

# **Applications of Tapioca Starch as a Composite Raw Material in Other Industries**

## **Textile Industry**

Tapioca starch is used in the textile industry. In yarn sizing, starch is applied in to coat the yarns to obtain glossy and smooth thread. It is also used as a lubricant in preventing the single yarns from disintegrating during in-line loom weaving. In addition, starch is used in printing cloth more even while printing. Some factories are still using imported modified starch for weaving because its property is more suitable. Domestic mills, however, started manufacturing modified starch used for weaving.

## **Plywood Industry**

Tapioca starch is applied in the plywood industry because glue is used in plywood binding. Starch, therefore, is used as a raw material for making glue because of its adhesive properties. It is applied to the wood in a stiff, strong and durable way. Plus, it is a way to reduce the cost of making glue because the presence of 50% starch in the glue is used as the component. Starch, moreover, has a special property, that is, the powder is fine so it does not leave any precipitate when it is mixed to make glue.

## **Paper Industry**

In producing paper, pulp derived from pine, bamboo, and eucalyptus wood is used. In the stage of processing the pulp into sheets, the sheets won't be smooth until they are coated with starch. The tapioca starch solution will not only increase the smoothness of the sheet surface but also fill up the pores on the sheets, making the sheet harder for ink or color penetrate. Besides, adhesive in the starch remaining in the finished paper increases the paper strength.

## **Glue Industry**

Starch is filled with a special capacity, that is, when is heated or exposed to chemicals, it will afford high viscosity and stays sticky and stable over a very long period of times. However, only pure tapioca starch with low acid levels

called dextrin is used to make glues. These glues will be applied in envelopes, stickers, gummed paper and gummed tape.

## **Food and Beverage Industries**

Starches are basically carbohydrates but tapioca starch plays other important roles in food industry, that is, it serves as a food thickener, stabilizer, binder and filler. Moreover, starch is easy to buy and low in price. It is therefore used to produce glucose, dextrose, baby food, bread, instant confectionery, pie fillings, canned food, noodle, beverages, ice cream, jam, canned fruit, yogurt, sausages, Chinese sausages, sauce, soda for making sweets, and so on.

Seasoning Sauces and Canned Food The paste properties of starch are used to thicken seasoning sauces such as ketchup and canned food so that it won't become precipitates. About 3-4% of the food weight contains starch. Cross-linked and hydroxypropylated instant starches are used in seasoning sauces and canned food whereas confectioneries use hydroxypropylated instant starch due to its solid content properties.

Ice Cream Softness and freezing are characteristics of ice cream. Thus, gum starch is added as the ice cream stabilizer owing to its high-water holding capacity. Apart from its applications in food and beverage industries, tapioca starch is also one of the ingredients for animal compounding, especially as a binder in eel food which contains pregelatinized alpha starch.



Reference :  
THAI TAPIOCA DEVELOPMENT INSTITUTE  
1168/26 Lumpini tower 15th floor Rama IV Sathorn Bangkok 10120  
Tel: 679-9112-6  
Fax: 679-9117