PRODUCT DATA SHEET

CPKelco
A HUBER COMPANY

KELTROL® ADVANCED PERFORMANCE XANTHAN GUM

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Description

KELTROL ADVANCED PERFORMANCE provides superior functionality in an 80-mesh format and is suitable for use in food preparations and personal care applications.

Features and Benefits

KELTROL ADVANCED PERFORMANCE provides a number of significant performance upgrades due to characterization of functional attributes.

- significantly improved low shear rate viscosity provides enhanced stabilization of suspensions and emulsions
- characterized and highly reduced hydration time allows debottlenecking of production processes and improved consistency of finished products
- highly pseudoplastic system augments control of liquid flow and cling
- rapid hydration in and compatibility with high salt systems provides flexibility and increased viscosity vs. traditional xanthan

Dispersion/Hydration

KELTROL ADVANCED PERFORMANCE xanthan gum will hydrate in most hot and cold water-based systems, as it is completely soluble in both. Sifting dry **KELTROL ADVANCED PERFORMANCE** into water with sufficient agitation to bring about a physical separation of the particles allows composition of solutions. **KELTROL ADVANCED PERFORMANCE** can be pre-dispersed with a water miscible solvent, such as a glycol or a low molecular weight alcohol, or vegetable oil prior to being added to the water phase. **KELTROL ADVANCED PERFORMANCE** xanthan gum can likewise be pre-dispersed dry by mixing with a powder such as sugar before dispersion.

Standard Packaging

Packed in 25-kg multiwalled bags with polyethylene liners (21 CFR §177.1520). All packaging material complies with relevant UK, EU and US food contact legislation.

Ingredient/Labeling

KELTROL ADVANCED PERFORMANCE xanthan gum
Food grade xanthan gum, CAS: 11138-66-2; E415
For use as a stabilizer, thickener, or emulsifier
Kosher approved; Halal approved

Regulatory Information

Xanthan gum complies with requirements contained in the following regulations and standards: *Food Chemicals Codex*, 21 CFR § 172.695 (USA), *Canadian Food and Drug Law* (Item X.1, Table IV), JECFA, the purity criteria in the current EC Directive, 1829/2003/EC, and *Japan's Specifications and Standards for Food Additives.*

Storage Conditions/ Shelf Life

Store in a roofed and well-ventilated area in the unopened original package. Functional properties of the product are guaranteed to conform with the stated sales specifications for **1095 days** from the date of manufacture when stored under these conditions. Product quality should be re-evaluated prior to use if this "Best Before" date has been exceeded.

Quality System

Manufactured according to a Quality System registered to ISO 9001:2008.

KELTROL® ADVANCED PERFORMANCE XANTHAN GUM

Specifications

Property	Requirement	Test Method
Particle Size	Tyler Standard Screen	KTM004
- 80 mesh (180 μm)	Not less than 95% through	
Loss on Drying	6 – 13%	KTM003
Appearance	White to tan, uniform in appearance	
Powder Color	Not less than 70	KTM006
Hydration Rate, time to 90% torque		KTM266
- 1% gum in 1% NaCl	Not more than 4.0 min	
Viscosity		
- 1% gum in 1% KCl (60 rpm)	Not less than 1400 mPa·s (cP)	KTM017
- 0.25% gum in STW (3 rpm)	1700 – 2200 mPa·s (cP)	KTM091
- 0.25% gum in 10% NaCl (3 rpm)	Not less than 1400 mPa·s (cP)	KTM309
Viscosity Ratio	1.02 – 1.45	KTM017
Shear Ratio	Not less than 6.5	KTM017
Solution pH		KTM005
- 1% gum in DI water	For information only	
Residual Alcohol	Not more than 500 mg/kg (ppm)	KTM520
Bacteria*	Not more than 2,000 cfu/g	KTM800
Fungal Count (Total Yeast & Mold)	Not more than 100 cfu/g	KTM803
Coliform	Negative by Most Probable Number (MPN)	KTM801
Escherichia coli	Absent in 25 g	KTM802
Salmonella spp.	Absent in 25 g	KTM804

* Total viable mesophilic aerobic count, 48 hr incubation

Specifications – Guaranteed to Comply

Testing to the following specifications is conducted on a skip-lot basis and may not be reported on the Certificate of Analysis. Product is guaranteed by CP Kelco to comply with compendial requirements applicable for each property.

