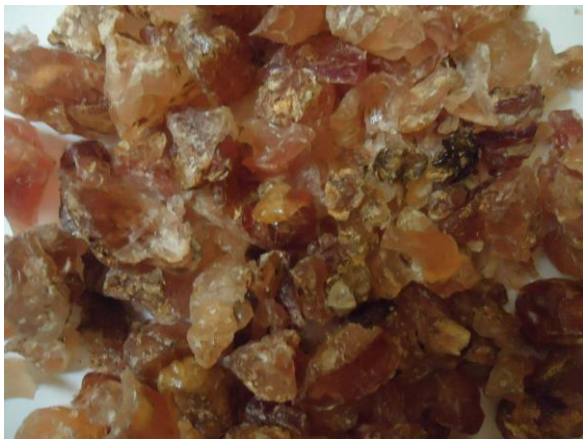
# Gum Karaya



Gum Karaya is a vegetable gum produced as an exudate by trees of the genus *Sterculia*. Chemically which as a food additive it has E number E416. It is also an acid polysaccharide composed of the sugars galactose, rhamnose and galacturonic acid. It is used as a thickener and emulsifier in foods, as a laxative, and as a denture adhesive.

**DEFINITION**

A dried exudation from the stems and branches of *Sterculia urens* Roxburgh and other species of *Sterculia* (Fam. *Sterculiaceae*) or from *Cochlospermum gossypium* A.P. De Candolle or other species of *Cochlospermum* (Fam. *Bixaceae*); consists mainly of high molecular-weight acetylated polysaccharides, which on hydrolysis yield galactose, rhamnose, and galacturonic acid, together with minor amounts of glucuronic acid.

**C.A.S. number**

9000-36-6

**DESCRIPTION**

Unground product: occurs in tears of variable size and in broken irregular pieces having a characteristic semi-crystalline appearance; pale yellow to pinkish brown; translucent and horny

Powdered product: pale grey to pinkish brown; a distinctive odour of acetic acid. Items of commerce may contain extraneous materials such as pieces of bark which must be removed before use in food.

Unground samples should be powdered to pass a standard ISO sieve of 355 µm (USA No. 45) and mixed well before performing any of the following tests.

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| **FUNCTIONAL USES** | Emulsifier, stabilizer, thickening agent |
| **Solubility** | 2g added to 50 ml of water swells to form a granular, stiff, slightly opalescent gel which is acid to litmus; insoluble in ethanol |
| **Swelling by ethanol solution** | Karaya gum swells in 60% ethanol distinguishing it from other gums |
| **Gum constituents** | Proceed as directed under *Gum Constituents Identification* using the following as reference standards: galactose, rhamnose, galacturonic acid, glucuronic acid, mannose, arabinose and xylose. Galactose, rhamnose galacturonic acid, and glucuronic acid should be present and mannose, arabinose and xylose should be absent. |

**PURITY**

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| **Loss on drying** | Not more than 20% (105$^{o}$, 5 h) |
| **Total ash** | Not more than 8% |
| **Acid insoluble ash** | Not more than 1% . |
| **Acid insoluble matter** | Not more than 3% |

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| **Volatile acid** | Not less than 10%, calculated as acetic acid. |
| **Starch** | Not detectable |
| **Microbiological criteria (Vol.4)** | *Salmonella* spp.: Negative in 1 g<br>*E. coli*: Negative in 1 g |
| **Lead** | Not more than 2 mg/kg |