

# Galacin™

## Nisin and Natamycin



### FOOD SAFETY – SHELF LIFE EXTENSION

We guarantee shelf life extension and targeted pathogen elimination through natural and healthy solutions. Nisin and natamycin, which are powerful natural preservatives, specifically protect against spoilage bacteria, yeasts and moulds.



## Introduction

**Galacin™** is Galactic's brand name for special antimicrobials which are healthy and environmentally friendly. These products are primarily designed to protect food against both Gram-positive (*Listeria*) and some Gram-negative (*Salmonella*) bacteria in addition to yeasts and moulds.

These solutions are interesting for the meat (cured sausages, turkey ham, etc.), dairy (processed cheese, hard cheese, etc.), beverage and bakery sectors. The **Galacin™** range essentially consists of various forms of nisin and natamycin.



## Galacin™ Nisin

Nisin is a natural antimicrobial peptide obtained through the controlled fermentation of *Lactococcus lactis*, a bacterium also used as a ferment in many dairy products. It is extensively used to protect a wide range of food products against spoilage bacteria.

The usual dosage to effectively prevent the growth of most bacteria (mainly Gram-positive) ranges between 5 and 10 ppm of pure nisin (between 200 and 400 ppm of **Galacin™ Nisin 101**).



## Galacin™ Natamycin

Natamycin is a natural antifungal product obtained through the fermentation of *Streptomyces natalensis*. It plays the role of food additive to control the growth of yeasts and moulds primarily on the surface of cheese, meat and sausages.

The minimum inhibitory concentration (MIC) for most species of moulds and yeasts ranges between 10 and 25 ppm of pure natamycin. Natamycin is usually used at less than 1 mg per dm<sup>2</sup> of treated surface (2 mg/dm<sup>2</sup> of **Galacin™ Natamycin 201 – 206** or 25 mg/dm<sup>2</sup> of **Galacin™ Natamycin 208**).

### Benefits

- Very effective protection against bacteria, yeasts and moulds
- Very effective against targeted microorganisms
- Used in a wide range of applications
- Safe and easy to use

## Applications

The choice between nisin and natamycin is made according to the application and the process. The authorized dosage in these applications depends on the country.

Sector	Nisin	Natamycin
Dairy	<ul style="list-style-type: none"> <li>Ripened, clotted, processed, mascarpone (EU), pasteurised (US) cheese</li> <li>Milk (CN)</li> <li>Dairy products (CN)</li> </ul>	<ul style="list-style-type: none"> <li>Cheese (EU, US, CN)</li> </ul>
Meat	<ul style="list-style-type: none"> <li>Cooked (US), pre-processed, heat-treated (CN) meat and poultry, RTE meat and poultry products containing sauces (US)</li> </ul>	<ul style="list-style-type: none"> <li>Dried and cured (EU) sausages</li> <li>Smoked, baked, grilled, fried, fermented (CN) meat</li> <li>Ham (CN)</li> </ul>
Other (non-exhaustive list)	<ul style="list-style-type: none"> <li>Semolina (EU)</li> <li>Pudding (EU)</li> <li>Pasteurised liquid eggs (EU)</li> <li>Egg products (US)</li> <li>Canned fungi and seaweed (CN)</li> <li>Grain products (CN)</li> <li>Beverages (CN)</li> <li>Vinegar (CN)</li> </ul>	<ul style="list-style-type: none"> <li>Pastries (CN)</li> <li>Mayonnaise and salad dressing (CN)</li> <li>Fermented alcoholic beverages (CN)</li> <li>Fruit and vegetable juices (CN)</li> <li>Bean paste, wheat paste (CN)</li> <li>Broiler feed chicken (US)</li> </ul>

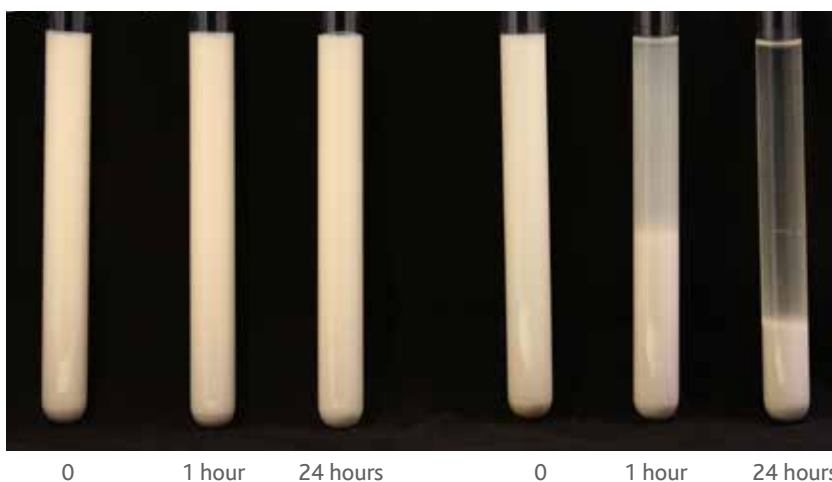
## The Galacin™ range

Product	Concentration	Diluent	Main function
Galacin™ Nisin 101	2.5% (powder)	NaCl	Antimicrobial effect (Gram-positive bacteria)
Galacin™ Natamycin 201	50% (powder)	NaCl	Antifungal effect (yeasts and moulds)
Galacin™ Natamycin 202	50% (powder)	Lactose	Antifungal effect (yeasts and moulds)
Galacin™ Natamycin 203	50% (powder)	Dextrose	Antifungal effect (yeasts and moulds)
Galacin™ Natamycin 208	4% (liquid suspension)	NaCl, water	Antifungal effect (yeasts and moulds)

Natamycin is known for its very low solubility. Most suspensions are not stable and the product settles in a few hours to the bottom of the dilution vessels and pipes, which eventually clogs spraying systems.

