

# SOUTHERN HYDROCARBONS

## PRODUCT APPLICATION SHEET

**PRODUCT NAME: Tapioca Starch**

### MAIN USE

Starches are basically carbohydrates, known as polysaccharides, i.e., multiple molecules of sugar. For commercial use, they are derived from a variety of cereals like rice, wheat, sorghum, corn and tubers like potato, tapioca, sweet potato, etc. Internationally popular forms of starch are mostly derived from corn and tapioca due to their easy availability.

Due to a peculiar phenomenon called gelatinisation – an irreversible swelling of starch granules when treated with hot water, starch turns into a thick paste. When cooled and with certain additives, it forms a gel. This gives it high viscosity which forms the basis of its many uses.

### SPECIAL FEATURES

Tapioca starch is used in varied industrial as well as commercial applications. Its uses are so diverse that it can be found in almost all kinds of industries ranging from paper, textile, food and furnishings.

Tapioca starch is a thickener and stabilizer that is used in puddings, breads, sauces, fruit pies and meat products. It does not lose its quality even on reheating and freezing. When tapioca starch is used as a thickening agent, it completely becomes clear and dissolves completely.

Tapioca is extracted from the roots of *Manihot esculenta* plant. These plants are popularly known as cassava plants that grow in a form of a bush. Roots of this plant are 8 cm thick 91 cm long where as the plant itself is about 8 ft tall. Tapioca is a Tupi word that means the process through which starch is made edible. Another advantage of using tapioca starch is that it is free from gluten as well as protein. .

- Tapioca starch has excellent binding capacity so used in adhesive industry. After mixing it with water, it becomes quite sticky and remains like this for a long period of time. Industrial glues are also made from the high quality tapioca starch.
- It is used as filler in compounded animal feed.
- Tapioca starch is extensively used in many textile processes. It is required during sizing of yarn and also for finishing cotton as well as polyester fabrics. Also it is used while producing textile during its process of mixing, printing and finishing. During the process of mixing it is used as a sizing agent. Tapioca starch is also used as a finishing agent to make the fabric smooth. Also it makes the colors of the fabric very sharp and durable.
- Tapioca starch is extensively used in many kinds of confectioneries as thickeners, gelling agent, for foam strengthening as well as film foaming and glazing. Low viscosity tapioca starch is used in jellies and gums. While casting, powdered starch is used as a mould release.
- Tapioca starch is used in place of sucrose in beverages.

Apart from this Tapioca starch is used in many other non-food industries. It is used as binding agent in explosive industry. In paper industry, the tapioca starch is used for filler retention, internal sizing, surface sizing and paper coating. Also it is used in the production of diapers and women sanitary products. In construction industry, tapioca starch is used to bind concrete block, clay, limestone, plywood. It is also used as paint filler in construction industry.

## CHARACTERISTICS AND SPECIFICATIONS

S.No.	PARAMETERS	SPECIFICATION
1	Appearance	Fine Free Flowing White Powder
2	Moisture Content	13.0 % max
3	Ash Content	0.20 % max
4	Acid Insoluble Ash	0.05 % max
5	pH of 10% slurry	5.0 - 7.0
6	Sulphur dioxide	50 ppm max
7	Viscosity of 5% solution in Brook field viscometer at 50° c sp no.2 ,20 rpm	1500 cps min
8	Viscosity of 2% solution in Red wood No. 1 viscometer, measured at 75°c	50 sec min
9	Particle Retention on 100 mesh	1.0 % max
10	Fiber Content	1.0 ml max
11	Acid factor 0.1 N H <sub>2</sub> SO <sub>4</sub>	3 ml max
12	Free Acidity[0.1N NaOH]	1.5 ml max