

Hydrocolloid	Source	Brief Description	Functionality	All Natural	How to Functionalize	pH Tolerance	Solution Property
Acacia	Acacia Tree	Tree exudate, highly branched polymer	Fiber, emulsifier, encapsulating agent, mouthfeel enhancer	Yes	Cold water soluble. Disperse well & hydrate	2-10	<300 cP @25%
Agar	Red Seaweed	Linear galactan, forms helices and 3D helical aggregates	Gel former without the need for ions. Gels are thermoreversible	Yes	Heat to 80-100C and cool	2.5-10	Firm & brittle gel @1%
Gellan	Fermentation	High acyl or low acyl, linear, anionic heteropolysaccharide	HA gellan forms fluid gels and suspend particles. LA gellan gels with ions	Yes	Heat to ~85C and cool	4-10	4000-7300 cP @0.25%
Guar	Guar Seeds	Linear galactomannan with average G:M ratio of ~1:2	Thickener, synergistic thickening with Xanthan	Yes	Cold water soluble. Disperse well & hydrate	4-10	3000-5500 cP @1%
HM Pectin	Apple and Citrus	Fruit extract-High methoxy pectin	Thickener, heat to form a gel at low pH and high solids	Yes	Cold water soluble. Disperse well & hydrate	2-7	<1500 cP @4%
LM Pectin	Apple and Citrus	Fruit extract-Low methoxy pectin	Thickener, gels with Ca	No	Cold water soluble. Disperse well & hydrate	2-7	1000-1500 cP @4%
Inulin	Chichory roots or Agave plant	Mostly linear fructan with some branching	Fiber, low viscosity solution makes suitable for most applications	Yes	Cold water soluble. Disperse well & hydrate	4-9	"Chichory <100 cP @20% Agave <30 cP at 20%"
Iota Carrageenan	Red Seaweed	Moderately sulphated, linear galactan.	Forms thermoreversible, deformable gels upon cooling	Yes	Heat to ~80C and cool	4-10	Soft gel @1%
Kappa Carrageenan	Red Seaweed	Low sulphated, linear galactan	Forms thermoreversible gels upon cooling. K+ enhances gel strength. Suspending agent for beverages	Yes	Heat to ~80C and cool	4-10	Firm gel @1%
Lambda Carrageenan	Red Seaweed	Highly sulphated, linear galactan	Thickener, mouth feel enhancer, Forms gels with milk proteins	Yes	Cold water soluble. Disperse well & hydrate	4-10	<850 cP @1%
Konjac	Konjac tubers	Glucomannan with an average G:M ratio of ~1:2	Thickener, Forms irreversible gels at pH>8. Synergistic gelling with Xanthan	Yes	Cold water soluble. Disperse well & hydrate	4-10	15000-36000 cP@1%
Locust Bean	Carob Tree Seeds	Galactomannan with average G:M ratio of ~1:4	Thickener, mouthfeel enhancer. Synergistic gelling with Xanthan	Yes	Heat to ~75C and cool	4-10	2000-4000 cP@1%
Sodium Alginate	Brown Seaweed	Polymer with stiff & flexible regions of gluronic & mannuronic acids	Gel former. Forms irreversible gels with cations	Yes	Cold water soluble. Disperse well & hydrate	3.5-10	<800 cP @ 0.25%
Starch	Corn, Potato, Tapioca, Rice etc	Versatile & cost effective thickener. Chemically or physically modified. Complementary functionality with gums	Thickener, gelling agent, emulsifier, fiber	No	Heat to 80-90C. Cold water soluble forms available	4.5-8	Concentration and modification dependent
Tara	Tara Tree Seeds	Galactomannan with average G:M ratio of 1:3	Thickener, synergistic gelling with Xanthan	Yes	Partially cold water soluble. Heat to ~75C and cool	4-10	4500-6000 cP @1%
Xanthan	Fermentation	Linear, rigid glucan with ability to form rod-like double helices	Thickener, synergistic with Guar (thickening), LBG and Konjac (gelling)	Yes	Cold water soluble. Disperse well & hydrate	1-13	1200-2000 cP @1% in KCl
Celluloses	Cotton or wood pulp	Linear glucan typically substituted with Methyl, Hydroxypropyl or Ethyl groups	Versatile functionality, depending on the substitution	No	Cold water soluble. Disperse well & hydrate	4-10	up to 15000 cP

**Not sure which gum or starch to use? Seeking Clean Label options? Want expert training on hydrocolloids?
Consult the Gum Dr. for all your ingredient and on-site/on-line training requirements**

www.us-sgi.com

www.linkedin.com/in/erhan-yildiz-ba8a4a3

erhan@us-sgi.com

908-552-9599



Most hydrocolloids are clean-label ingredients, close to nature, minimally processed and on the approved lists for Whole Foods, Panera Bread, and Kroger. Hydrocolloids processing typically involves traditional methods like grinding, separation based on density, drying and fermentation. They have various grades with different physical properties and performance in end use applications.

Erhan Yildiz - The Gum Dr.

20+ years experience- ingredient development + functionality, and finished product formulation.

Industry reputation - highly responsive and supportive partner with a product agnostic policy.

Industry partners - supported by companies with ingredient, manufacturing, documentation and regulatory knowledge.



Portfolio

SGI has a very broad portfolio of clean label ingredients including, LBG, Guar, Tara, Acacia, Starch, Carob protein, Carob powder, Xanthan, Pectin, and total solutions.

Product agnostic - offering the best solution for you.

One stop shop for texturizers, stabilizers and other clean label food ingredients.

Not sure which gum or starch to use? Seeking Clean Label options? Want expert training on hydrocolloids? Consult the Gum Dr. for all your ingredient and on-site/on-line training requirements

\$/lb	\$/kg	\$/kg	\$/lb
1 \$/lb	2.204 \$/kg	1 \$/kg	0.45 \$/lb
5 \$/lb	11.02 \$/kg	5 \$/kg	2.27 \$/lb
10 \$/lb	22.04 \$/kg	10 \$/kg	4.54 \$/lb
15 \$/lb	33.06 \$/kg	15 \$/kg	6.80 \$/lb

conversion shortcuts if you are toggling between \$/kg and \$/lb

lb	kg	g	Oz
0.250	0.11	113	4.0
0.500	0.23	227	8.0
1.000	0.45	454	16.0
2.204	1.00	999	35.3
55.10	25.00	25000	**
50.00	22.70	22686	**

conversion shortcuts if you are toggling between lb, kg, g and Oz

°F	°C	°F	°C
32	0	32	0.0
50	10	40	4.4
77	25	100	37.8
122	50	160	71.1
167	75	180	82.2
212	100	200	93.3

conversion shortcuts if you are toggling between F and C