



PRECISA[®]

Optimized Texture Systems

Achieve the perfect texture – faster

Texture matters

Your customers experience the texture of your product well before the first bite. Texture is in the way it looks on the fork or the spoon ... the way it pours from the dressing bottle or scoops from the yogurt cup ... the way it feels on the tongue and lingers in the mouth. The visual, audible and oral sensations come from the structure and flow properties of your product and affect the release of flavor throughout the eating experience. Consumers look to texture when judging product quality and liking.

From dressings to dairy products and sauces to soups, getting the texture right can produce dramatic results in consumer preference for your product. Whether transforming or enhancing texture to meet a desired target or maintaining texture when ingredients are reduced or removed, PRECISA® optimized texture systems can help you achieve your texture goals.



Smooth out texture challenges with PRECISA® Cream

- Enhance creaminess and opacity in reduced-, low- or non-fat creamy soups, sauces and dairy products
- Improve nutritional profiles of products by reduction of cream, butter and total fat
- Reduce or replace costly ingredients yet build back original texture and eating experiences
- Maintain product quality throughout shelf life by minimizing syneresis and separation



Draw in texture advantages with PRECISA® Cling

- Provide excellent cling for dressings and sauces
- Improve suspension of herbs, garnishes and particulates
- Increase thickness and body without pastiness
- Reduce or replace costly ingredients such as soy oil, tomato solids and dairy cream
- Minimize separation or syneresis for product quality control throughout shelf life

PRECISA® Cream

PRECISA® Cream optimized texture systems provide the precise amount of key textural attributes that contribute to creaminess while delivering desired viscosity. These systems are especially important for use in reduced-, low- or non-fat applications such as soups, sauces, dips, yogurt and sour cream to provide the mouthfeel of a higher-fat product.

PRECISA® Cream systems help you meet your nutritional goals and label claims – yet still provide the rich eating experience desired by consumers. Want a reduced-fat sour cream with an indulgent taste? Or a mouthwatering pudding that produces satisfied smiles? PRECISA® Cream is the answer.

See what the PRECISA® Cream family of products brings to your applications

PRODUCT	APPLICATION	KEY POINTS	PROCESS
 <p>PRECISA® Cream 10</p>	<ul style="list-style-type: none"> • Non-fat and low-fat blended yogurt • Creamy sauces and dips • Creamy soups • Yogurt-based sauces and dips 	<ul style="list-style-type: none"> • Transform texture • Enhance creaminess • Maintain texture – reduce milk fat and solids • Control syneresis • Freeze/thaw stability 	<ul style="list-style-type: none"> • High temperature/high shear • Retort processing • HTST with homogenization • UHT processing
 <p>PRECISA® Cream 20</p>	<ul style="list-style-type: none"> • Sour cream • Greek yogurt • Thick creamy dips • Creamy sauces • Cream-based soups • Dressings 	<ul style="list-style-type: none"> • Transform texture • Enhance creaminess • Maintain texture – reduce milk fat and solids • Control syneresis • Freeze/thaw stability 	<ul style="list-style-type: none"> • High temperature/high shear • Retort processing • HTST with homogenization • UHT processing
 <p>PRECISA® Cream 50</p>	<ul style="list-style-type: none"> • Creamy sauces and dips • Creamy soups • Dairy desserts and puddings • Dressings 	<ul style="list-style-type: none"> • Transform texture • Enhance creaminess • Maintain texture – reduce milk fat and solids • Control syneresis • Freeze/thaw stability 	<ul style="list-style-type: none"> • Medium temperature/medium shear processes • Kettle cook

