

# QUALITY GUARDS.



Beverage manufacturers tailor beverages to meet their customers' lifestyles – at LANXESS we tailor the corresponding beverage protection. Nagardo™ is the natural guardian to secure and prolong the shelf life of your beverage. Safety enabled by nature.

**X Nagardo™**

**QUALITY WORKS.**

**LANXESS**  
Energizing Chemistry



# NAGARDO™

## THE NATURAL GUARDIAN FOR BEVERAGE QUALITY

Soft drinks come with a promise of refreshment and drinking pleasure. But the most important promise to consumers is their safety when enjoying a beverage. Nagardo™ natural beverage protection helps manufacturers to keep this promise by naturally protecting their products from spoilage. Safety enabled by nature.

### BENEFITS

- Natural beverage protection that allows new marketing opportunities
- Efficient control of a broad range of spoilage organisms
- Pure sensory experience
- Broad application in various soft drink formulations
- Safe handling

## NATURAL BEVERAGE PROTECTION

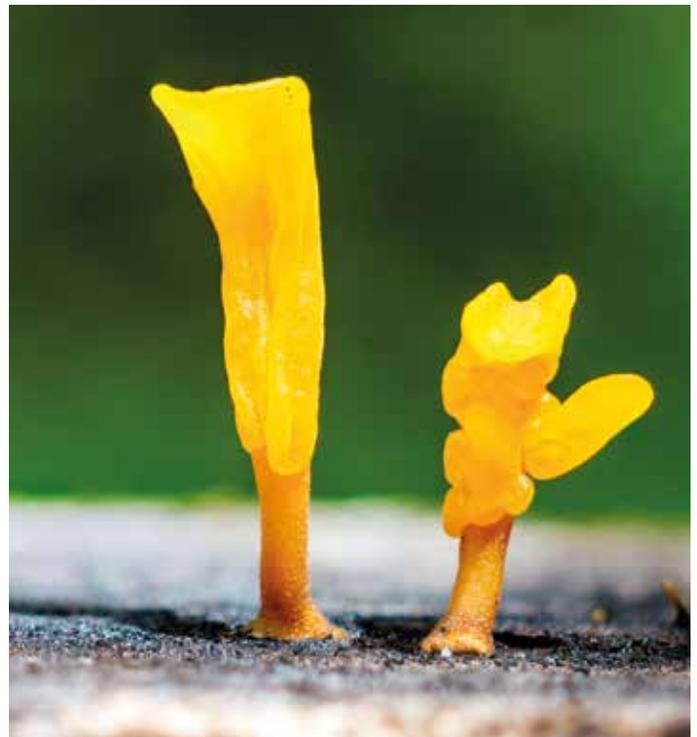
### Derived from nature and produced sustainably

With its natural and sustainable properties, Nagardo™ delivers additional marketing benefits to beverage manufacturers. Long-desired natural labels and claims can become reality.

Nagardo™ is obtained as a purified mixture of glycolipids. The source organism is an edible jelly fungus called *Dacryopinax spathularia* that grows in (sub-) tropical climates. A proprietary wild-type strain (not genetically modified) is cultivated using renewable raw materials. Pure Nagardo™ is recovered by a food-grade and solvent-free process based on filtration and precipitation, without chemical modification.

### NEW OPPORTUNITIES FOR BEVERAGE MANUFACTURERS

- Consumer-friendly labeling
- Natural claims (depending on legislation)



# HIGHLY EFFICIENT

## Nagardo™ is up to 50 times more efficient than chemical preservatives

Nagardo™ natural beverage protection shows very good efficacy against typical beverage spoiling microorganisms including yeasts, molds and bacteria. In addition, it controls microorganisms that have adapted or are less sensitive to currently used preservatives. It works by interacting with the microbial cell membrane and is chemically stable at a pH range between 2.5 to 7 (it is most effective within a pH range of 2.5 to 4.6).

Tailored dosage is key – the recommended dosage needs to be determined individually for each beverage. We support you in finding the optimal quantity to receive reliable antimicrobial protection at balanced costs.

### Efficacy data against microorganisms\*

Minimum inhibitory concentrations of Nagardo™; inoculation of >500 CFU/mL

	MIC Nagardo™ [mg/l]
<b>Yeast</b>	
<i>Saccharomyces cerevisiae</i>	3.1
<i>Zygosaccharomyces bailii</i>	3.1
<i>Zygosaccharomyces rouxii</i>	6.3
<i>Candida parapsilosis</i>	6.3
<b>Mold</b>	
<i>Penicillium roqueforti</i>	12.5
<i>Trichoderma virens</i>	6.3
<i>Aspergillus brasiliensis</i>	6.3
<i>Byssoschlamys nivea</i>	12.5
<b>Bacteria</b>	
<i>Acetobacter aceti</i>	50
<i>Acetobacter pasteurianus</i>	6
<i>Lactobacillus brevis</i>	<10
<i>Lactobacillus plantarum</i>	<3.9

\* Information only. Efficacy data are approximate values and are not considered part of the product specifications.



# PURE SENSORY EXPERIENCE

**Nagardo™ gives manufacturers full control over the sensory experience of their beverage**

Nagardo™ natural beverage protection is taste neutral at recommended concentrations and has no effect on the color. It does not interfere with the sensory experience you desire for your customer.

- Taste neutral
- No influence on color



# BROAD APPLICATION

**The application scope of Nagardo™ covers various soft drinks\***

- Chemically stable at pH range between 2.5 to 7, most efficacious within pH 2.5 to 4.6
- Nagardo™ powder shows good water solubility
- Non-GMO
- Free of known allergens
- GRAS status (US FDA)

## RANGE OF BEVERAGES

- Carbonated & still soft drinks
- Isotonic sports drinks
- Ready to drink teas
- Flavored waters
- Juices and juice-based drinks
- And many more

\* As with any product, use of Nagardo™ in a given application must be tested (including field testing, etc.) by the user in advance to determine suitability.

# PROCESS INTEGRATION

**Nagardo™ can be handled like most other beverage ingredients in powder form. It does not require changes to the typical process or even the filling line.**

- Application as aqueous stock solution at mixing stage of the production process
- Stable as powder
- Stable in typical beverage processing steps, including flash pasteurization and UV treatment
- No packaging restrictions
- Cost efficient
- Safe to handle



# ALWAYS ON HAND

Our specialists are always on hand to provide detailed advice and comprehensive support for everything related to the use of Nagardo™ natural beverage protection:

- Advice on application of Nagardo™
- Support in laboratory tests
- Plant assessment
- Onsite production trials
- Regulatory support

**What can we do for you? We look forward to each new challenge – and our next conversation with you!**

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