

Summary Grid of FMC BioPolymer Ingredients used as Gelatin Alternatives in Food

Category	Application	Products	Recommended Use Level (%)	Ingredient Attributes	Bulletin Number	Finished Product Benefits/Attributes
Confections	Caramel Candies and Coatings	Viscarin® SD 389	0.05 - 0.2%	<ul style="list-style-type: none"> • Easy to disperse and hydrate 	CNF-31	<ul style="list-style-type: none"> ■ Controls flow properties ■ Controls oil-off on candy surface ■ Produces a smooth, creamy mouthfeel ■ Caramel sets to a non-sticky texture
	Gummy Candies	Gelcarin® SA 911 Gelcarin DG 6611 Gelcarin XP 3490	1.3 - 1.7% 1.3 - 2.1% 2.2 - 3.0%	<ul style="list-style-type: none"> • Firm, short texture • Less firm textures • Elastic textures 	CNF-30	<ul style="list-style-type: none"> ■ Creates innovative products and textures ■ Quick setting ■ Decreased stickiness to teeth ■ Excellent shelf stability
	Nougat Style Confections	Novagel® GP 2180 Avicel-plus® LM 310	0.6% 1.0%	<ul style="list-style-type: none"> • Excellent foam stabilizer • Shorten texture 	CNF-33	<ul style="list-style-type: none"> ■ Improves aeration for a light, smooth nougat ■ Excellent foam stability ■ Controls cold flow properties ■ Imparts a short texture and reduced stickiness ■ Imparts body and mouthfeel
Desserts	Mousse, Instant	Protanal® VPM	0.6 - 1.0%	<ul style="list-style-type: none"> • Creamy, high overrun mousse • Rapid setting, high stability 	GEL-26	<ul style="list-style-type: none"> ■ Excellent dispersability and cold solubility ■ Provides very crisp, creamy and full-bodied textures ■ High overrun with a homogeneous air distribution ■ Quick thickening and viscosity build-up in cold milk
		Avicel-plus® MV 3550	1.5 - 1.7%		GEL-05	
	Mousse, RTE	Protanal XP 3493	0.7 - 1.3%	<ul style="list-style-type: none"> • Cold addition • Hot addition • Adds structure and creaminess • Low process viscosity 	Concept Bulletin	<ul style="list-style-type: none"> ■ Provides a firm and crisp texture ■ High overrun obtainable ■ No resting time required before whipping ■ Excellent foam stability: Improved transport and storage stability even at elevated temperatures
		Protanal XP 3505	0.4 - 0.6%			
		Lactogel™ FC 3263	0.25 - 0.35%			
	Water Dessert Gels, Dry Mix	Gelcarin DX 4268	0.8 - 1.1%	<ul style="list-style-type: none"> • Elastic textures 	GEL-21	<ul style="list-style-type: none"> ■ Rapid gelling ■ Does not require refrigeration to gel ■ Excellent flavor release ■ Controlled syneresis ■ Simple to prepare ■ Ambient stable
		Gelcarin DX 5268	1.2 - 1.5%			
Protanal XP 3495		1.0 - 1.5%	<ul style="list-style-type: none"> • Cold prepared gels 	Concept Bulletin		
Water Dessert Gels, RTE	Gelcarin DG 654B Gelcarin DG 764B Gelcarin DG 425B	0.7 - 1.0%	<ul style="list-style-type: none"> • Firm, clear gels • Firm, not-clear gels • Softer, clear gels 	GEL-22	<ul style="list-style-type: none"> ■ Offers a wide range of gel textures ■ Sets within 15-20 minutes without refrigeration ■ Maintains gel structure without refrigeration ■ Controls syneresis to allow the gel to be easily removed from mold ■ Good flavor release 	
	Gelcarin XP 2080 Gelcarin XP 3455 Gelcarin DG 474B	0.7 - 1.0%				<ul style="list-style-type: none"> • Elastic, not-clear gels • Firm elastic, with konjac

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Other	Bakery Marshmallow	Novagel® GP 2180 Gelcarin® GP 379	2.0% 0.5%	<ul style="list-style-type: none"> • Imparts bake stability • Foam stability and gel structure 	CNF-10	<ul style="list-style-type: none"> ■ Excellent bake stability ■ Imparts air cell stability and white color ■ Improved texture
	Low Fat Spreads	Protana® SP 3240	0.6 - 1.0%	<ul style="list-style-type: none"> • Easy to disperse and hydrate 	DGS-09	<ul style="list-style-type: none"> ■ Efficient emulsion stabilization ■ Smooth texture and creamy mouthfeel ■ Good compatibility with milk proteins ■ Low viscosity and calcium sensitivity
	Yogurt	Protanal CP 0155	0.25 - 0.5%	<ul style="list-style-type: none"> • Easy to use • Compatible with starch, allowing for a wide range of textures 	CLT-01	<ul style="list-style-type: none"> ■ Imparts a good body and short texture ■ Produces a smooth yogurt ■ Desirable sheen ■ Excellent flavor release ■ Process friendly