Property	Requirement	Test Method
Identity	Pass	KTM015
Pyruvic Acid	Not less than 1.5%	KTM524
Total Nitrogen	Not more than 1.5%	KTM516
Assay	4.2 – 5.0% CO_2 91.0 – 108.0% xanthan gum	KTM503
Ash	Not more than 16.0%	KTM255
Heavy Metals	Not more than 20.0 mg/kg (ppm)	KTM514
Lead	Not more than 2.0 mg/kg (ppm)	KTM514
Arsenic	Not more than 2.0 mg/kg (ppm)	KTM514
Mercury	Not more than 1.0 mg/kg (ppm)	KTM514
Cadmium	Not more than 1.0 mg/kg (ppm)	KTM514
Staphylococcus aureus	Absent in 1.0 g	KTM806
Pseudomonas aeruginosa	Absent in 1.0 g	KTM807
Xanthomonas campestris	No viable cells	KTM826

METHODS OF TESTING (For test methods not listed, follow the applicable compendium. Full details of test methods are available upon request)

Particle Size (KTM004)
Shake 50 g product on an 80-mesh (180 μm) Tyler Standard Screen for 10 min using a Cenco-Meinzer sieve shaker.

Loss on Drying (KTM003)
Spread 3-5 g product evenly on a tared weighing pan and weigh accurately. Dry in an oven at 105°C for 2½ hours. Cool in a desiccator and reweigh.

Appearance
Qualitative evaluation.

Powder Color (KTM006)
Test method is available upon request.

Hydration Rate (KTM266)
The time required to hydrate product at a concentration of 1% gum in a 1% sodium chloride solution, with Polyethylene Glycol (PEG 300) as a dispersing agent, is determined using CP Kelco's Solution Rate Tester. Test method is available upon request.

Viscosity and Shear Ratio

- **1% gum in 1% KCl (KTM017)**
  Slowly add a dry blend of 2.5 g product and 2.5 g KCl to 245 mL deionized water in a 400-mL beaker while stirring at 800 rpm using a low-pitched propeller-type stirrer. After stirring for 2 hours at 800 rpm, adjust the temperature of the solution to 25°C (77°F), and measure the viscosity using the LV model of the Brookfield viscometer at 60 rpm with a #3 LV spindle. Reduce the speed to 6 rpm and measure the viscosity - the shear ratio is calculated by dividing the 6 rpm viscosity by the 60 rpm viscosity.
- **0.25% gum in Synthetic Tap Water (KTM091)**
  Slowly add 0.75 g product to 299 mL Synthetic Tap Water (deionized water containing 1000 ppm NaCl and 147 ppm $CaCl_2 \cdot 2H_2O$) in a 400-mL beaker while stirring at 800 rpm using a low-pitched, propeller-type stirrer. After stirring for 2 hours, adjust the temperature to 25°C (77°F), and allow to sit undisturbed for 30 minutes. Do not stir. Measure the viscosity using an LV model of the Brookfield viscometer with a #1 LV spindle at 3 rpm after allowing the spindle to rotate for 3 minutes. If the viscosity is greater than 2000 cP, measure the viscosity on the 2.5x LVDV viscometer, using the same spindle and speed.
- **0.25% gum in 10% NaCl (KTM309)**
  Slowly add a blend of 5 g sugar and 0.5 g product to 199.5 mL 10% NaCl in a 250-mL beaker while stirring at 900 rpm using a low-pitched, propeller-type stirrer. After stirring for 1 hour, adjust the temperature to 25°C (77°F), and allow to sit undisturbed for 30 minutes. Transfer to a 200-mL beaker and measure the viscosity using an LV model of the Brookfield viscometer with a #1 LV spindle at 3 rpm after allowing the spindle to rotate for 3 minutes. For viscosities greater than 2000 cP, use the 2.5x LV.

Solution pH (KTM005)
Slowly add 3 g product to 297 mL deionized water in a 400-mL beaker while stirring at 800 rpm using a low-pitched, propeller-type stirrer. After stirring for 30 min, measure the pH of this solution using a pH meter.

NOTE: CP Kelco reserves the right to use company test methodology.

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