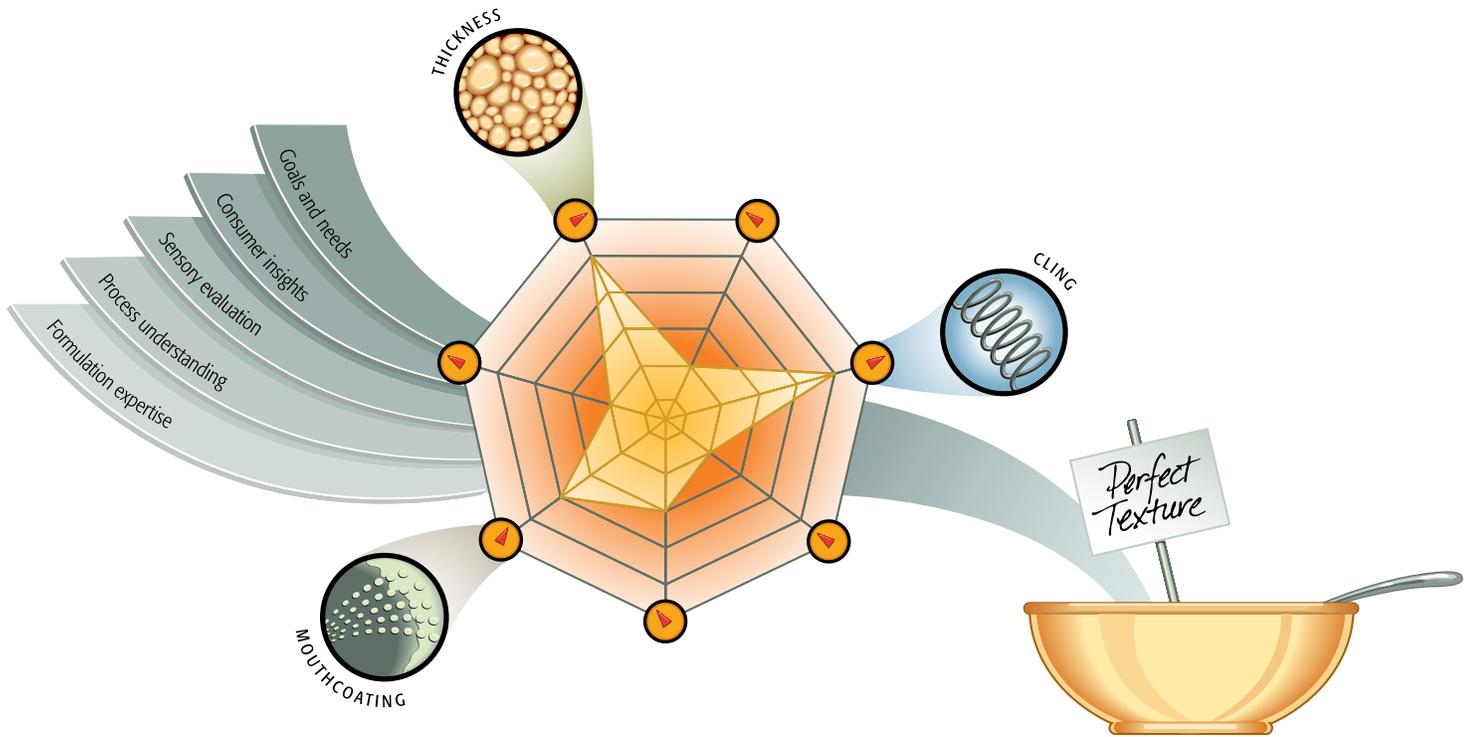
PRECISA® Cling

PRECISA® Cling optimized texture systems deliver just the right balance of key textural attributes that can enhance the cling of sauces and dressings and improve the suspension of fine herbs and particulates.

It also can be used to replace salad oil in dressings or tomato solids in sauces and condiments, helping to build back the texture and eating experience of the original products. Want a delectable barbeque sauce that won't drip away? Or a creamy ranch dressing that says, "Enjoy me guilt-free"? PRECISA® Cling is the choice for you.

See what the PRECISA® Cling family of products brings to your applications

PRODUCT	APPLICATION	KEY POINTS	PROCESS
 <p>PRECISA® Cling 20</p>	<ul style="list-style-type: none"> • Creamy dressings/ sauces/dips • Tomato-based sauces and dips • Marinades • Condiment sauces 	<ul style="list-style-type: none"> • Transform texture • Enhance cling and suspension • Maintain texture – reduce oil or tomato solids • Control separation • Freeze/thaw stability 	<ul style="list-style-type: none"> • High temperature/high shear • Retort processing • HTST with homogenization
 <p>PRECISA® Cling 50</p>	<ul style="list-style-type: none"> • Creamy dressings/ sauces/dips • Tomato-based sauces and dips • Marinades • Condiment sauces 	<ul style="list-style-type: none"> • Transform texture • Enhance cling and suspension • Maintain texture – reduce oil or tomato solids • Control separation • Freeze/thaw stability 	<ul style="list-style-type: none"> • High temperature/high shear • Retort processing • HTST with homogenization
 <p>PRECISA® Cling 20i</p>	<ul style="list-style-type: none"> • Creamy salad dressings • Cold-process dips • Instant sauces and condiments • Cold-pressed marinades and condiments 	<ul style="list-style-type: none"> • Transform texture • Enhance cling and suspension • Maintain texture – reduce oil or tomato solids • Control separation • Freeze/thaw stability • Ease of use 	<ul style="list-style-type: none"> • Cold processing/high shear • Instant (dry) soups, sauces or desserts



