



American International Chemical, Inc.

Corporate Offices: (800) 238-0001

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SPECIFICATION SHEET

NISIN

Code No.	SCN No.	CAS No.	Effective Date	Product Manager	Rev. No.	Approved By
NISZCP	3280	1414-45-5	March 6, 2008	SW	No. 5	TJK

CHARACTERISTICS:	Nisin is a natural preservative that is a light brown to off white powder derived from a fermentation process using a yeast powder that is a by-product of the production of beer from the bacteria of <i>Lactococcus lactis</i> subsp. <i>Lactis</i> .
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SPECIFICATIONS:	Identification	To pass test
	Moisture content	3% max
	pH (10% aqueous solution)	3.10-3.60
	Heavy metals	10 ppm max
	Arsenic	1 ppm max
	Sodium Chloride	50% min
	Hydrous potency (assay)	1 x 10 ⁶ IU/g min
	Aerobic bacterial count	10 cfu/g max
	Coliform	30 max (MPN/100g)
	Salmonella in 25g	Absent
	Staphylococcus aureus	Absent
	Molds and yeasts	10 cfu/g max

PACKAGING:	1 kg plastic bottles, 10 bottles per carton 100 g, 500 g, 5 kg and 10 kg available by order
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APPLICATIONS:	General Information: Nisin is a natural anti-microbial agent used as a preservative in heat processed and low pH foods. Its anti-microbial activity is used against a wide range of gram-positive bacteria and their spores, which cause food spoilage. It especially inhibits heat-resistant bacilli, such as <i>B. Stearothermophilus</i> , <i>C. Butyricum</i> and <i>L. monocytogenes</i> . Nisin alone is not effective against gram-negative bacteria or yeasts and molds. Research has shown that Nisin in combination with chelating agents such as EDTA or nonionic surfactants such as Polysorbate 20, shows potent bactericidal activity against gram-negative organisms.
	Food applications: Nisin is classified as Generally Recognized As Safe (GRAS) by the FDA in CFR Title 21 184:1538, and is permitted to inhibit the outgrowth of <i>Clostridium botulinum</i> spores (the cause of botulism) and toxin formation in pasteurized process cheese spreads with fruits, vegetables or meats at levels not exceeding good manufacturing practice. Current good



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	<p>manufacturing practice, in this case, is the quantity of the ingredient that delivers a maximum of 250 ppm of Nisin in the finished product. Nisin is also approved for liquid egg products, dressings, and sauces.</p> <p>Personal Care Applications: Nisin is shown to have bactericidal activity in topical applications in the treatment of acne.</p> <p>Veterinary Pharmaceutical Applications: Research has shown that Nisin is effective in the prevention of mastitis in dairy cattle. Additional research has studied the bactericidal effects of Nisin in the treatment of <i>Helicobacter</i> gastro-intestinal infections, <i>C. difficile</i> infections of the colon as well as parenteral and sub-cutaneous treatment against <i>Staphylococcus</i>, <i>Streptococcus</i> and <i>Enterococcus</i> bacteria.</p>
OTHER:	<p>Approved Kosher by KOF-K. Nisin is approved as a natural food preservative in the United States. It is also approved as a natural food preservative by more than 40 other countries as well as with the Food and Agriculture Organization/World Health Organization and the European Union. Our manufacturer is the only producer of Nisin made from a vegetable source. Plant is Chinese GMP compliant. Production process is HACCP Certified.</p>
STORAGE AND SHELF LIFE:	<p>Nisin should be stored below 10°C and re-tested against the certificate of analysis 2 years from the date of manufacture.</p>