

Guar Gum

Guar Gum, also called guaran, is a galactomannan. It is primarily the ground endosperm of guar beans. The guar seeds are dehusked, milled and screened to obtain the guar gum. It is typically produced as a free-flowing, pale, off-white-colored, coarse to fine ground powder.

Uses of Guar Gum :

1. Industrial applications:

- Textile industry – sizing, finishing and printing
- Paper industry – improved sheet formation, folding and denser surface for printing
- Pharmaceutical industry – as binder or as disintegrator in tablets
- Oil and gas drilling, hydraulic fracturing, Mining, Hydroseeding etc.

2. Food applications

- In dairy products, it thickens milk, yogurt, kefir, and liquid cheese products, and helps maintain homogeneity and texture of ice creams and sherbets
- In condiments, it improves the stability and appearance of salad dressings, barbecue sauces, relishes, ketchup and others.



Pharmaceuticals



Chewing gum



Bakery



Flavor(Soft Drink)



Confectionary



Cough Syrup



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Gum Arabic



Gum Arabic, also known as gum acacia, char gund, char goond or meska, is a natural gum made of hardened sap taken from two species of the acacia tree; *Acacia senegal* and *Acacia seyal*. The gum is harvested commercially from wild trees throughout the Sahel from Senegal and Sudan to Somalia, although it has been historically cultivated in Arabia and West Asia. Gum arabic is a complex mixture of polysaccharide and glycoprotein that is used primarily in the food industry as a stabilizer.

Gum Arabic is the hardened sap of the *Acacia senegal* tree, which is found in the swath of arid lands extending from Senegal on the west coast of Africa all the way to Pakistan and India. Just as Arabic numerals acquired their name because Europeans learned of them from the Arabs — who had picked them up from India—so too do we owe the name of Gum Arabic not so much to its origins, but to Europe's early trading contacts with the Middle East.



Organic Acacia Gum influences us in more ways than one in today's world. Gum Arabic or Acacia Gum is one of the most precious gifts of nature and influences us more than we can ever realize. An organic fiber, Organic Acacia Powder is traditionally produced through a handmade method. It is technically the sap of group of shrubs and small trees that are grown primarily in the warmer regions of the earth like the Tropics and the Subtropics. With an increase of its popularity in today's world, Acacia is being cultivated in almost all countries.

Uses of Gum Arabic

Gum Arabic is important ingredient in soft drink syrups, "hard" gummy candies such as gumdrops, marshmallows, chocolate candies and edible glitter, a very popular, modern cake-decorating staple. For artists, it is the traditional binder used in watercolor paint, in photography for gum printing, and it is used as a binder in pyrotechnic compositions.



Chewing Gum:

Sugar-free gum sweetened with xylitol has been shown to reduce cavities and plaque. The sweetener sorbitol has the same benefit, but is only about one-third as effective as xylitol. Xylitol is specific in its inhibition of *Streptococcus mutans*, bacteria that are significant contributors to tooth decay. Xylitol inhibits *Streptococcus mutans* in the presence of other sugars, with the exception of fructose. Daily doses of xylitol below 3.44 grams are ineffective and doses above 10.32 grams show no additional benefit. Calcium lactate added to toothpaste has reduced calculus formation.

Flavor (Soft Drink):

Gum arabic is also used in sweeteners and as an additive in foods and beverages, as a thickener in liquids, including soft drinks & in food flavorings.



Pharmaceuticals:

Only small quantities of gum arabic are used in pharmaceuticals. These uses depend upon its emulsifying, suspending, demulcent or coating characteristics. The gum maintains suspensions of insoluble when use in rather high concentrations. Owing to its mild ability to complex heavy metal ions, it brings about better suspension of these salts when needed, as for example, in the suspension of calamine lotion, and in certain instances in the emulsification of liquid petrolatum and of cod liver oil. Its demulcent property has given it some application in pharmaceutical syrups where it also masks unpleasant tastes.



Gum Accacia Powder



Gum Arabic imparts the lowest viscosity to water of then normal, unhydrolyzed industrial gums, A comparison of its solution viscosity with tragacanth karaya, ghatti, and corn fiber gums is shown in figure 1. Gum Arabic mixes well with other industrial gums, and at high concentrations has suspending, stabilizing, and emulsifying properties. Gum Arabic solutions exhibit Newtonian viscosity at concentrations up to 40%; but at higher concentrations, they acquire pseudo plastic character. Normally, Gum Arabic solutions are of pH about 4.5-5.5, which is near pH 6, where maximum viscosity is displayed. Solution viscosity decreases with age, following a zero rate order.

This decrease is commonly due to hydrolysis; but Gum Arabic solutions are affected, as are solutions of other gums, by ultraviolet radiation and other glycosidic bond-breaking phenomena. Viscosity rises with increases in pH to about 6 then gradually falls to about pH 12, where it again levels off. However, a more or less broad maximum viscosity is displayed over the range pH 2-10. As expected, when the pH is lowered to 3 or less, the ionization of the carboxyl groups is repressed, and the polymer tends to gel and lose solubility.

Flow Chart

Imported Crude / Pack Gum Arabic in Various sizes and Colour.

Imported Gum Graded size wise like 60 mesh 1.5 m.m
2.5. m.m., 8 m.m. and 12 m.m.

1.5 m.m. size and up to 2 m.m., 2.5. m.m. Colour Sorted
In Colour Sorting Machine and large size manually.

Gum Arabic is ready after Packing

This Gum Arabic Cleaned and Colour Sorted is Then Pulverized in
120 to 150 mesh and Sieved to make is Gum Accacia Powder.

Final Packing of Accacia Powder.



Properties

Solubility : Gum Arabic is readily soluble in cold water and can yield solutions up to 55% concentration.

Film - Forming : Gum Arabic's superb film-forming properties make it ideal for some confectionery coatings and lithographic plate solutions.

Emulsifier : Gum Arabic produces highly stable emulsions making it very useful in the preparation of oil-in-water food flavour emulsions, particularly for citrus oils.

Colour : Colourless to pale straw colour.

Taste : Gum Arabic has no off-taste. The taste of flavoring products co-spraydried with Gum Arabic is not affected or dulled by Gum Arabic as the carrier.