4% **Galacin™ Natamycin 208**

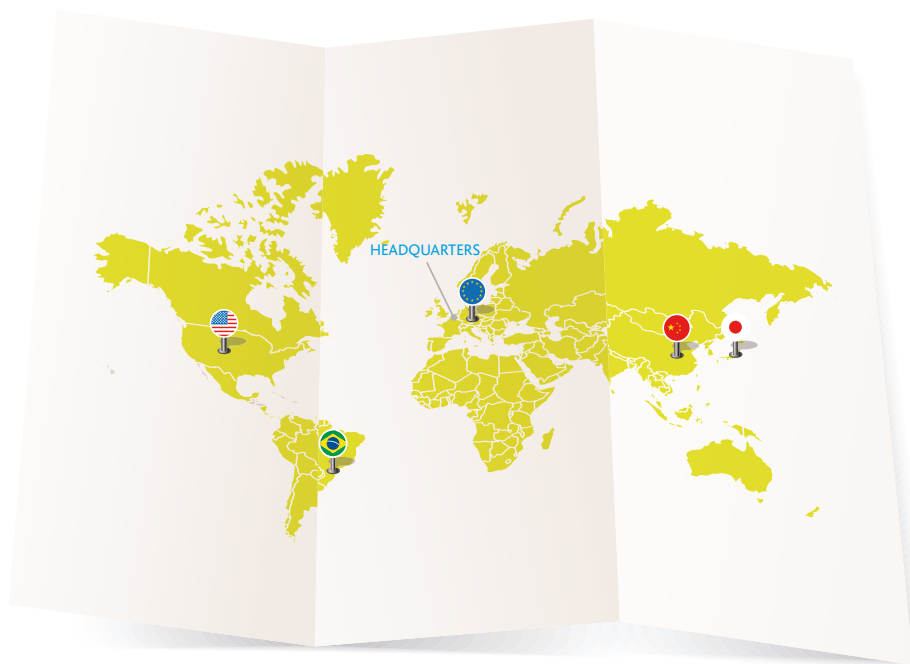
4% traditional natamycin



**Galacin™ Natamycin 208** has been specifically designed to avoid settling and to be stable for several days in suspension.

**Galacin™ Natamycin 208** is sold as a concentrated suspension in liquid form. It is easy to handle and to dilute with clear water to the concentration required for its application.

Since 1994 Galactic has become one of the world leaders in biotechnology serving the food, feed, personal & health care, and industrial markets. Based on its valuable experience in the fermentation of lactic acid and in the production of its derivatives, Galactic continuously develops sustainable, innovative and health-friendly solutions in the field of food safety, nutrition and green chemistry. With its headquarters and an Innovation Campus in Belgium, production facilities and front-labs in the United States (Milwaukee), China (Bengbu) and Europe (Escanaffles, Brussels), and additional sales offices in Germany (Düsseldorf), Italy (Milan), Japan (Tokyo) and Brazil (Curitiba), Galactic employs about 370 people worldwide and is active in more than 65 countries.



#### NORTH AMERICA

Galactic Inc.  
2700 W. Silver Spring Drive  
Milwaukee - WI 53209 USA  
Tel.: +1 414 462 1990  
galactic-us@lactic.com  
www.lactic-us.com

#### LATIN AMERICA

Galactic Bioquímicos Ltda.  
Batel Business Center  
Av. Batel, n° 1230 Cj. 405 - Torre  
BBC  
Curitiba - PR - Brazil  
Tel.: +55-41-3042-7113  
galactic-latam@lactic.com  
www.lactic.com

#### EUROPE & AFRICA

Headquarters & production plant  
Galactic s.a.  
Place d'Escanaffles, 23  
7760 Escanaffles - Belgium  
Tel.: +32 69 45 49 21

Galactic Innovation Campus  
Allée de la Recherche, 4  
1070 Brussels - Belgium  
Tel.: +32 2 332 14 00  
sales@lactic.com

#### ASIA & OCEANIA

Anhui COFCO Biochemical &  
GALACTIC Lactic Acid Co., Ltd.  
1 Cofco Avenue, Bengbu 233010  
Anhui Province - China  
Tel.: +86 552 2081 288  
information@bglactic.com  
www.bglactic.com

#### JAPAN

B&G Japan Co., Ltd.  
AIOS Meguroekimae, 15-19  
Kami-osaki 2-chome, Shinagawa-ku  
Tokyo 141-0021 Japan  
Tel.: +81 3 6459 3646  
japan@bglactic.com  
www.b-gjapan.com