

Challenge: Solved

A TAPIOCA STARCH CASE STUDY





Convenient
culinary sauces
that bring life
to every meal

Meet Wellness Guidelines Without Compromise

How do you answer the demand for foods that meet various lifestyle eating approaches, especially when consumers still want options that are delicious, satisfying and convenient?

Prepared culinary sauces answer their cravings, and now, they can also provide options for those following various eating regimens, such as vegan, gluten free, low-carb and more. The proof is in our on-trend Vegan Nacho Cheese Sauce and our No-Sugar-Added BBQ Sauce, thanks to the functionality of Texperien™ Max tapioca starch solutions.



The **global meal kit market is expected to grow** from \$11.19 billion in 2021 to \$13.50 billion in 2022 at a **CAGR of 20.64%**.¹



50% of consumers have tried a new eating approach in the last year. On average, those adults tried 2.5 different diets in the same year.²



8 of 10 consumers are trying to avoid or reduce sugars in their diets³ and rank sauces and dressings as the **second-most important** category for sugar reduction, following beverages.⁴

¹ <https://www.thebusinessresearchcompany.com/report/meal-kit-global-market-report>

² Modern Approaches to Eating, June 2022, The Hartman Group

³ Mintel, Consumer Approach to Nutrition, US, 2021 (2021 vs. 2020)

⁴ ADM Outside Voice Sugar Reduction & Consumers, US 2020; EU 2021

These on-trend **Vegan Nacho Cheese** and **No-Sugar-Added BBQ** sauces are a **formulator's dream**, helping answer the market demand for lifestyle diet-friendly culinary sauce solutions.

CHALLENGE

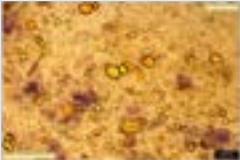
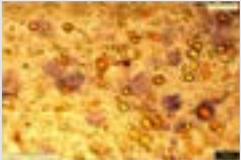
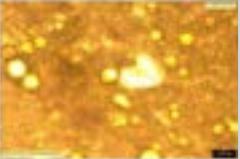
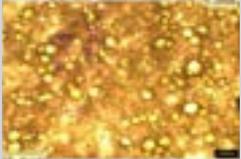
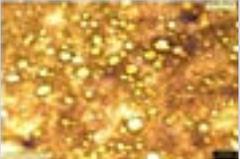
Creating tasty and reliable frozen sauces that maintain their structural integrity through the freeze-thaw process, with starch solutions that help overcome separation and water syneresis—to work in formulations every time.

The current focus on removing and reducing added sugars and/or replacing dairy-based ingredients with plant-based ingredients impacts the performance of the starches in sauces, especially frozen sauces.

SOLUTION

Texperien™ Max tapioca starches help provide the right texture, viscosity, thickness and moisture management for processed foods. At the same time, they offer many formulation options—gluten free, non-GMO, allergen free—all with a clean flavor profile.

COOKING IMPACTS ON STARCH IN SAUCE PUCKS

Sauce	Frozen / Thawed	Microwave (80°C)	Pan (80°C)
No-Sugar-Added BBQ Sauce			
Vegan Nacho Cheese Sauce			

- Individual frozen pucks cooked without steamer bags to understand cooking methods impacts on the starch
- Both microwave and pan cooking methods displayed intact starch granules which demonstrates stability after freezing

Texperien™ tapioca starches provide a variety of functional benefits:

Process Tolerance Meets needs of wide variety of processing conditions: heat, acid, shear, freezing and more.

Texturizer Thickens foods, with textures ranging from firm and elastic to soft and extensible.

Mouthfeel Enhancer Smooth, short texture for a luxurious mouthfeel.

Water Binder Moisture management to stabilize and optimize food performance.

Emulsification Dispersing colloidal systems (typically oil & water) for stability and shelf life.



NO COMPROMISE ON FUNCTIONALITY

We use our technical expertise across numerous product platforms to provide expert solutions to complex consumer opportunities, such as these on-trend freeze-thaw sauces. Functionality is critical, so we work diligently to ensure our tapioca starch solutions:

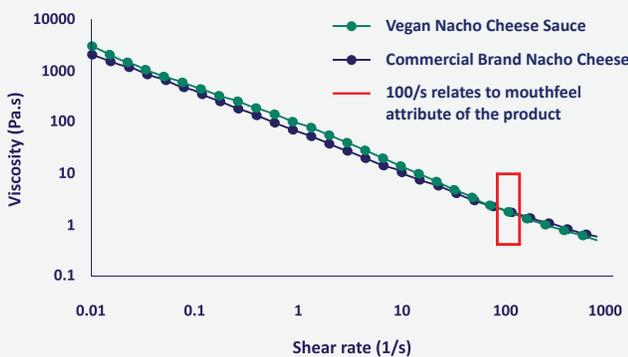
- Enable functionality and provide stability of the starch granules to maintain water-holding capacity in challenging processing conditions
- Are validated with data-driven solutions
- Provide unparalleled quality for plant-based formulations

ADM's technical team conducted extensive tolerance testing to ensure functional performance of our Vegan Nacho Cheese sauce and No-Sugar-Added BBQ sauce.

