

PLANT-BASED DAIRY ALTERNATIVE APPLICATIONS


Using Stabilizers to Overcome Formulation Challenges



 **CPKelco**

A HUBER COMPANY

Unlocking Nature-Powered Success



More than one-fourth of consumers globally
are actively trying to increase consumption of
PLANT-BASED PROTEIN

- Global Data, Top Trends in Dairy 2020, March 2020

ACHIEVING YOUR GOALS

Growing popularity and demand for plant-based protein products have led to an increase in diversity in terms of raw material sources and applications. This expanded market presents a great opportunity for brands. However, working with plant proteins has its challenges: the molecular structure and functionality of plant proteins are different than animal proteins and will require formulation modification.

We make formulating these types of plant-based dairy alternative applications easier:

- Beverages
- Yogurts
- Frozen and chilled desserts
- Cheeses and spreads

Here's how a stabilizer can help your formulation:

- Suspension of insoluble particles
- Protein protection
- Syneresis control
- Body and gel formation
- Shelf-life stability
- Foam stabilization and emulsion stability

Our broad portfolio of **Ingredients for Success**, along with our processing expertise can help you create new offerings while overcoming formulation challenges.

INGREDIENTS **for** SUCCESS

KELCOGEL® Gellan Gum



KELCOGEL® Gellan Gum is your multifunctional, go-to ingredient for solving plant-based protein formulation challenges. A soluble dietary fiber, gellan gum is produced by fermentation of a pure culture of *Sphingomonas elodea*, with a composition identical to the naturally occurring bacteria found on water lily pond plants. It can be used in conjunction with other texturants, such as pectin or starch to control syneresis and improve body. Formulators can also use it to form a soft-to-firm gel texture that enables the creation of plant-based cheeses and dairy alternative desserts. Fermentation-derived gellan gum provides stabilization and suspension while contributing minimal mouthfeel and ensuring a smooth pour.

Benefits in applications:

- Excellent suspension of insoluble protein, calcium, minerals and cocoa particles
- Plays well with other texturants
- Minimal mouthfeel
- Fluid gel capabilities
- Foam stabilization
- Gel formation



**Organic
Compliant***



Non-GMO*



Vegan

MORE INGREDIENTS **for** SUCCESS

KELTROL® Xanthan Gum



KELTROL® Xanthan Gum is a soluble fiber created by fermentation of a bacteria culture with a composition identical to the organism that naturally occurs on cruciferous plants, such as cabbage. It is used as a thickening agent and stabilizer to prevent separation. Our family of blends utilizes the best functionality and synergy of xanthan gum, guar and locust bean.

Benefits in applications:

- Provides suspension and water control
- Binds water and adds structure to non-dairy cheese products
- Controls melt in non-dairy cheeses
- Adaptable to most food processing conditions



Organic
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Vegan

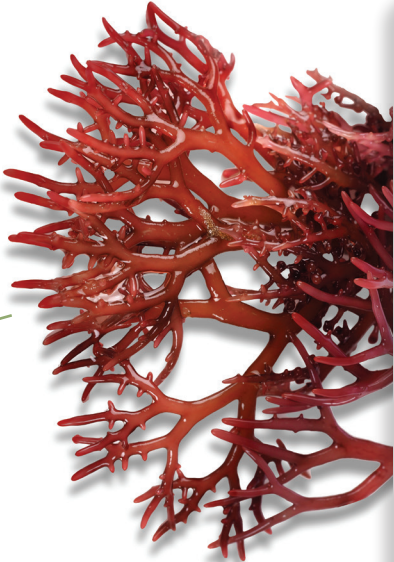


Non-GMO*



Unlock nature-powered success by identifying the best ingredients for your dairy alternative applications and the attributes you seek for optimal consumer appeal.

GENU® Carrageenan



Sourced from red seaweed, **GENU® Carrageenan** provides multiple functionalities to help you reduce ingredients. You get suspension, protein stabilization, mouthfeel and body all in one, while preventing separation.

Benefits in applications:

- Protein protection
- Texturizing agent in non-dairy cheeses: firm, shreddable, soft, spreadable
- Prevents creaming over shelf life including in hard-to-stabilize coconut milk



Organic Compliant*



Vegan



Fat Reduction



Non-GMO*

GENU[®] Pectin



GENU[®] Pectin is sourced from citrus peels and easily recognized as a label-friendly ingredient choice. It can be used to stabilize proteins at acidic pH and prevent sedimentation and syneresis. A well-known gelling agent, pectin can create soft-to-firm, spoonable textures, depending on use level. If you're striving to reduce sugar or fat in your formulation, pectin builds back body and optimizes mouthfeel. Grades to support organic compliance are also available.

