with the recommended purity specifications for food-grade enzymes given by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the Food Chemical Codex (FCC) with heavy metal specifications for Lead (≤ 5 ppm), Cadmium ($\leq 0,5$ ppm), Mercury ($\leq 0,5$ ppm) and Arsenic (≤ 3 ppm).

Certificate of Analysis

A Certificate of Analysis (CoA) will normally accompany the goods.

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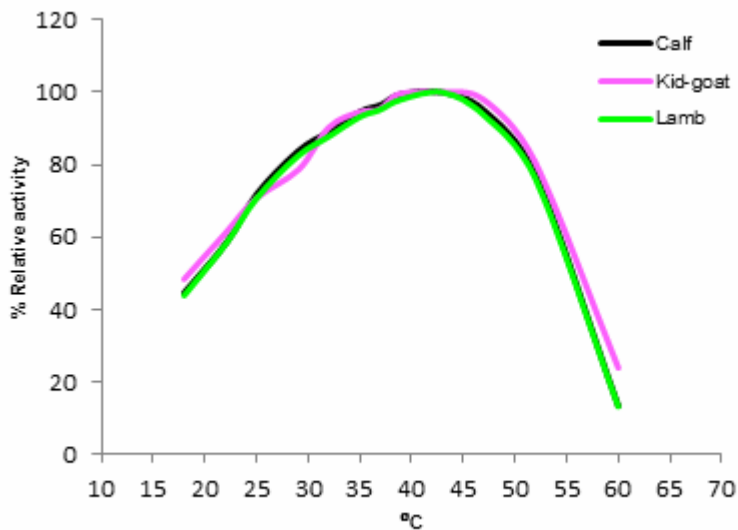
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Technical Data

Temperature

The relative activity of different lipases depends on the temperature. For this product, the temperature optimum is between 35-45°C.

Influence of temperature on animal lipase activity.



pH

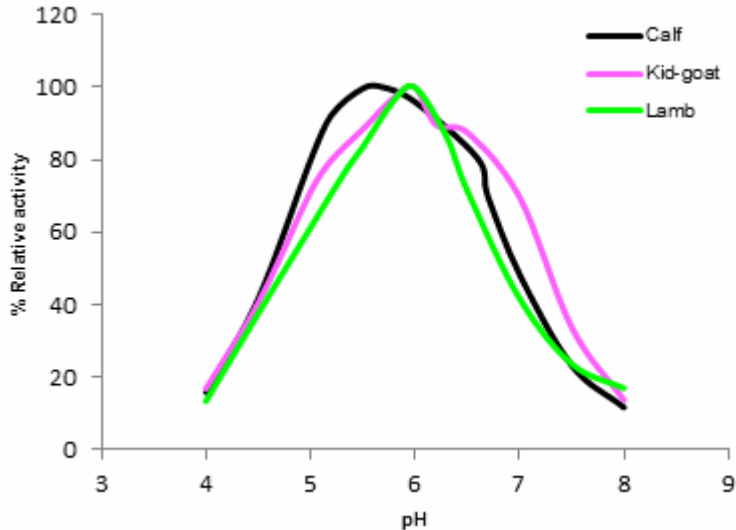
The activity of lipases is pH dependent with pH optimum between 5.5-6.2.

Influence of pH on animal lipase activity.

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Stability

The product will comply with the specifications for a minimum of 12 months when handled as recommended.

Technical support

Chr. Hansen's Application and Product Development Laboratories and personnel are available if you need further information.

Dietary Information

Kosher:	Non kosher
Halal:	In progress
Vegetarian:	No

Handling precautions

For detailed handling information, please refer to the appropriate Safety Data Sheet. Enzymes may cause irritation upon inhalation or skin contact among sensitive individuals. The use of personal protection equipments such as gloves, goggles and respiratory equipment can prevent sensitisation. For additional guidelines refer to 'Guide to the safe handling of microbial enzymes preparations' published by the Association of Manufacturers and Formulators of Enzyme Products (AMFEP) and 'Working Safely With Enzymes' by the Enzyme Technical Association (ETA).

According to EU legislation, disposal of packaging material of this product should be treated as hazardous waste.

Alternatively, or for non EU countries, packaging may be disposed of as normal waste by rinsing with plenty of water to ensure no enzyme residues are present.

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Legislation

This product complies with JECFA- (FAO/WHO) and FCC-recommended specifications for food-grade enzymes. The application of enzymes in food processing is governed by general food laws and by Reg. (EC) No 1332/2008. However, the approval system provided by Reg. 1332/2008 is not yet fully operational. Chr. Hansen A/S will ensure EU approval in due time. Meanwhile, please check for local/national rules or regulations as national requirements may apply.

The product is intended for use in food.

Labeling

The product is a processing aid. There are no legislative requirements for labelling processing aids on final food products.

Trademarks

Product names, names of concepts, logos, brands and other trademarks referred to in this document, whether or not appearing in large print, bold or with the ® or TM symbol are the property of Chr. Hansen A/S or used under license. Trademarks appearing in this document may not be registered in your country, even if they are marked with an ®.

GMO Information

In accordance with the legislation in the European Union* we can state that SpiceIT™ AL does not contain GMOs and does not contain GM labeled raw materials**. In accordance with European legislation on labeling of final food products** we can inform that the use of SpiceIT™ AL does not trigger a GM labeling of the final food product. Chr. Hansen's position on GMO can be found on: www.chr-hansen.com/About us/Policies and positions/Quality and product safety.

* Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC.

** Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed.

Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC.

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Allergen Information

List of common allergens in accordance with the US Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA) and EU labeling Directive 2000/13/EC with later amendments	Present as an ingredient in the product
Cereals containing gluten* and products thereof	No
Crustaceans and products thereof	No
Eggs and products thereof	No
Fish and products thereof	No
Peanuts and products thereof	No
Soybeans and products thereof	No
Milk and products thereof (including lactose)	No
Nuts* and products thereof	No
List of allergens in accordance with EU labeling Directive 2000/13/EC only	
Celery and products thereof	No
Mustard and products thereof	No
Sesame seeds and products thereof	No
Lupine and products thereof	No
Mollusks and products thereof	No
Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/litre expressed as SO ₂	No

* Please consult the EU Labeling Directive 2000/13 Annex IIIa for a legal definition of common allergens, see European Union law at: www.eur-lex.europa.eu