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Cargill is an international producer and marketer of food, agricultural, financial and industrial products and services. Founded in 1865, the privately held company employs 130,000 people in 63 countries.

Cargill helps customers succeed through collaboration and innovation, and is committed to applying its global knowledge and experience to help meet economic, environmental and social challenges wherever it does business. For more information, visit www.cargill.com.



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Life is Sweeter

> Sweeteners



MALTIDEX™
MALTITOL



Ending the sweetness conflict

Sweetness in food is universally associated with pleasure and enjoyment. It is also, traditionally, linked with full carbohydrates such as sucrose, glucose and fructose. In modern society there's an increasing conflict between our emotional response to sweetness, and the perception that we must manage energy payloads associated with full carbohydrates. The growing desire to maintain good oral hygiene and simply to manage weight as part of a healthy lifestyle only heighten the tension.

Maltidex™ maltitol is a polyol sweetener that has only 60% of the calories in sugar, but which resembles sugar extremely closely in taste, functional properties and ease of working.

As a truly indispensable component in chewing gum, a means to manufacture healthier chocolate, and the staple of many other confectionery, bakery, dairy and ice-cream products, Maltidex™ maltitol is an extremely versatile ingredient.

Backed by the manufacturing excellence, supply chain sophistication and application know-how you would expect from Cargill, Maltidex™ maltitol allows health conscious consumers to eat a little bit more of what they fancy.

The perfect sugar replacer

Maltidex™ maltitol and sucrose are nearly identical in molecular weight, and electron microscopy reveals very similar crystalline structures. This leads to Maltidex™ maltitol providing a very close match with the mouthfeel, texture and bulking properties of sugar. In most food manufacturing processes, crystalline Maltidex™ maltitol can be substituted for sucrose and Maltidex™ maltitol syrup can be substituted for glucose syrup, usually with little or no adjustment required.

Unlike sugar, crystalline Maltidex™ maltitol does not undergo Maillard reactions (browning) and melts at a slightly lower temperature (approx 150 °C), which may contribute to enhanced shelf life.

In solution as a syrup, Maltidex™ maltitol crystallisation is stable even at low temperatures ($\geq 55^{\circ}\text{C}$ for Maltidex™ maltitol high purity syrup) and high dry substances, leading to very good transport and storage properties.

Tasting Maltidex™ maltitol

Maltidex™ maltitol possesses a clean, pleasant natural sweetness, with a relative sweetness up to 90% that of sugar in its crystalline form.

Because it is so sweet, Maltidex™ maltitol does not need to be combined with high intensity sweeteners to deliver the sweetness expected in sugared products. Its natural, sweet taste provides a very stable flavouring substrate and does not mask fruity flavours.

Maltidex™ maltitol has excellent flavouring properties and flavour release characteristics, and significantly improves texture, mouthfeel

and taste profile in variety of food applications.

Unlike some polyols, Maltidex™ maltitol does not exhibit a pronounced cooling effect, and in syrup form it can display a high degree of non-volatile humectancy which can limit water activity in finished products.

Nutritional properties

Toothfriendly

Maltidex™ maltitol are slightly or not fermented by oral bacteria and therefore can assist in the maintenance of good oral health when combined with a system of good oral hygiene.

Slow energy release and lower calories

Traditional sweetening carbohydrates like sucrose (sugar) and glucose are rapidly digested and absorbed into the bloodstream, delivering their full energy payload immediately and triggering an immediate rise in blood glucose levels.

Polyols like Maltidex™ maltitol, on the other hand, are absorbed incompletely in the small intestine, and through a much slower two-stage process, providing their food energy to the body over a more extended period.

Polyols have a lower caloric value than conventional sugars. Caloric value of maltitol differs according to individual country's regulation.





Low glycaemic index

Because they are digested through a slow enzymatic hydrolysis process, polyols do not cause a significant increase in serum glucose, which is why Cargill Maltidex™ maltitol has a lower glycemic and insulinemic index than sucrose. Confectionery made with maltitol can, thus, be enjoyed by people concerned with managing their sugar intake.

Gut management

Low digestible carbohydrates, such as polyols pass into the large intestine where studies have shown they are a welcome food for gut flora (bacteria), favouring saccharolytic anaerobes and aciduric organisms in the colon. These in turn produce short chain fatty acids that are beneficial to gut acidity and digestive functions, and have been shown to improve health in the colonic epithelium. (Source: G. Livesey, Health potential of polyols as sugar replacers, with emphasis on low glycaemic properties. Nutrition Research Reviews (2003), 16: pp 163-191).

Digestive tolerance issues

Unabsorbed polyols can have osmotic effects in the colon causing a laxative reaction. Tolerance may vary between individuals and depends on frequency and average intake. A daily dose of 30 to 50g/day of Maltidex™ maltitol is usually well tolerated by adults when spread over the day.

Product Features

Sorini plant has two types of maltitol syrups which are differentiated with their maltitol content

Maltidex™ maltitol 71340 contains minimum, 50% maltitol (on DS base) and high portion of hydrogenated oligosaccharide (> 40%) with small portion of D-sorbitol (< 8%).

- > Due to its high portion of hydrogenated oligosaccharide, Maltidex™ maltitol 71340 has higher viscosity, higher bodying agent character, and low hygroscopic
- > Applicable in Hard boiled sugar-free candy and lozenges with excellent transparent appearance without crystallization symptom in long storage time. Anyhow, the additional certain portion of isomalt or mannitol may also improve its “byte and chewy-ability characters”. The mannitol adding is also may improve the drying period of deposit candy.

Maltidex™ maltitol 71345 contains minimum, 75% Maltitol (on DS base) and medium portion of hydrogenated oligosaccharide (< 20%) with small portion of D-sorbitol (< 8%).

- > Due to its medium portion of hydrogenated oligosaccharide, Maltidex™ maltitol 71345 has medium viscosity, proportional bodying agent character, high hygroscopic or strong humectants agent, better transparency and in certain application has smooth “spread-ability”.

Applications

- > Chewing gum
- > Chocolate
- > Chewy candies
- > Gelatine gums
- > Gum Arabic pastilles
- > Hard candies
- > Lozenges
- > Cereal snacks
- > Frozen dairy desserts
- > Bakery



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