# Global Demand Patterns for Starches

## Producers, Products, Markets, Supply, Demand

## 2011 – 2015 (UPDATE OF THE SUCCESSFUL 2008/9 STUDY)

**INTRODUCTION**

Starch is a major building block of modern industry and its production and use continue to expand unabated in areas with strong economic growth. As a truly global business, the starch industry faces serious challenges trying to balance the large and mature markets of EU and USA with the young and rapidly expanding industries in Asian and S. American countries.

In the paper, board and textile sectors, native and modified starches compete strongly with the traditional petrochemical synthetics. Within the processed food industry, both native and modified starches are used ever more extensively, the former mainly as bulking agents and the latter as texturising agents. The strong variations in commodity prices in the last few years have also had a major impact on the starch industry.

After witnessing a constant growth scenario for over 40 years, the starch industry is facing major competitive challenges. The last few years have been a dramatic period for the global starch industry. The strong interest in biofuels has changed global biomass demand which is ratcheting up raw material prices while, at the same time, the fast growing Asian economies are rapidly expanding starch processing capacity. Paper and textiles have been moving rapidly to more southern low-cost producing countries and in the processed food industry, the point of gravity is gradually shifting to Asian markets. In addition, changing consumer preferences and the impact of the nutrition and health trend are fundamentally modifying the demand from the food industry. These and many more factors are adding momentum to these changes which the global starch industry is facing for the first time in its entire life cycle. Giract has already published a major and seminal global starch demand study in 2008/9, but the situation in the industry has changed dramatically. Hence, following clients' requests to closely follow these significant market changes, Giract has re-established the global demand scenario for starches.

As a key player wishing to find new opportunities in the changing global markets for starches, this demand study will help you in charting the new strategy of your organization.

**OBJECTIVES**

- To estimate current demand for native and selected modified starches across sectors and by key country
- To describe the structure of the important end-product sectors in each key country
- To understand demand dynamics in sector/region through discussions with major players in both supply and demand sectors
- To identify native and modified starch production by key producer/country
- To estimate supply by country taking into account production and trade patterns
- To provide forecasts for native and selected modified starches by key sectors/regions.

**PRODUCTS**

Native starches, dextrins, oxidised starch, thin-boiling starch, pregelatinised products, starch esters, starch ethers, physically modified starches, amylopectin starches.

**MARKETS**

Paper/board, textile, adhesives, other non-food, confectionery, bakery, processed foods, and other food sectors where modified starches are used as thickeners.

**GEOGRAPHICAL**

Global, with focus on EU, USA, China, Thailand, Indonesia, India, Brazil, Russia.

**TIMESCALE**

Current: 2011, demand forecasts: 2015.

**PUBLICATION**

May 2012.

For more info, contact

GIRACT
24, Pré-Colomb
1290 Versoix/Geneva
Switzerland

V. Krishnakumar, Jo Goossens
Tel: + 41 22 779 0500
Fax: + 41 22 779 0505
info@giract.com
www.giract.com

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## SIMILAR TABLE OF CONTENTS FOR EACH REGION, BEING:

**BRAZIL**

**CHINA**

**EU**

**INDIA**

**INDONESIA**

**RUSSIA**

**THAILAND**

**USA**

# Global Patterns of Starch Demand

## Producers, Products, Markets, Supply, Demand

## 2011 – 2015

Sample pages. NB: numbers have been edited out

May 2012

GIRACT

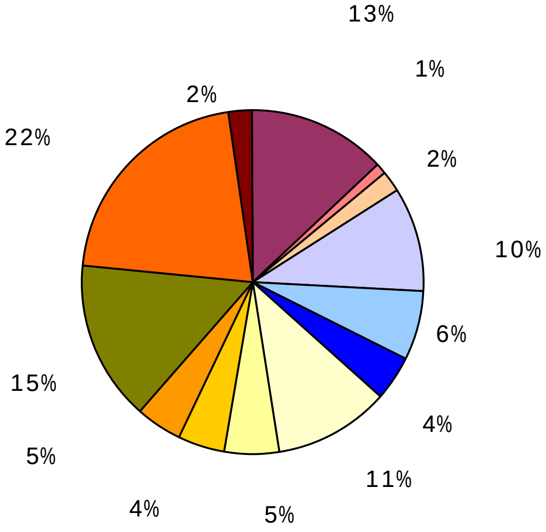

| | |
|---|---|
| Website: | www.giract.com |
| Email: | info@giract.com |

**Native and modified starch demand by region – 2011**

| Country/Region | Total native | Total modified | Total |
|---|---|---|---|
| EU27 | | | |
| Russia | | | |
| Other Europe | | | |
| USA | | | |
| Other N.America | | | |
| Brazil | | | |
| Other Latin America | | | |
| China | | | |
| India | | | |
| Indonesia | | | |
| Thailand | | | |
| Other Asia Pacific | | | |
| Africa & Middle East | | | |
| **Total World** | | | |

Japan, Mexico, Taiwan, Egypt and Canada are the main importers of US corn.