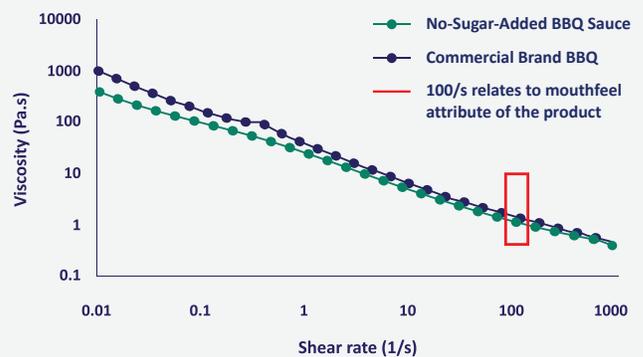
Viscosities in ADM's samples show similar trends to the commercial control brands as shear rates increase.

Comparable Viscosity Profile vs. Control

Vegan Nacho Cheese Sauce



No-Sugar-Added BBQ Sauce



A Label that Stands Out and Stands Up

Culinary sauces and dressings are one of the fastest growing categories for consumers seeking vegan and keto claims.⁵ On-trend tapioca starch gives brands the ability to feature in-demand label claims with consistently delicious sauces that deliver on taste and texture in convenient meal kits.

⁵ Mintel GNPD, August 2021

VEGAN NACHO CHEESE SAUCE

Nutrition Facts	
Serving size	1/4 cup (64g)
Amount Per Serving	
Calories	150
<small>% Daily Value*</small>	
Total Fat 15g	20%
Saturated Fat 2.5g	12%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 290mg	12%
Total Carbohydrate 2g	1%
Dietary Fiber 0g	1%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 3g	
Vitamin D 0mcg 0%	Vitamin A 210%
Calcium 0mg 0%	Phosphorus 2%
Iron 0mg 0%	Selenium 15%
Potassium 0mg 0%	Copper 4%
	Molybdenum 15%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS:
 FILTERED WATER,
 SOYBEAN OIL,
 MODIFIED TAPIOCA
 STARCH, SOY
 PROTEIN ISOLATE,
 SOY PROTEIN
 CONCENTRATE,
 SALT, XANTHAN
 GUM, SODIUM
 CITRATE, SOY
 LECITHIN, NATURAL
 FLAVOR, CITRIC
 ACID, NATURAL
 COLOR.

POTENTIAL FRONT OF PACK LABEL CLAIMS:

- Vegan
- Non-GMO
- Dairy free
- Clean flavor

KEY ADM INGREDIENTS:

- Texperien™ Max Modified Tapioca Starch
- Arcon® S Soy Protein Concentrate
- ProFam® 891 Soy Protein Isolate
- RBD Soybean Oil
- Natural Flavor
- Natural Color
- Citric Acid
- Sodium Citrate
- Ultralec® P Lecithin

READY TO SOLVE YOUR CHALLENGES?

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NO-SUGAR-ADDED BBQ SAUCE

Nutrition Facts	
Serving size	2 Tbsp (30g)
Amount Per Serving	
Calories	15
<small>% Daily Value*</small>	
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 390mg	17%
Total Carbohydrate 6g	2%
Dietary Fiber 0g	2%
Total Sugars Less than 1g	
Includes 0g Added Sugars	0%
Sugars Alcohol 4g	
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS:
 FILTERED WATER,
 TOMATO PASTE,
 ERYTHRITOL,
 VINEGAR, SALT,
 SOYBEAN OIL,
 MODIFIED TAPIOCA
 STARCH, PAPRIKA,
 ONION, CARAMEL
 COLOR, XANTHAN
 GUM, CUMIN,
 GARLIC POWDER,
 CAYENNE PEPPER,
 NATURAL FLAVOR,
 STEVIA LEAF
 EXTRACT.

POTENTIAL FRONT OF PACK LABEL CLAIMS:

- Keto-friendly
- Non-GMO
- Zero added sugars
- Natural flavor
- Dairy free

KEY ADM INGREDIENTS:

- Texperien™ Max Modified Tapioca Starch
- SweetRight® Edge Stevia
- SweetRight® Erythritol
- RBD Soybean Oil
- Natural Flavor

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