

# Leading edge bakery solutions

Create the perfect texture with Tate & Lyle

Moist cakes. Flaky pastries. Soft biscuits. Chewy cookies. Whatever sensory experience you wish to deliver or challenge you need to master, Tate & Lyle makes it easy to create the texture that appeals to your consumers. When it comes to formulating craveable baked goods, texture is an important delivery mechanism for taste.

Tate & Lyle's food starches are derived from a variety of botanical food sources and are available in native, modified, cook-up, instant and clean-label varieties. Our diverse portfolio provides options from basic thickening to highly-unique functionalities relevant to the bakery category. Our talented and experienced applications specialists can assist you every step of the way, if needed. Our goal is your success.



## Bakery

We use our starches to retain moisture and extend shelf-life of cakes, muffins and pastries. They aid in suspending fruit solids in fillings, controlling cookie spread during baking, and improving the texture of cookies and biscuits. Functionality provided by our starches can give your products a real competitive advantage.

FUNCTIONALITY	TATE & LYLE STARCH SOLUTION			BENEFITS
	Cook-Up	Instant		
<b>Build batter viscosity</b>		CLARIA® Instant 340, 360* GEL DURA-JEL® HI-JEL™ S	MERIGEL® 340, 347, 348 MERIGEL® 100, 300, 301* REDISOL® 88, 412 TENDER-JEL® 434, 670	Builds batter viscosity and allows for easy deposit. e.g. Muffins, cakes and brownies
<b>Moisture management and structure development</b>	LO-TEMP® 452, 453	MERIGEL® 340, 347, 348 MERIGEL® 100, 300, 301* MIRA-GEL® 463*	REDISOL® 88, 412 TENDER-JEL® 434, 670	Provides uniform cell structure and aids with shelf life extension. e.g. Muffins, biscuits and cookies
<b>Uniform shape and consistency</b>	FRUITFIL®	CLARIA TOP-GEL®* MIRA-GEL® 463*	MERIGEL® 100, 300, 301* X-PAND'R® SC, 612*	FRUITFIL® holds shape in pie fillings. Instant corn starches help control spread and reduce dough stickiness. e.g. Cookies
<b>Fat mimetic, reduced fat formulas</b>	STA-SLIM® 143 STA-SLIM® 151	CLARIA TOP-GEL®* MIRA-GEL® 463*	STA-SLIM® 142 STA-SLIM® 150	Provides texture and moisture control in low fat systems. e.g. Cakes, cookies
<b>Freeze-thaw stability</b>	CLARIA EVERLAST® 565, 575*	GEL DURA-JEL® MERIGEL® 340, 347, 348	MIRA-THIK® 609 TENDER-JEL® C, 434	Consistent texture after frozen storage. e.g. Frozen baked goods, bakery fillings
<b>Fillings at intermediate pasting temperatures</b>	LO-TEMP® 452, 453, 588			Offers ease of handling and controls boil out during baking. e.g. Filled baked goods such as danish, toaster pastries, thumbprint cookies
<b>Icing spreadability and smooth texture</b>		CLARIA TOP-GEL®* MIRA-GEL® 463*	MIRA-THIK® 468, 469 SOFT-SET®	Improves moisture retention and reduces surface cracking. e.g. Canned, ready-to-spread frosting
<b>Adhesion and film formation</b>		TAPIOCA Dextrin 11, 12		Seals dough layers and serves as adhesive for toppings. e.g. Eggwash replacement
<b>Gluten free</b>	NUSTAR® 120 TAPIOCA No. 1	CLARIA TOP-GEL®* MERIGEL® 100, 300, 301*	MIRA-GEL® 463* X-PAND'R® 612*	Improves machinability of dough, aids in expansion while baking, maintains moisture and provides structure in finished goods. e.g. GF bread, cookies, cakes, muffins, cookies

Starch source: CORN (MAIZE) | TAPIOCA | POTATO

\*Labels simply as corn, tapioca or potato starch



## Viscosity Development

- **Batter Viscosity**—Our bake-stable starches resist thinning during baking, controlling the spread of batter to maintain uniform shape and consistent size. They can also add viscosity in batter to suspend particles and ensure even distribution in baked goods, enabling higher manufacturing speeds to optimize production time.
- **Hydration**—High-solid fillings require a starch that can fully hydrate and thicken with limited water. Specialty instant and low-pasting-temperature starches can be used to obtain full viscosity during baking, enabling the use of high-quality, stable fillings in toaster pastries, cookies or other baked goods.

## Texture Development

- **Smooth and creamy icings, frostings and glazes**—Granular instant starches are widely used in icings and frostings to control moisture and provide a creamy texture with a proper set. Whether improving spreading characteristics, providing definition in decorator's gel, or stability in frozen icings to reduce weeping and cracking upon thawing, granular instant starches are the key to solving the toughest challenges of today's formulators.

- **Structure**—Starches control and enhance aeration, providing crumb structure and texture formation in baked goods. In gluten-free bakery products, starch is essential to maintain this structure for optimal mouthfeel.

## Process Functionality

- **Bake stability**—Starches can prevent fillings from boiling out in cookies and pastries.
- **Moisture management**—Starches absorb and maintain moisture during baking to help deliver the ultimate desired texture, whether moist, chewy or somewhere in between.
- **Process requirements**—Whether you are creating artisan-baked goods or conventional production-line manufactured goods, Tate & Lyle can help evaluate the right functionality for optimal performance in your unique process.

## Finished Product Stabilization

- **Moisture retention**—Starch holds and maintains moisture in the baked goods to extend the shelf life of the product and improve the cost structure for in-store.
- **Freeze-thaw stability**—In frozen dough or prebaked-frozen baked goods, starch controls or stabilizes moisture and structure, enabling the final thawed or baked product to

have the same high quality as the fresh-baked product. The ultimate appeal, of course, is to consumers for whom taste is the most critical factor in purchasing baked goods. This is why mastering starches is critical in every effort to increase brand appeal and open up other distribution channels within retail and foodservice.

## Clean Label

Enjoy a clean-label claim and great taste, too, with CLARIA® Functional Clean-Label Starches, which label simply as "starch", "corn starch" or "tapioca starch"\*\*\* yet perform similarly to modified food starches. The CLARIA® line offers a clean, neutral taste and colour comparable to modified food starches and is versatile across a broad range of applications and sophisticated processes.

## About Tate & Lyle

We are a leading global food and beverage ingredients and solutions supplier, with a 160-year history of ingredient innovation. Through our purpose, *Transforming Lives Through the Science of Food*, we believe that together, we can successfully grow our businesses whilst having a positive impact on society. Partner with us to create healthier, tastier and more sustainable food and beverage solutions for consumers.

The information contained should not be construed as recommending the use of Tate & Lyle's product in violation of any patent, or as warranties (expressed or implied) of non-infringement or its fitness for any particular purpose. Prospective purchasers are advised to conduct their own tests, studies and review of the intellectual property and regulatory space to determine the fitness of Tate & Lyle products for their particular purposes, product claims or specific applications.  
\*\*\*Starch or "maize starch" in Europe; "starch" or "corn starch" in the US, Canada, China, Australia, New Zealand and Latin America.