Benefits in applications:

- Protein protection
- Stabilization of acidified drinks
- Mouthfeel
- Gel formation



Organic
Compliant*



Vegan



Sugar Reduction



Non-GMO*

FORMULATION OPPORTUNITIES

Formulate your plant-based dairy alternative application with the right ingredients.

Below are examples of challenges that we can help you solve.

PRODUCTS	FORMULATION CHALLENGES	CP KELCO SOLUTION	SUGGESTED USE LEVELS
BEVERAGE ALTERNATIVES			
Milks & Creamers	<ul style="list-style-type: none"> Suspension of insoluble particles (proteins, minerals, cocoa) Creaming prevention Desired mouthfeel Stability 	KELCOGEL® Gellan Gum	KELCOGEL HS-B (0.08 – 0.14%) KELCOGEL HA-B (0.03-0.035%)
		GENU® Carrageenan	GENUVISCO NS-300 (0.02-0.045%) GENUVISCO CSM-2 (0.02-0.045%) GENUVISCO J-DS (0.02-0.045%)
	<ul style="list-style-type: none"> Prevention of protein flocculation (for creamer only) 	GENU® Pectin	GENU BETA (0.2-0.3%) (use with gellan gum)
Protein Drinks (With Fruits)	<ul style="list-style-type: none"> Protein protection Suspension in low-protein drinks Stability-prevents phase separation 	GENU® Pectin	GENU YM-115-L (0.2 - 0.5 %) GENU YM-115-H (0.2 - 0.5 %) GENU BETA (0.3-1%) (use with gellan gum)
		KELCOGEL® Gellan Gum	KELCOGEL APL-B (0.5 – 0.85%) KELCOGEL APM-B (0.5 – 0.85%) KELCOGEL APHV-B (0.5 – 0.85%)
YOGURT ALTERNATIVES			
Drinking Yogurts	<ul style="list-style-type: none"> Body and texture Syneresis control Viscosity and stability 	GENU® Pectin	GENU LM-106 AS-YA (0.2-0.5%) GENU Explorer 30 CS-YA (0.2-0.5%)
		KELCOGEL® Gellan Gum	KELCOGEL ADY (0.03%)
Stirred Yogurts	<ul style="list-style-type: none"> Body and texture 	GENU® Pectin	GENU Texturizer YA-200 (0.2-0.4%) GENU LM-106 AS-YA (0.2-0.5%) GENU Explorer 30 CS-YA (0.2-0.5%)
CHEESE ALTERNATIVES			
Cream Cheeses & Cheeses	<ul style="list-style-type: none"> Body and texture Syneresis control Meltability 	GENU® Carrageenan	GENUVISCO CSM-2 (0.01-0.05%) GENULACTA LIC-130 (0.01-0.02%) GENULACTA LRA-50 (0.25 – 0.50%)
		KELTROL® Xanthan Gum	KELTROL (0.025-0.05%) KELGUM (0.025-0.05%)
		KELCOGEL® Gellan Gum	Kelcogel F (0.3-0.5%) Kelcogel LT 100 (0.3-0.5%)
DAIRY ALTERNATIVES			
Frozen Yogurts, Ice Creams	<ul style="list-style-type: none"> Ice crystal growth control Texture and mouthfeel Aeration Shelf-life stability Syneresis control 	GENU® Carrageenan	GENUVISCO CSM-2 (0.01-0.5%) GENULACTA LIC-130 (0.01-0.02%)
		KELTROL® Xanthan Gum	KELTROL (0.025-.05%) KELGUM (0.025-.05%)
		GENU® Gum Refined Locust Bean Gum	GENU Gum RL-200 (0.03-0.05%)

Products and suggested use levels are recommendations only.

SOLUTION OVERVIEW

Unlock nature-powered success using our broad portfolio and processing expertise to create new plant-based dairy-alternative offerings. CP Kelco can help you identify the best ingredients to overcome a variety of formulation challenges including:

- Protein protection
- Protein suspension
- Syneresis control
- Eliminating creaming over shelf life
- Building the right body and mouthfeel
- Masking off-taste

What We're Made Of

CP Kelco is a nature-based ingredient solutions company with over 85 years of experience working with food, beverage and consumer products manufacturers worldwide. We unlock nature-powered success by applying ingredient innovation and problem solving to develop customized solutions that leverage our regional insights, meet manufacturers' goals and address consumer preferences.

- **Unique Portfolio.** Produces extensive range of high-quality, plant-based and fermentation-derived ingredients to formulate tailored solutions.
- **Technical Excellence.** Offers strong collaboration with a global team of scientists and applications experts, leveraging our regional state-of-the-art R&D facilities.
- **Sustainability.** Committed to providing responsibly sourced and produced ingredients.
- **Market Insights.** Understands market and consumer trends to help customers create relevant and innovative products.



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* Subject to local regulations and certifications; designations may not apply in all countries.

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