

Head Office
10 Goddard Crescent
Cambridge, ON N3E 0A9

Office Phone
844.279.4401

Email
info@blendtek.com

Website
blendtek.com

Mono and Diglycerides

What are they?

[Mono and diglycerides](#) are a class of emulsifiers widely used in the food industry. Chemically, they are glycerol molecules with one or two fatty acids attached produced from vegetable oils. There are different kinds of monoglycerides and diglycerides commercially available such as distilled monoglycerides or glycerol monostearate, and the term "monoglycerides and diglycerides" encompasses all of them whether they are a single molecule or a blend. Mono and diglycerides are used in the food industry for their ability to enhance texture, shelf-life, stability and overall appeal. They can complex with other molecules such as gluten to strengthen dough, starch to prevent staling from starch retrogradation, and both water and fats to stabilize emulsions.

Where are they used?

Mono and diglycerides are used as emulsifiers in various types of food.

Bakery - helps improve the texture and volume, and contributes to a finer crumb structure of breads and rolls. Also used to improve the texture, moistness, and shelf life of cakes and pastries.

Dairy - helps to prevent the formation of ice crystals in ice cream, leading to a smoother texture. Also assists in maintaining a uniform consistency and improving the mouthfeel for creams and cream-based sauces.

Fats and Oils - helps in maintaining consistency and improving spreadability of margarine and shortenings.

Confectionery - improves the texture and prevents fat bloom of chocolates and candies

Frosting, Fillings and Whipped Toppings - contributes to a smoother texture and mouthfeel. Stabilizes air bubbles in whipped toppings

Beverages - helps in creating a creamy texture and preventing separation in non-dairy creamers. Also used to stabilize emulsions in ready-to-drink products such as meal replacement beverages.

Prepared Foods - helps in maintaining a homogenous mixture and improves the texture in salad dressings, sauces and gravies. Assists in preventing the separation of oil and water phases in mayonnaise, nut butters and spreads.

Variations and Selection Criteria

Several quality parameters are crucial in determining the effectiveness of mono and diglycerides:

Form: Mono and diglycerides are available as plastic, powdered, hydrated and distilled. The processing conditions of the food manufacturer dictate which form is required.

Melting point: This controls the physical state of the product.

Monoglyceride content: Commercially available products vary from 40% to 95% monoglyceride content.

Degree of unsaturation: This affects the stability and shelf-life of the product.

Crystalline form: Mono and diglycerides can exist in alpha and beta forms, with the alpha form being the most functional in bakery products.

BLENDTEK

Head Office

10 Goddard Crescent
Cambridge, ON N3E 0A9

Office Phone

844.279.4401

Email

info@blendtek.com

Website

blendtek.com

Hydrophilic/lipophilic balance (HLB): Mono and diglycerides possess lipophilic character and therefore have low HLB numbers (3-6).

Sustainability: Mono and diglycerides are derived from vegetable sources including palm, so they may be RSPO Certified as either mass balance or segregated.

As mentioned above, there are many ingredients that fall within the category of mono and diglycerides such as Distilled Monoglycerides (DMG), Diacetyl tartaric acid esters of monoglycerides (DATEM), Glycerol monostearate (GMS), Propylene glycol monoesters (PGME), and Lactic acid ester of mono and diglycerides (LACTEM).

Conclusion

In conclusion, mono and diglycerides play an important role in the food manufacturing industry. Their versatile properties as emulsifiers, their ability to improve the texture and shelf-life of food products, and their role in enhancing the quality of bakery products underscore their importance. There are various options available, and selecting the best product for your application requires the expertise of your partners at Blendtek. Contact us today for help with your project.

BLENDTEK

Head Office

10 Goddard Crescent
Cambridge, ON N3E 0A9

Office Phone

844.279.4401

Email

info@blendtek.com

Website

blendtek.com