

# Texture Modification



## *Hydrocolloids*

Univar provides a selection of hydrocolloids that allow food technologists the capability of formulating products that meet taste, appearance, stability and preparation needs of customers. The texture of a food product is one of the key components to consumer satisfaction.

Food technologists and manufacturers today are challenged to develop and process foods and beverages that meet various customer needs. From the processing line to the kitchen table, food products are exposed to factors that influence performance and eating qualities. Food gums supplied by Univar are selective in performance and enhance positive elements that consumers expect in products. Univar suppliers are all leaders in the industry with a history of product quality, customer service and technical support.

Whether you are designing a new product or manufacturing a tried and true standard, Univar can provide the right hydrocolloid to make your product successful. In all areas of R&D and manufacturing, be it product development, line extensions, cost reductions or processing efficiencies, Univar has the stabilizer product or system for you.

Our sales professionals work directly with you to tailor a range of services and products that fit the way you do business.

*fresh*  
**ideas**

Univar Food Ingredients

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## Hydrocolloids

The selection of a hydrocolloid to modify texture requires consideration of final gel character and the properties of the food product (pH, ionic strength, acidity, temperature and a variety of processing conditions). This chart will support your efforts in characterizing the ingredient options.

Preservative	pH Range	Solubility @ 70F	Solubility @ 150F	Effect of Ion or Salt on Hydrated Gum	Gel Character	Acid Stability	Functionality	Applications
Xanthan	1-13	Yes	Yes	None	None (gels with locust bean gum)	Precipitation in milk (pH <4.5)	Thickens, suspends, emulsion stability, freeze thaw stability, syneresis control	Bakery, dressings, sauces, frozen foods, beverages
Gellan Gum	1-13	No	Yes	Required for gel	Rigid/cuttable/cohesive	Stable in acid conditions	Gelation, fluid gels, suspension	Confections, fruit jellies, jams, non-standard jams, fillings, beverages
Methocel®*	3-10	Yes	No	None	Rigid/cuttable	Stable in acid conditions	Creaminess, foam stability, freeze thaw stability, thermal gelation	Baking, toppings, sauces, beverages, extruded foods, prepared foods, vegetarian burgers
Carrageenan Kappa Iota Lambda	4-10 4-10 4-10	No No Yes	Yes Yes Yes	K+ gels Ca++ gels None	Rigid/cuttable Cohesive/thixotropic None (thickener)	Solutions undergo hydrolysis at pH 3.5; gel is stable	Gelation, milk protein reactions, syneresis control, thickeners	Ice cream, chocolate milk, meats, desserts, bakery, beverages, puddings
Pectins	2-7	No	Yes	HM**; none LM**; Ca++ gels	Rigid/cuttable Cohesive/thixotropic	Stable gels formed	Gelation, thickens, protein stabilization Gelation, stabilization	Jelly, jams, beverages, acid milk drinks, confections
Locust Bean	4-10	No	Yes	None	None (gels with XG)	Stable at pH 5-8	Moisture control, heat shock resistance	Cream cheese, ice cream
Guar	4-10	Yes	Yes	None	None	Gradual decline at pH 3.5-10	Thickens, freeze thaw stability	Sauces, dressings, ice cream, bakery
CMC***	4-10	Yes	Yes	Decreases viscosity	None	Stable at pH 7-9. < vis at pH 5 precipitates in milk (<pH 3;> 6)	Thickens, suspends, film former	Syrups, dressing, sauces, batters, beverages, pet food
Gum Arabic	2-10	Yes	Yes	None	None	Stable	Emulsifier and emulsion stabilizer	Beverages, confections
Alginates	3.5-10	Yes	Yes	Ca++ required for gel	Rigid/cuttable/cohesive/thixotropic	Gels at pH 3.5 with calcium present	Gelation and thickens, secondary emulsifier in beverages and in foam stability	Desserts, structured foods, bakery fillings, dressings
Gelatin	4.5-10	Yes	Yes	None	Cuttable/elastic	Stable	Gelation	Dessert gels, capsule
MCC****	3-10	Yes	Yes	None	None	Insoluble	Stabilizes foams and emulsions	Reduced fat products, prepared foods, sauces

All gums come in a variety of granulation/mesh sizes to meet processing needs. Most gums are good to excellent for clarity of solutions. Exceptions: guar, LBG.

\* Methocel is a trademark of The Dow Chemical Company.

\*\* High Methoxyl and Low Methoxyl

\*\*\* Carboxyl Methyl Cellulose

\*\*\*\* Microcrystalline Cellulose

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