

# **Starch & its Derivatives**

**[The Complete Technology Book on Starch and Its Derivatives](#)**

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Starch is a group of poly saccharides, composed of glucopyranose units joined together by glucosidric linkages. Starch is also metabolized for energy in plants and animals, and is used to produce a large number of industrial products. Starch is processed to produce many of the sugars in processed foods. The biggest industrial non food use of starch is as adhesive in the paper making process. Other important fields of starch application are textiles, cosmetic and pharmaceutical uses. Starch can be obtained from maize, sorghum, roots and tubers such as tapioca, arrow root, potatoes etc. Starch truly serves as a multifunctional ingredient in the food industry. Starch is one of the most present biomaterials has witnessed significant developments over the years. By products are obtained in the manufacture of different types of starch such as maize gluten has a number of interesting possible uses in industry, zein (by product of corn processing) is used in the preparation of stable glass like plastics, modification of zein is used as adhesives and in the preparation of coating compositions for paper, the most important by product from wheat starch manufacture is gluten which is used in preparing diabetic foods, for feeding cattle, thickening agent in textile printing and so on. The Global starch market is likely to get respite from deceleration in its market growth, with growth poised to receive a new lease of life in the next few years. This book basically illustrates about the properties, structures, manufacturing process explained with flowcharts and diagrams, applications of starch and its derivatives etc. The major contents of the book are structure and chemical properties of starch, chemical composition, molecular structure, starch granule properties, water sorption and granule swelling as a function of relative humidity, factors affecting starch paste properties, the oxidation of starch etc. This is a unique book, concise, up to date resource offering a valuable presentation of the subject. This book contains processes of starch and its derivatives. This book is an invaluable resource for new entrepreneurs, industrialists, consultants, libraries.

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## **[Handbook on Maize \(Corn\) Processing and Manufacture of Maize](#)**

**Products**

**Author:** P. K. Chattopadhyay

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Handbook on Maize (Corn) Processing and Manufacture of Maize Products (Oil, Starch, Corn Steep Liquor, Syrup, Cornmeal, Popcorn, Flakes, Gluten, Husk, Anhydrous Dextrose, High Maltose Syrup, Maltodextrin Powder, Monohydrate Dextrose, Sorbitol, Ethanol, Cattle Feed with Manufacturing Processes, Equipment Details and Plant Layout) In India, maize is becoming third most significant crop. Its significance stems from the fact that it is utilised not only for human food and animal feed, but also for corn starch manufacturing, corn oil production, and the generation of baby corns. Additionally, maize stover, the leaves and stalk of the maize plant, is used for forage, biofuel production, and chemical production. Corn is also processed into a multitude of food and industrial products including:-

- Corn Starch is a yellow powder made from finely ground, dried corn, while cornstarch is a fine, white powder made from the starchy part of a corn kernel.
- High fructose corn syrup (HFCS) is a sweetener derived from corn syrup, which is processed from corn.
- Corn oil contains some healthy components like vitamin E and phytosterols, but overall it's not considered a healthy fat.
- Corn ethanol is produced from corn biomass and is the main source of ethanol fuel, mandated to be blended with gasoline in the Renewable Fuel Standard.
- Some strains of corn (*Zea mays*) are cultivated specifically as popping corns.
- Dextrose Anhydrous can be used as sweetener in baked goods, candies, gums, dairy products like some ice-creams and frozen yogurts, canned foods, cured meats etc.
- Maltose is a sugar that tastes less sweet than table sugar. It contains no fructose and is used as a substitute for high-fructose corn syrup.
- Maltodextrin is a white powder made from corn. To make it, first the starches are cooked, and then acids or enzymes such as heat-stable bacterial alpha-amylase are added to break it down further.
- Dextrose is the name of a simple sugar made from corn that's chemically identical to glucose, or blood sugar.
- Sorbitol, or glucitol as it is sometimes called, is a slow-metabolizing sugar alcohol derived from fruits, corn and seaweed.

The global maize market is expected to grow at a CAGR of 3.8%. The factors that affect the demand for starch mainly include population growth and industrial development of a country; specifically the food and beverage, textiles, paper and printing, pharmaceuticals and other health and beauty products, and

adhesives. The demand for high-fructose corn syrup (HFCS) sweeteners across the country is majorly due to its wide usage in the confectionery, bakery, and beverage industries, especially soft drink manufacturing. Rising health awareness among consumers has resulted into increasing preference for corn oil due to its health benefits. More ethanol production means more demand for corn. According to the most recent statistics released by the U.S. Department of Agriculture, 35%, or 5.25 billion bushels, of the projected 15.062 billion bushels of corn harvested will be processed into ethanol. The book covers a wide range of topics connected to Maize Products, as well as their manufacturing processes. It also includes contact information for machinery suppliers, as well as images of equipments. A complete guide on Maize (Corn) Processing and Manufacture of Maize Products manufacture and entrepreneurship. This book serves as a one-stop shop for everything you need to know about the Maize manufacturing industry, which is ripe with opportunity for manufacturers, merchants, and entrepreneurs. This is the only book that covers Maize (Corn) Processing and Manufacture of Maize Products in depth. From concept through equipment procurement, it is a veritable feast of how-to information.

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