

KELCOGEL[®] CG-LA GELLAN GUM

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Description	KELCOGEL CG-LA gellan gum is a unique gelling agent for use in personal care applications. KELCOGEL CG-LA gellan gum can be used to form gels, modify textures, stabilize formulations (including emulsions and suspensions) and create films.
Features	<ul style="list-style-type: none"> • “fluid gels,” for use in stabilizing suspensions, can be made at very low use levels • higher use levels will result in the formation of firm and brittle gels • gels are transparent, mechanically robust and exhibit substantial hysteresis (i.e., the set temperature is always lower than the melt temperature) • monovalent ions result in gels that will re-melt, while gels made with divalent ions yield thermally stable gels • gels are stable over a wide pH range • compatibility with anionic, amphoteric and non-ionic surfactants • easily combined with most other rheology modifiers
Typical Applications	<ul style="list-style-type: none"> • shampoo and haircare products • skin lotions and creams • sunscreen and sun care products • emulsion stabilizer • suspension stabilizer • non-dissolving cosmetic films • toothpaste
Typical Use Level	KELCOGEL CG-LA gellan gum forms gels at use levels as low as 0.05%. Gel strength can be increased by manipulating both gum and ion concentration. KELCOGEL CG-LA gellan gum can be used to form fluid gels at concentrations between 0.025% and 0.1%.
Dispersion/Hydration	Model gels are produced by adding KELCOGEL CG-LA gellan gum to deionized water under shear, heating to 65 – 90°C, adding ions and cooling to set. Both monovalent and divalent ions can be used: K ⁺ , Na ⁺ , Ca ⁺⁺ and Mg ⁺⁺ . Sequestrants such as sodium citrate or phosphates will allow hydration at lower temperatures.
Standard Packaging	Packed in 25-kg Leverpak drums (or their equivalent) with polyethylene liners (21 CFR §177.1520). All packaging materials comply with relevant UK, EU, and United States food contact legislation.
Ingredient/Labeling	KELCOGEL CG-LA gellan gum Food grade gellan gum, CAS: 71010-52-1; E418 For use as a stabilizer, thickener, or emulsifier Kosher approved; Halal approved
Regulatory Information	Product is manufactured to food GMPs and is tested to ensure compliance with USP <467> Residual Solvents, and with the purity criteria defined in the monograph for gellan gum in the current edition of the <i>National Formulary</i> . Gellan gum is listed as being approved for use in cosmetic applications in the following regulations and standards: EC’s <i>International Nomenclature of Cosmetic Ingredients</i> (INCI) (EINECS No.275-117-5); the Cosmetics, Toiletries and Fragrances Association’s (CTFA) <i>International Cosmetic Ingredient Dictionary</i> (ICID).
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 730 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 - 42 mesh (355 µm)	Tyler Standard Screen Scale, Ro-Tap Not less than 97% through	KTM146
Loss on Drying	Not more than 15.0%	KTM003
Appearance	White to tan, uniform in appearance	
Solution pH - 1% gum in DI water	For information only	KTM005
Transmittance - 0.5% gum in 6 mM CaCl ₂ (490 nm)	Not less than 76%	KTM087
Gel Strength, Curdmer	For information only	KTM126
Identification	Pass	KTM519
Assay	3.3 – 6.8% CO ₂	KTM503
Ash	4.0 – 14.0%	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 3.0 mg/kg (ppm)	KTM514
Isopropyl Alcohol	Not more than 750 mg/kg (ppm)	KTM520
Bacteria*	Not more than 1,000 cfu/g	KTM800
Fungal (Yeast and Mold) Count	Not more than 100 cfu/g	KTM803
Coliform	Negative by 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 viable mesophilic aerobic count, 48 hr incubation

METHODS OF TESTING (Full details of test methods are available upon request)

Particle Size (KTM146)

Shake 50 g product on a 42 mesh (355 µm) Tyler Standard Screen for 20 minutes using a Ro-Tap 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.

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.

Transmittance (KTM087)

Slowly add 1.50 g product to 250 g deionized water in a tared 400-mL beaker while stirring at 600-800 rpm. Heat to 70-75°C (158-168°F) and hold at this temperature for 15 minutes with continued stirring. Pipet 4.8 mL of a calcium chloride solution (prepared by dissolving 37.755 g CaCl₂ · 2H₂O in 1 L of deionized water) into the heated solution and continue mixing for 1 to 2 minutes. Using deionized water at 80°C (176°F), adjust the weight of the solution to 301 g and mix for 30 seconds. Measure the transmittance of this solution using a Bausch and Lomb Spectronic 215, or other suitable spectrometer, at 490 nm. Use deionized water as the 100%

transmittance standard. **Note:** After adding the solution to the cuvette, allow to cool to room temperature (approximately 1 hour) before measuring the transmittance.

Gel Strength (KTM126)

Test method is available upon request.

Identification (KTM015), Assay (KTM503), Ash (KTM255)

Follow the procedures given in the current edition of the *National Formulary*

Heavy Metals, Lead, Arsenic (KTM514)

Follow the procedures given in the fourth or current edition of *Food Chemicals Codex*.

Isopropyl Alcohol (KTM520)

Follow the procedure given in the current edition of the *Food Chemicals Codex*.

Bacteria (KTM800), *Staphylococcus aureus* (KTM806), *Pseudomonas aeruginosa* (KTM807)

Follow the procedures as given for microbial limit tests in the current edition of the *United States Pharmacopoeia*.

Coliform (KTM801), Fungal (Yeast and Mold) Count (KTM803)

Follow procedures as given for microbial limits in the current edition of the U.S. Food and Drug Administration's *Bacteriological Analytical Manual for Foods*.

Salmonella spp. (KTM804), *Escherichia coli* (KTM802)

Test method is available upon request.

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

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www.cpkelco.com



e-mail: solutions@cpkelco.com

The Americas
CP Kelco
800-535-2687 phone
678-247-2752 fax

Europe/Middle East/Africa
CP Kelco France SARL
+33 (0) 1 49 03 78 00 phone
+33 (0) 1 49 03 78 29 fax

Asia Pacific
CP Kelco Singapore Pte. Ltd.
+65 6491 9100 phone
+65 6491 9101 fax