

## Breads, Cakes, Cookies, Pies, Sweet / Savory dough products Label-friendly Solutions for Shelf-life Extension

YEAST & MOLD, RANCIDITY, MOISTURE LOSS, CRUMB HARDENING, STALING

NATAP™, EPOLYLY™, NISINZ™, PROTERIA™ CP, GUARDOX™, BEFRESH™ MA, SHELFEX™ CZ

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# PRODUCT RANGES

| Code                    | Product name  | Labelled as  | Benefits  | Applications |                         |   | Max. Dosage         |  |  |                     |  |  |             |
|-------------------------|---|--|---|--------------|-------------------------|---|---------------------|--|--|---------------------|--|--|-------------|
| 0101                    | Natap™  | Natamycin  | <ul style="list-style-type: none"> <li>• Providing more efficient food protection against yeast and mold due to better dispersion and durable suspension</li> <li>• Shelf life extension</li> <li>• Natural consumer-friendly labeling</li> </ul> | Bread        | Breads and rolls        | Buckwheat bread, Combread, Crackers, Crispy bread, Dry bread, Flatbread, Leavened bread, Pancake (Tortilla), Rye bread, Soda bread, Sourdough, Sweet bread, Sweet bun, Toasted bread, Wheat bread | 10-40mg/kg          |  |  |                     |  |  |             |
|                         |   |  |   |              | Steamed breads and buns | Mantou, Baozi, Huajuan, Filled dumplings, Steamed bun with meat, jam or other filling (manjyu)  |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Bread-type products     | Croutons, Bread stuffing, Stuffing mixes, Prepared doughs   |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Cakes, cookies and pies | Cakes   |                     | Butter cakes, Cheesecakes, Foam cakes, Fruit-filled cakes, Fruit-filled cereal bars, Moist cake (e.g. namagashi), Moon cakes, Pound cake (e.g. kasutera), Spice cakes, Sponge cakes, Yeast cakes   |  |                     |  |  |             |
|                         |   |  |   |              |                         | Cookies   |                     | Oatmeal cookies, Sugar cookies, British biscuits   |  |                     |  |  |             |
|                         |   |  |   |              |                         | Pies  |                     | Fruit-filled pies, Meat and vegetable filled pies  |  |                     |  |  |             |
|                         |   |  |   |              | Sweet dough products    | Doughnuts, Filled sweet buns (anzan), Sweet rolls, Scones, Muffins, Pastry, Waffle  |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Savory dough goods      | Asian egg rolls, Wontons, Dim sum, Indian mimosas, Spanish empanadas, Tapas, Pirogins, Pizza, Sausage rolls   |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Pasta and noodles       | Fresh pasta   |                     | ε-Polysilyne   | <ul style="list-style-type: none"> <li>• Growth control of Psychrotrophs, coliforms, yeasts, lactic acid bacteria</li> <li>• Shelf life extension</li> <li>• Natural consumer-friendly labeling</li> </ul> | Bread               | Breads and rolls                                 | Rice bread   | 100mg/kg    |
|                         |   |  |   |              |                         |   |                     |  |  |                     | Steamed breads and buns                          | Steamed bun with meat, jam or other filling (manjyu) |             |
| Bread-type products     | Croutons, Bread stuffing, Stuffing mixes, Prepared doughs   |  |   |              |                         |   |                     |  |  |                     |  |  |             |
| Cakes, cookies and pies | Cakes   | Butter cakes, Cheesecakes, Foam cakes, Fruit-filled cakes, Fruit-filled cereal bars, Moist cake (e.g. namagashi), Moon cakes, Pound cake (e.g. kasutera), Spice cakes, Sponge cakes, Yeast cakes |   |              |                         |   |                     |  |  |                     |  |  |             |
|                         | Pies  | Fruit-filled pies  |   |              |                         |   |                     |  |  |                     |  |  |             |
|                         | Savory dough goods  | Asian egg rolls, Wontons, Dim sum, Indian mimosas, Spanish empanadas, Tapas, Pirogins, Pizza, Sausage rolls  |   |              |                         |   |                     |  |  |                     |  |  |             |
