

KELTROL® CG-SFT XANTHAN GUM

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Description	KELTROL CG-SFT is a xanthan gum product with smooth-flow rheology that gives transparent solutions, designed specifically for use in cosmetics and other personal care products.
Features	<ul style="list-style-type: none"> • low-dusting, free-flowing powder • transparent solutions • less pseudoplastic (shear-thinning) solutions than those of conventional xanthan gum • shows relatively little viscosity change over a wide temperature range • stable over a wide pH range • compatible with high concentrations of salts and surfactants • stable to high-shear processes
Benefits	<ul style="list-style-type: none"> • ideal for use in formulations where high clarity is desired • enhances the stability of emulsions, suspensions and foams • products appear rich and smooth • easy to apply from the bottle or tube onto the body • smooth, silky and non-sticky when applied to the skin • thins during processing, then quickly recovers its viscosity
Typical Applications	<ul style="list-style-type: none"> • shower gels • liquid soaps • sunscreens • lotions and creams • eye make-up • hair care products • shaving creams and foams
Typical Use Level	0.2 to 1.0%
Dispersion/ Hydration	KELTROL CG-SFT xanthan gum will hydrate in most water-based systems because it is completely soluble in both hot and cold water. Solutions are usually made by sifting dry KELTROL CG-SFT into water with sufficient agitation to bring about a physical separation of the particles. If dispersion is a problem, KELTROL CG-SFT can be pre-dispersed with either a non-solvent or dry mixed with another powder prior to addition.
Standard Packaging	Packed in 25-kg double walled corrugated boxes with polyethylene liners (21 CFR §177.1520). All packaging material complies with relevant EU and US food contact legislation.
Ingredient/Labeling	<p>KELTROL CG-SFT xanthan gum</p> <p>Xanthan gum for cosmetic and personal care applications</p> <p>Food grade xanthan gum, CAS: 11138-66-2; E415</p> <p>For use as a stabilizer, thickener, or emulsifier</p> <p>Kosher approved; Halal approved</p>
Regulatory Information	<p>Xanthan gum complies with requirements contained in the following regulations and standards: <i>Food Chemicals Codex</i>, 21 CFR § 172.695 (USA), <i>Canadian Food and Drug Law</i> (Item X.1, Table IV), JECFA, the purity criteria in the current EC Directive, 1829/2003/EC, and <i>Japan's Specifications and Standards for Food Additives</i>.</p> <p>Xanthan gum meets the appropriate standards and specifications incorporated by reference in the following: 21 CFR §172.695; the Cosmetics, Toiletries and Fragrances Association's (CTFA) <i>International Cosmetic Ingredient Dictionary (ICID)</i>; the EC's <i>International Nomenclature of Cosmetic Ingredients (INCI)</i> (EINECS No. 234-394-2); Japan's <i>Comprehensive Licensing Standards Of Cosmetics By Category 1997</i> as Serial Number: 2590, Ingredient Code: 109058 as specified in <i>The Japanese Cosmetic Ingredients Codex (JCIC)</i>.</p> <p>Product is tested to ensure compliance with with USP <467> Residual Solvents, and the purity criteria defined in the monographs for xanthan gum in the current editions of the <i>National Formulary</i>, <i>Japanese Pharmaceutical Excipients</i>, and <i>European Pharmacopeia</i>.</p>
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.

Specifications

<u>Property</u>	<u>Requirement</u>	<u>Test Method</u>
Particle Size	Tyler Standard Screen Scale	KTM004
- 80 mesh (180 µm)	Not less than 95% through	
Loss on Drying	Not more than 15.0%	KTM003
Appearance	Off-white to yellowish-white, uniform in appearance	
Hydration Rate, time to 90% torque		KTM266
- 1% gum in 1% NaCl	For information only	
Viscosity		
- 1% gum in 1% KCl (60 rpm)	800 – 1300 mPa · s (cP)	KTM017
- 0.3% gum in 0.3% KCl (3 rpm)	250 – 600 mPa · s (cP)	KTM070
Viscosity Ratio	1.02 – 1.45	KTM017
Solution pH		KTM005
- 1% gum in DI water	6.0 – 8.0	
- 0.3% gum in 0.3% KCl	For information only	
Transmittance		KTM087
-1% gum in DI water (600 nm)	Not less than 85%	
Identification	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	KTM503
	91.0 – 108.0% xanthan gum	
Ash	6.5 – 16.0%	KTM255
Heavy Metals	Not more than 10.0 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
Isopropyl Alcohol	Not more than 500 mg/kg (ppm)	KTM520
Identification Test A	Guaranteed to comply with EP	
Organic Volatile Impurities	Guaranteed to comply with USP<467>	
Other Polysaccharides	Guaranteed to comply with EP	
Bacteria		KTM800
- 48 hours	Not more than 1,000 cfu/g	
- 5 days	Not more than 2,000 cfu/g	
Fungal (Yeast and Mold) Count	Not more than 100 cfu/g	KTM803
Coliform	Negative by Most Probable Number (MPN)	KTM801
<i>Escherichia coli</i>	Absent in 25 g	KTM802
<i>Salmonella</i> spp.	Absent in 25 g	KTM804
<i>Staphylococcus aureus</i>	Absent in 1.0 g	KTM806
<i>Pseudomonas aeruginosa</i>	Absent in 1.0 g	KTM807
Total Aerobic Plate Count	Not more than 1,000 cfu/g	USP <61>
Total Yeasts and Molds	Not more than 100 cfu/g	USP <61>
<i>Escherichia coli</i>	Absent in 1 g	USP <62>
<i>Salmonella</i>	Absent in 10 g	USP <62>
<i>Candida albicans</i>	Absent in 1 g	USP <62>

* Total viable mesophilic aerobic count

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 minutes using a Cenco-Meiner 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.

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**- 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.

- 0.3% Gum in 0.3% KCl (KTM070)

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, transfer 90.0 g of the solution to a 400-mL beaker and dilute with 210 mL deionized water. Stir as above for 10-15 minutes, adjust the temperature of the solution to 25°C (77°F), and measure the viscosity using the LV model of the Brookfield viscometer at 3 rpm with a #1 cylindrical spindle.

Solution pH (KTM005)**- 1% Gum in DI Water**

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.

- 0.3% Gum in 0.3% KCl

Use a pH meter to measure the pH of the 0.3% solution used in the viscosity method, above.

Transmittance (KTM087)

Slowly add 2 g product to 198 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, centrifuge the solution at 3,000-4,000 rpm for 10 minutes. Measure the transmittance using a Bausch and Lomb Spectronic 215, or other suitable spectrometer, at 600 nm. Use deionized water as the 100% transmittance standard.

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

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