

Q&A

What you need to know about replacing modified food starches in food and beverages.



Are you on a quest for a cleaner label? Food manufacturers often rely on modified food starches. This versatile ingredient has many uses such as thickening sauces, controlling moisture throughout temperature changes and enhancing a product's texture or mouthfeel. This makes replacing a modified food starch in a recipe challenging. This Q&A with Cargill technical services manager Michelle Kozora can help you transition to a label-friendly starch that doesn't compromise product taste or quality.

What is your experience with starches?

I have a Masters Degree in food science and food chemistry and nearly 20 years of experience in the ingredient industry, much of it with starches. At Cargill, I'm the lead technical manager for starches. I lead a team of food science professionals. We help our customers achieve their product formulation goals. We understand that this is different for everyone. Our goal is to provide the solution that is right for you.

What advice can you give someone who is considering replacing a modified food starch in a food or beverage product with a more label-friendly ingredient?

The switch isn't always easy. Typically, there will not be a one-to-one replacement for a modified food starch. A simple swap will most likely result

in a failure of some kind. Label-friendly starches generally must be used at a higher rate, typically one or two percent more.

Also, you may not be able to simply replace a modified food starch with another single starch. You may need to have a blend of starches or add another ingredient solution to achieve the same texture, stability, appearance and taste. Some of the complementing ingredients can be proteins or hydrocolloids, depending on what is acceptable for your label.

What label-friendly starch options does Cargill provide?

Native and functional native starches: These are derived from corn, wheat, potato, and tapioca. Native starches are generally used for food texturizing and thickening.

continued

Pre-gelatinized and cold water swelling starches:

These develop viscosity without the need to pre-cook the starch to obtain texturizing benefits.

Specialty starches: Specialty starches offer a range of functional properties such as texturizing, binding, thickening, gelling and stabilizing. They offer unique benefits for specific applications. Included in our specialty starch offering for label-friendly starches is our HMT starch, which is a heat-moisture treated physically modified starch that can offer some added stability beyond traditional native starches.

Non-GM Starches: Portfolio of non-GM starches from different specialty botanical sources that provide unique functionalities while enabling a non-GM claim.

What applications have the most success with modified food starch replacement?

We've had great success with frozen bakery products. For example, we've replaced the modified food starch in cakes with a native starch. When thawed, these cakes maintain a smooth surface, fine crumb texture and ideal moisture level. And of course, they have a more consumer-friendly label.

We've seen good results with crackers, too. When modified food starches are used to bind the dough, we can replace it with a waxy or dent corn starch. This may be a simple swap.



Can you provide additional examples of how your team is helping manufacturers replace modified food starches with label-friendly solutions?

We do a lot of work with fruit preps. This can be a challenge because of temperature changes between processing and use. We've found that we can use a proprietary blend of native starches to replace the modified food starch. We've had great success managing viscosity and controlling weeping.

We've also worked with many salad dressings and sauces. We've found that a native starch and pea protein blend can produce a shiny, smooth dressing with excellent stability. Additionally, a proprietary blend of native starches can also be used to replace modified starches and some hydrocolloids in a frozen prepared entrée sauce and offer excellent stability and smooth texture.

What's the biggest challenge manufacturers face when replacing modified food starches in products?

Thermal processes are hard on starches. When working at higher processing temperatures, you'll often need to look at a stronger starch. Dairy applications can also be difficult due to processing conditions. But our team has experience solving these issues.

What else do manufacturers need to consider when reformulating products?

Label-friendly starches are generally more expensive than modified food starches. While consumers don't mind paying more for quality ingredients, that enthusiasm doesn't always apply to removing components. Our technical team, however, can provide options to help our customers manage costs.

continued

What other starch-related trends are you seeing in the industry?

A lot is happening with resistant starch, which passes through the digestive track relatively unchanged. It adds dietary fiber to a wide variety of food products. This helps food manufacturers deliver great-tasting products with impressive nutritional profiles. Resistant starch is also a good flour replacer making it ideal for use in gluten-free formulas.

Why should food manufacturers work with Cargill to replace modified food starches?

We have the technical expertise on food starches. Plus, we have so many options in our Cargill toolbox. We're able to create custom blends to help manufacturers achieve the functionality they need. Our broad portfolio, technical expertise and consistent supply chain helps remove the stress of formula changes.



The Cargill Advantage

Cargill offers a diverse selection of label-friendly texturizers. Our portfolio coupled with our integrated formulation and regulatory expertise enables product development with friendlier labels while maintaining quality, functionality and cost competitiveness.

Visit cargill.com/labelfriendly or call 1-877-SOL-UTNS (765-8867)