

PRODUCT DESCRIPTION SHEET

Code 0302	File name PDS_0302_NisinZ®	Analyst Dr. Juliana Lane	Date 24/01/2020
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DESCRIPTION				
NisinZ® is a naturally occurring antimicrobial peptide produced by the bacterium <i>Lactococcus lactis</i> from sauerkraut. It is used in processed foods to extend shelf life by decomposing Gram-positive bacteria.	Beans in tomato sauce	<i>Clostridium thermosaccharolyticum</i>	200	
	Canned tomatoes	<i>Bacillus coagulans</i> , <i>Bacillus subtilis mesentericum</i> , <i>Clostridium butyricum</i>	100	
	Canned potatoes	<i>Bacillus subtilis</i> , <i>Clostridium sporogenes</i>	100	
Canned soup (lecso)	Flat sour spoilage bacteria		400	
	Dairy			
	Reduced fat milk	<i>Bacillus</i> spp.	50	
Sterilized whole milk & chocolate milk/milk based beverage	<i>Bacillus stearothermophilus</i> , <i>Mesophilic & thermophilic spoilage organisms</i>		100	
	HTST & reduced heat treated milk	Total plate count, (<i>Lactobacillus</i> spp., and <i>Bacillus</i> spp.)	50-100	
APPLICATIONS				
Food	Targeted bacteria		Dosage (mg/kg)	
Bakery				
Crumpets	<i>Bacillus cereus</i>		150-250	
Beverages				
Fruit juice	<i>Alicyclobacillus acidoterrestris</i>		30-60	
Tomato juice	<i>Bacillus coagulans</i>		200-500	
Beer, wine, fermented beverages, spirits	Lactic acid bacteria (<i>Lactobacillus</i> , <i>Pediococcus</i>)		50-100	
Culinary				
Liquid egg products	<i>Bacillus cereus</i> , <i>Lactobacillus innocua</i> , <i>Listeria monocytogenes</i>		250-500	
Pasteurized soups	<i>Bacillus</i>		100-250	
Dressings and sauces	Lactic acid bacteria, <i>Clostridium</i> , <i>Bacillus</i>		50-200	
Asparagus	<i>Clostridium sporogenes</i>		400	
Okra	<i>Bacillus stearothermophilus</i>		500	
Green peas	Thermophilic spore forming bacteria, <i>Bacillus stearothermophilus</i>		100-250	
Skim milk	<i>Listeria monocytogenes</i>		25-50	
Stirred yogurt	Inhibits yogurt starter culture (e.g. <i>Streptococcus thermophilus</i> , <i>Lactococcus delbrueckii</i> subsp. <i>bulgaricus</i>)		20-50	
Pasteurized double cream	Gram positive spoilage organisms		25-100	
Clotted cream	<i>Bacillus cereus</i>		400	
Ripened cheese	<i>Clostridium tyrobutyricum</i> , <i>Clostridium butyricum</i> , <i>Listeria monocytogenes</i> , <i>Listeria innocua</i>		50-250	
Various processed emmental & cheddar cheeses	<i>Clostridium sporogenes</i> , <i>Clostridium tyrobutyricum</i> , <i>Clostridium butyricum</i>		100-250	
Pasteurized process	<i>Clostridium botulinum</i>		100-500	

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cheese spreads		pH of 1% aqueous solution	2.5-3.5
Processed cheese	Anaerobic spore formers, Total plate count reduction	*Appearance variations may occur from batch to batch.	

Chilled dairy desserts	Spoilage organisms, Heat resistant spore formers such as <i>Bacillus</i> spp. & <i>Clostridium</i> spp.	50-150	NUTRITIONAL DATA
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Meat, Poultry and fishes			Approximate values for Nutrition labelling per 100g.
Fermented sausages	<i>Listeria monocytogenes</i>	50-100	Contribution to energy level is insignificant at recommended usage levels.
Vacuum packaged bologna type sausages	Lactic acid bacterial spoilage organisms	250-500	Energy 80 calories
RTE turkey bologna	<i>Listeria monocytogenes</i>	125	Protein 18.6 g
Meat slurries simulating cooked ham	<i>Clostridium sporogenes</i>	75-100	Carbohydrate 1.5 g
			-Sugar <0.5 g
			Fat <0.1 g
			-Saturated fat <0.1 g
			-Trans. fat <0.1 g
			Total dietary fiber 1.2 g
			Vitamin A <10 µg
			Vitamin C 14 mg
			Ash <77.4 g

DIRECTION FOR USE	In general, to deploy NisinZ® dipping solution with cold boiled water or distilled water, then add directly into foods.
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COMPOSITION	Nisin Z concentration (w/w) ≥2.5%	PACKAGING	NisinZ® is available in 500 gr/bottle with integral, tamper-proof seals. Packaging is available in other quantities.
	Sodium Chloride (w/w) ≥75%		Plastic bottle and pouch materials comply with Regulation (EU) No 10/2011.
	Loss on drying (% w/w) ≤3%	STORAGE CONDITIONS	Conditions: 24 months, store unopened below 20°C in dry conditions, away from direct sunlight and odorous products. When opened, store at approx. 20°C in original container.
	*The exact percentage variations may occur from batch to batch.		Shelf life: Shelf life is 24 months when stored according to recommendations.