Dialing in success

PRECISA® optimized texture systems were designed and developed via our proprietary DIAL-IN™ Texture Technology: the shortest path to the perfect texture. The DIAL-IN™ approach combines the science and art of food formulation, translating consumer needs and sensory preferences into food systems that elevate the eating experience.

Rapid, robust and data-driven approach to achieving your texture goals

- 1 **DEFINE BUSINESS GOALS FOR THE PROJECT AND PRODUCT**
 To accelerate the process, we define:
 - Technical requirements
 - Relevant consumer information
 - Label requirements or desired claims
 - Nutritional requirements
 - Important targets and benchmarks
 - Timelines and metrics

- 2 **GATHER CONSUMER INSIGHTS**
 Consumer language is broad and sometimes hard to measure. To help food manufacturers succeed, we first understand consumer desires and translate them into fundamental and measurable terms.

Power to change. Power to preserve.

Your product may need a texture adjustment to protect or increase your market share. Or you may need to reformulate to cut costs. Or perhaps you want to create a new product with an eating experience all its own. PRECISA® optimized texture systems enable you to enhance or change texture and optimize value – without experiencing the uncertainty and loss of time associated with solutions derived through trial and error.

PRECISA® systems help you transform texture in your new or current products to match a target benchmark, enhance positive textural attributes or reduce texture negatives. They also help you build back texture when you remove ingredients for cost or label reasons or add ingredients to improve nutrition. Get the flexibility you need to provide a consistent brand texture experience across your product lines and satisfy both current and future consumers – with PRECISA® systems.

Let's get started. Speak with the texture experts at National Starch today. Call National Starch at 1-866-961-NATL (6285) or visit foodinnovation.com/precisa.

The advantages of PRECISA® systems

- Transform texture**
- Maintain texture**
- Reduce costs**
- Protect your brand**
- Compete better**

3 EVALUATE SENSORY ATTRIBUTES AND SET TEXTURE TARGET

To find key attributes for an application, we characterize products with a range of textural diversity. Then we compare them in a texture map and note the differences so we can develop an action plan.

4 UNDERSTAND IMPACT OF YOUR PROCESS ON TEXTURE

We look at equipment, time, temperature, shear and acidity. Our experienced team can review your production process and support rapid commercialization.

5 FORMULATE FOR TEXTURE TRANSFORMATION AND/OR VALUE OPTIMIZATION

Using data gathered throughout the DIAL-IN™ approach, combined with National Starch's texture understanding and capabilities, we develop formulations that achieve your goals more quickly.

Rely on PRECISA® optimized texture systems and the texture experts at National Starch for the most innovative food texture solutions available.

Call National Starch at 1-866-961-NATL (6285) or visit foodinnovation.com/precisa.

Unparalleled texture capabilities



Texture Center of Excellence

Our state-of-the-art facility in Bridgewater, NJ, is where we work to develop the best texture solutions for customers like you. Knowledge, processing expertise and our portfolio of texture systems combine to give you an innovative edge.



T-REx texture characterization

Materials scientists and experts in food rheology use robotic technology to assess and characterize food texture and design new functional systems — 10 times faster than when using traditional methods.



Sensory: Translating the eating experience

We funnel consumer insights into fast-track prototype development that can quickly be put into trials for preference testing. You get exactly the products and formulations you need with a faster time to market.



CULINOLOGY® and application expertise

Food technologists and CULINOLOGISTS® work together to optimize food texture and flavor, create new food concepts and help our customers address formulation and processing challenges.

National Starch Food Innovation

10 Finderne Avenue, Suite C
Bridgewater, New Jersey 08807-3300 U.S.A.

Directory Assistance

Tel: 1-866-961-NATL (6285)
Fax: 1-609-655-4402
Internet: www.foodinnovation.com

National Starch Food Innovation (Canada)

106 Summerlea Road
Brampton, Ontario L6T4X3
Customer Service: 1-866-414-1263
Technical Service: 1-866-414-1263



foodinnovation.com/precisa

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without the authority from the owner of this patent.