| 0302                    | NisinZ <sup>®</sup>   | Vegetal Nisin Z  | <ul style="list-style-type: none"> <li>• Efficient control of Gram-positive bacteria</li> <li>• Shelf life extension</li> <li>• Natural consumer-friendly labeling</li> </ul>   | Bread        |                         |   | Bread-type products |  |  |                     | Bread stuffing, Stuffing mixes, Prepared doughs  | 50-250mg/kg  |             |
|                         |   |  |   |              | Savory dough goods      | Asian egg rolls, Wontons, Dim sum, Indian mimosas, Spanish empanadas, Tapas, Pirogins, Pizza, Sausage rolls   |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | 0306                    | White Nisina <sup>®</sup> +   | White clear Nisin   | <ul style="list-style-type: none"> <li>• Enhanced activities against Gram-positive bacteria</li> <li>• Clear solution with negligible sedimentation</li> <li>• Shelf life extension</li> <li>• Natural consumer-friendly labeling</li> </ul> | Bread  | Bread-type products | Bread stuffing, Stuffing mixes, Prepared doughs  |  | 25-150mg/kg |
| Savory dough goods      | Asian egg rolls, Wontons, Dim sum, Indian mimosas, Spanish empanadas, Tapas, Pirogins, Pizza, Sausage rolls |  |   |              |                         |   |                     |  |  |                     |  |  |             |
| 0502                    | Proteria™ CP  | Cultured sugar   | <ul style="list-style-type: none"> <li>• Mold inhibition</li> <li>• Maintains freshness and quality</li> <li>• Natural, clean label</li> </ul>  | Bread        | Breads and rolls        | Buckwheat bread, Combread, Crackers, Crispy bread, Dry bread, Flatbread, Leavened bread, Pancake (Tortilla), Rye bread, Soda bread, Sourdough, Sweet bread, Sweet bun, Toasted bread, Wheat bread | 0.5-1.5%            |  |  |                     |  |  |             |
|                         |   |  |   |              | Steamed breads and buns | Mantou, Baozi, Huajuan, Filled dumplings, Steamed bun with meat, jam or other filling (manjyu)  |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Bread-type products     | Croutons, Bread stuffing, Stuffing mixes, Prepared doughs   |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Cakes, cookies and pies | Cakes   |                     | Butter cakes, Cheesecakes, Foam cakes, Fruit-filled cakes, Fruit-filled cereal bars, Moist cake (e.g. namagashi), Moon cakes, Pound cake (e.g. kasutera), Spice cakes, Sponge cakes, Yeast cakes   |  |                     |  |  |             |
|                         |   |  |   |              |                         | Cookies   |                     | Oatmeal cookies, Sugar cookies, British biscuits   |  |                     |  |  |             |
|                         |   |  |   |              |                         | Pies  |                     | Fruit-filled pies, Meat and vegetable filled pies  |  |                     |  |  |             |
|                         |   |  |   |              | Sweet dough products    | Doughnuts, Filled sweet buns (anzan), Sweet rolls, Scones, Muffins, Pastry, Waffle  |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Savory dough goods      | Asian egg rolls, Wontons, Dim sum, Indian mimosas, Spanish empanadas, Tapas, Pirogins, Pizza, Sausage rolls   |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | 0801                    | Guardox™ BL   |                     | Bamboo leaf extract  | <ul style="list-style-type: none"> <li>• Delay of rancidity</li> <li>• Anti-acrylamide</li> <li>• Shelf life-extension</li> <li>• Natural clean label</li> </ul>   | Cookies             | Datmeal cookies, Sugar cookies, British biscuits | 0.03-0.1%  |             |
|                         |   |  |   |              |                         |   |                     |  |  |                     | 0802   |  | Guardox™ GT |
| Cakes, cookies and pies | Cakes   | Butter cakes, Cheesecakes, Foam cakes, Fruit-filled cakes, Fruit-filled cereal bars, Moist cake (e.g. namagashi), Moon cakes, Pound cake (e.g. kasutera), Spice cakes, Sponge cakes, Yeast cakes |   |              |                         |   |                     |  |  |                     |  |  |             |