HEAVY METALS	Lead (mg/kg) ≤1	COUNTRY OF ORIGIN	Belgium
	Arsenic (mg/kg) ≤1		
	Mercury (mg/kg) ≤1	ALLERGENS	

MICROBIOLOGICAL SPECIFICATIONS	Total aerobic count (/g) ≤10	Components	Yes / No
	<i>E. coli</i> (/25) Absent	● Peanut or its derivatives	No
	<i>Salmonella</i> (/25g) Absent	● Tree nuts, macadamia nuts, pecans, pine nuts, pistachios and walnuts or their derivatives	No

PHYSICAL / CHEMICAL SPECIFICATIONS	Appearance	Light brown to Grey white powder	● Sesame or its derivatives	No
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<ul style="list-style-type: none"> ● Eggs or its derivatives No ● Fish or its derivatives No ● Crustaceans and shellfish or their derivative No ● Soy or its derivatives No ● Wheat, triticale or their derivatives No ● Mustard or its derivatives No ● Milk or its derivatives (e.g. Lactose) No ● Sulphites No 	<p>According to regulations Ec No. 1829/2003 and 1830/2003.</p> <p>Microorganisms used for the production of this product are not genetically modified.</p>		
<p>CERTIFIED- STATUS</p> <p>The product is certified by KOSHER, HALAL and ISO22000:2005.</p>		<p>REGULATIONS</p> <p>NisinZ® has been approved as a food preservative worldwide. Its addition level for commonly consumed foods ranges from 100 to 500 mg/kg (pure base in max.12.5 g/kg).</p>	
<p>GMO- STATUS</p>		<p>The regulations governing the use of NisinZ® vary considerably in the countries in which it is currently approved. Advice regarding the legal status of this product is available as appendix1.</p>	

APPENDIX 1 REGULATORY AND APPROVAL OF NISINZ® IN FOOD APPLICATIONS

Geographic Area	Food categories	Max. Level (mg/g)	dairy products; canned foods	
Algeria	Processed cheese	100	Bolivia	Permitted additive No limit
Argentina	Cheese, processed cheese, requeijao, and ricotta	500	Brazil	Cheese, processed cheese, pasteurized cheese, requeijao, and ricotta 500
Australia / New Zealand	Crumpets, flapjacks, and pikelets (hot plate products)	1000	Bulgaria	Cheese 200 Ice for storing fish No limit
	Cheese, processed cheese, and reduced-fat processed cheese and cheese spreads; processed cheese food; club cheese; blended cheese;	500	Chile	Cheese 500
	canned tomatoes; tomato paste and tomato; puree with pH <4.5; canned soups;		China	Milk and dairy product (excluding products of the category 01.01.01, 01.01.02, 13.0) 0.5 Canned or bottled edible fungi and algae 0.2 Canned coarse grains 0.2 Other coarse grain products (Coarse grain sausage products only) 0.25 Instant wheat or rice products (fresh instant noodles only) 0.25 Instant wheat or rice products (rice and wheat flour sausage products only) 0.25 Pre-processed meat product 0.5
	Beer			
	Processed meat products.	500		
Bahrain	Pasteurized, flavoured, and long-life milks; processed cheese; cheese; other	No limit		

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	Cooked meat products	0.5	process, clotted cream
	Fully preserved fish and fish products (can be directly consumed)	0.5	Hong Kong Canned foods, cheese, clotted cream No limit
	Egg products (changed physical properties)	0.25	Iceland Ripened and processed cheese 500
	Vinegar	0.15	Semolina, tapioca and similar puddings 120
	Soy sauce	0.2	India Processed cheese and cheese 100
	Paste and paste products	0.2	Prepacked Coconut Water 125
	Blended condiment	0.2	Canned rasgolla 200
	Beverages (excluding packaged drinking water in 14.01)	0.2	Paneer 500
Colombia	Cheese	500	Indonesia Cheese preparations 500
Costa Rica	Cheese products	No limit	Israel Cheese (except soft white cheese) No limit
	Heat-treated processed meat, poultry, and game products in whole pieces or cuts	1000	Japan Confectionary ≤ 250
Ecuador	All foods	Not specified	Sauces ≤ 400
Egypt	Processed cheese and processed cheese paste	500	Dressing ≤ 400
Ecuador	All foods	Not specified	Mayonnaise ≤ 400
European Union	Clotted cream	400	Whipped Cream Products ≤ 500
	Ripened and processed cheese	500	Cheese (except Processed Cheese) ≤ 500
	Semolina, tapioca and similar puddings	120	Process Cheese ≤ 250
	Mascarpone	400	Processed egg products ≤ 200
	Processed eggs and egg products	250	Miso ≤ 200
	Heat-treated meat products	1,000	Wet confectionary with starch as the main material ≤ 120
Gibraltar	Canned foods (pH <4.5 or given botulinum process), cheese, clotted cream	No limit	Meat products ≤ 500
Guyana	Canned foods, including canned meat, with pH <4.5, or given botulinum	No limit	Jordan Processed cheese and spreadable processed cheese 500
			Malaysia Canned foods 500
			Cheese 500
			Mauritius Canned food (Canned tomato, Tomato puree) 500
			Semolina and tapioca, Pudding and similar products 120
			Ripened cheese and Processed cheese 500
			Clotted cream 400
			Mexico Permitted additive No limit
			Processed cheese 500
			Montenegro Processed cheese 500

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