

FUNCTION: THE VITAL INGREDIENT

Manufacturers of functional ingredient continue to develop products that allow confectionery companies to impart a range of desirable properties to their products.

The development of new confectionery products is increasingly tied to the innovative work of functional ingredient suppliers. Improvements in these ingredients, and their judicious use in processed confectionery, can allow brand owners to offer a range of exciting new products to consumers. Consistent and reliable functional ingredients are key to any effective manufacturing process.

FMC Biopolymer has developed an impressive reputation, not only as a supplier of the industry's broadest range of hydrocolloid products, but as a partner to brand owners across the food processing industry. FMC can offer partners a broad array of services to aid their development of new products, from product and applications development, through formulation and prototyping, to processing and manufacturing support.

CARRAGEENAN BLENDS

FMC Biopolymer develops and customises blends of carrageenan to function as gelling agents, stabilisers, texturants, thickeners and viscosifiers. The results are a wide range of functional benefits in products, including excellent moisture binding capabilities, suspension of insoluble particles through extended storage, gelation capabilities at ambient and refrigerator temperatures, controlled flow properties and modification of textures to meet the needs of formulators.

Viscarin SD 389, one of the company's carrageenan products, is ideal for use in caramel confectionery and coating production. Viscarin SD 389 can help maintain flow properties and prevent oil-off on the confectionery surface. In finished products, it produces a smooth, creamy mouth feel. Caramel manufactured using Viscarin SD 389 sets quickly to a non-sticky texture, decreasing stickiness both on product wrappers and on consumers' teeth. It offers clean flavour release and is heat stable during ambient storage.

In caramel confectionery production, FMC Biopolymer recommends that manufacturers use Viscarin in a roughly 1:1000 ratio with sugar. The Viscarin should be dry blended with around 1 per cent of the total sugar to be used, before being dispersed into sweetened condensed milk and pre-heated to 71–82°C. The

Viscarin/milk mix can then be added to the other prepared and heated ingredients and cooked at 113–116°C until it tests as a medium stiff ball. Once ready, this basic caramel mix can be mixed with vanilla flavour, salt and butter flavour and either formed into a final confectionery shape or applied as a coating or layer.

MICROCRYSTALLINE CELLULOSE

FMC Biopolymer's Avicel family of microcrystalline cellulose (cellulose gel) products function as stabilisers, texturants, thickeners and suspending agents. They offer the unique property of mimicking the mouth feel properties of fat, which is highly beneficial when formulating lower- and no-fat foods. In water, with shear, microcrystalline cellulose forms a three-dimensional matrix comprised of millions of insoluble microcrystals that form an extremely stable, thixotropic gel. Avicel microcrystalline cellulose functions at any temperature and provides superior freeze/thaw and heat stability to finished products.

In nougat-style confection production, Avicel should be dispersed in water using a high shear mixer for five to ten minutes. A separate dry blend of powdered sugar, egg white solids and whipping agent should then be prepared. The Avicel dispersion should then be added to the dry blend and mixed for one minute, and the mixture then left to hydrate for a further five minutes. Once hydrated, corn syrup should be added and whipped to a stiff peak.

A separate mix of corn syrup, sugar and water should then be prepared and heated to 135°C. The two mixes can then be combined and stirred using a paddle attachment until a uniform mix is achieved. After a final addition of cocoa, the mixture can be transferred to a cooling slab and cut or extruded into the desired size or shape. ■

Company profile

FMC Biopolymer offers a full range of functional ingredients and capabilities to the global food industry.