|                         | Pies  | Fruit-filled pies, Meat and vegetable filled pies  |   |              |                         |   |                     |  |  |                     |  |  |             |
|                         | Sweet dough products  | Doughnuts, Filled sweet buns (anzan), Sweet rolls, Scones, Muffins, Pastry, Waffle   |   |              |                         |   |                     |  |  |                     |  |  |             |
| 0804                    | Guardox™ OE   | Olive pulp extract   | <ul style="list-style-type: none"> <li>• Delay of rancidity</li> <li>• Anti-acrylamide</li> <li>• Shelf life extension</li> <li>• Natural clean-label</li> </ul>  | Bread        | Steamed breads and buns | Steamed bun with meat, jam or other filling (manjyu)  | 0.03-0.1%           |  |  |                     |  |  |             |
|                         |   |  |   |              | Cakes, cookies and pies | Pies  |                     | Fruit-filled pies, Meat and vegetable filled pies  |  |                     |  |  |             |
| 0903                    | Befresh™ MA   | Maltogenic amylase   | <ul style="list-style-type: none"> <li>• Anti-staling</li> <li>• Long-lasting crumb softness and freshness</li> <li>• Shelf life extension</li> <li>• Clean label used as aid processing</li> </ul>   | Bread        | Bread and bun           | Flatbread, Leavened bread, Rye bread, Yeasted bread   | 5-10mg/kg           |  |  |                     |  |  |             |
| 1003                    | Shelfex™ CZ   | Cultured sugar and corn fibre  | <ul style="list-style-type: none"> <li>• Moisture retention</li> <li>• Growth control of mold</li> <li>• Shelf life extension</li> <li>• Natural clean-label</li> </ul>   | Bread        | Breads and rolls        | Buckwheat bread, Combread, Crackers, Crispy bread, Dry bread, Flatbread, Leavened bread, Pancake (Tortilla), Rye bread, Soda bread, Sourdough, Sweet bread, Sweet bun, Toasted bread, Wheat bread | 5-10mg/kg           |  |  |                     |  |  |             |
|                         |   |  |   |              | Steamed breads and buns | Mantou, Baozi, Huajuan, Filled dumplings, Steamed bun with meat, jam or other filling (manjyu)  |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Bread-type products     | Croutons, Bread stuffing, Stuffing mixes, Prepared doughs   |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Cakes, cookies and pies | Cakes   |                     | Butter cakes, Cheesecakes, Foam cakes, Fruit-filled cakes, Fruit-filled cereal bars, Moist cake (e.g. namagashi), Moon cakes, Pound cake (e.g. kasutera), Spice cakes, Sponge cakes, Yeast cakes   |  |                     |  |  |             |
|                         |   |  |   |              |                         | Cookies   |                     | Oatmeal cookies, Sugar cookies, British biscuits   |  |                     |  |  |             |
|                         |   |  |   |              |                         | Pies  |                     | Fruit-filled pies, Meat and vegetable filled pies  |  |                     |  |  |             |
|                         |   |  |   |              | Sweet dough products    | Doughnuts, Filled sweet buns (anzan), Sweet rolls, Scones, Muffins, Pastry, Waffle  |                     |  |  |                     |  |  |             |
|                         |   |  |   |              | Savory dough goods      | Asian egg rolls, Wontons, Dim sum, Indian mimosas, Spanish empanadas, Tapas, Pirogins, Pizza, Sausage rolls   |                     |  |  |                     |  |  |             |



Handary is an industrial leader in delivering combined rapid microbial diagnostics and natural protective solutions to effectively increase food safety and shelf-life.

More precisely, Handary is a leading producer in premium shelf-life extension ingredients, including Natap™ high-soluble natamycin, Epolyly™ ultrapure polylysine, NisinA® | NisinZ™ vegetal nisin A/Z, Lysoch™ fermented lysozyme, Proteria™ fermentates, Antimix™ antimicrobial blends, Chitoly™ fungi chitosan and chitin, Guardox™ natural antioxidants, Befresh™ fresh-keeper (enzyme, coating, culture) and Shelfex™ shelf-life extender.



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