



Frozen Bakery
solutions

Reduced shrinkage and cracking

Moisture management for extended shelf life

Improved texture while reducing large air cells and tunnels

GPC scientists recognize the challenge of formulating baked products with an extended shelf life. These products must remain stable through frozen storage and distribution over long periods of time when subsequent product abuse can affect quality. We can provide practical ingredient solutions to solve these issues.



At **Grain Processing Corporation (GPC)** we know that quality is the key component for successful frozen bakery products. In the past, industry has depended on traditional drum-dried pregelatinized starches to keep cakes, muffins and cookies more moist. Unfortunately, these products fail to deliver the extended stability that is required in today's marketplace. Although drum-dried starches promise a short-term solution, these starch granule fragments are simply unable to manage the moisture through freeze/thaw cycles and extended storage conditions. As a result, moisture migrates to the top of the frozen product and creates a wet surface. Formulators typically add more hydrocolloids or starches to further reduce moisture loss. This often leads to even greater problems because these added ingredients will not fully hydrate as they do not have sufficient moisture. Consequently, shrinking and surface cracking occurs when the product is cooled or defrosted. Over stabilization now emerges as the primary issue.

Proven Success

Technical scientists at GPC have completed eighteen months of frozen storage stability testing. The objective of the study was to evaluate the effect of starches and gums on the volume, texture and crumb structure of yellow cake. Storage trends were studied to determine moisture changes over time, volume loss and shrinkage, as well as textural changes such as hardness, crumbliness, stickiness and loss of resilience.

INSCOSITY® cold water swelling starch demonstrated the best solution for reducing hardness both at room temperature and in the freezer. This resulted in better quality provided by INSCOSITY® instant starch due to its ability to prevent shrinkage, reduce moisture loss and retain softness during storage. INSCOSITY® cold water swelling starch is an intact granule modified cornstarch. The intact granule allows for moisture stability over extended periods of time. INSCOSITY® starches solve the issue of over stabilization by providing a single starch solution that maintains quality in frozen bakery applications over extended periods of time and through product abuse.

Technical Formulations

CAKES
COOKIES AND BARS
MUFFINS
CHEESECAKES
DOUGHNUTS AND WAFFLES
ASSORTED GLUTEN-FREE APPLICATIONS

Ingredient Functionality

INSCOSITY® INSTANT MODIFIED FOOD STARCHES

- Improves moisture retention
- Improves cell structure
- Decreases large air cells and tunnels
- Maintains softness during freezing
- Increases batter viscosities
- Controls cookie spread during baking

GPC scientists continue to work on frozen bakery applications. For more information to start your journey to fresher and better frozen baked goods, contact your sales or technical representative.

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