**Native Starch Demand - 2011 ##regions edited out##**



## 2.6. LATIN AMERICA

Starch demand has seen quite an interesting development as Brazil has been driving the growth for the entire region. Total starch demand now stands at almost ## mio tons and continues to grow. The main change from 2008 is that tapioca starch demand has stagnated because of high prices following drought problems and thus growth is essentially in maize starch. Tapioca starch now represents only 28% of all native starch demand. Modified starches only represent about 22%, most of which is consumed in only 2 countries, Argentina and Brazil, the other countries still being in earlier stages of development and are only just starting to use more speciality products.

**Starch demand in Latin America 2011** **kt**

| Country/Region | Native maize | Native wheat | Native tapioca | Native potato | Other native | Total native | Cationic | Oxidised | Esters Ethers | Other modified | Total modified | Grand total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brazil | | | | | | | | | | | | |
| Other Latin America | | | | | | | | | | | | |
| **LATIN AMERICA** | | | | | | | | | | | | |

### 2.6.1. BRAZIL

The ratio of maize to tapioca starch produced in Brazil has moved from approximately 50:50 in 2008 to 60:40. Due to the lower availability of tapioca roots, a major price increase for tapioca starch was witnessed, which in turn, caused this switch in demand from native tapioca starch to native maize starch. With the high economies of scale in maize starch production, along with the planned capacity increases by major players as compared to the more fragmented and rural production of tapioca starch, the balance is likely to move even further in favour of maize in the future.

Compared to other Latin American countries, Brazil has a very high starch demand due to the traditional use of tapioca starch in home-cooking. Total demand is ## mio tons, of which about 76% is native, and of which 61% is maize and 39% tapioca.

The food industry, with 58%, is still the largest starch end-user due to typically local tapioca based products such as cheese bread and tapioca pancakes, and modified starch is mostly used by the paper industry. Despite Brazil's global competitiveness in pulp production, high taxes have prevented the paper industry from becoming more export driven and growth has essentially come from strong local demand. New investments have been announced which will significantly expand the demand for starches in the near future.

## 3.4. OTHER NON-FOOD USE

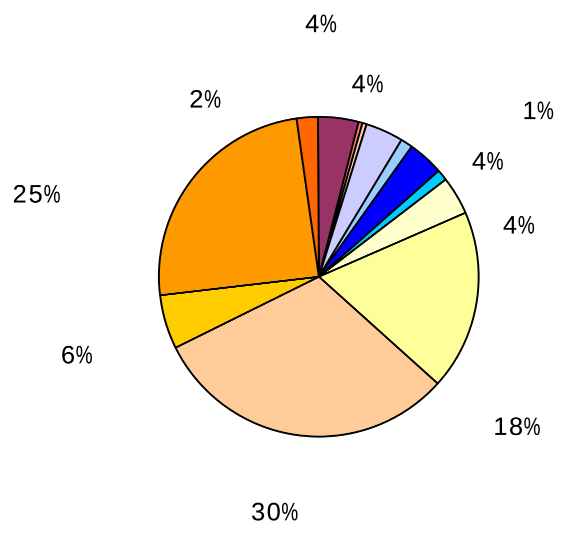
Textile and construction are the two most important non-food uses of starch after papermaking and corrugating, but starch is also used in a large variety of other applications:

- Oil drilling (drilling lubricant and suspension aid)
- Foundry (iron casting)
- Mining (metal ore separation)
- Adhesives (gummed tape, wallpaper, tube-winding)
- Pharmaceuticals (tablet excipient, instant powders)

The total starch demand in other non-food uses amounts to ## mio tons, with Asia accounting for 64%. Although for this analysis, Giract excluded, to the extent possible, any use of starch in fermentation (because it is not considered as a starch end-product) this figure may still be slightly overestimated due to some starch volumes used for fermentation, particularly in Indonesia and Thailand where these volumes are much smaller than in China and thus more difficult to identify.

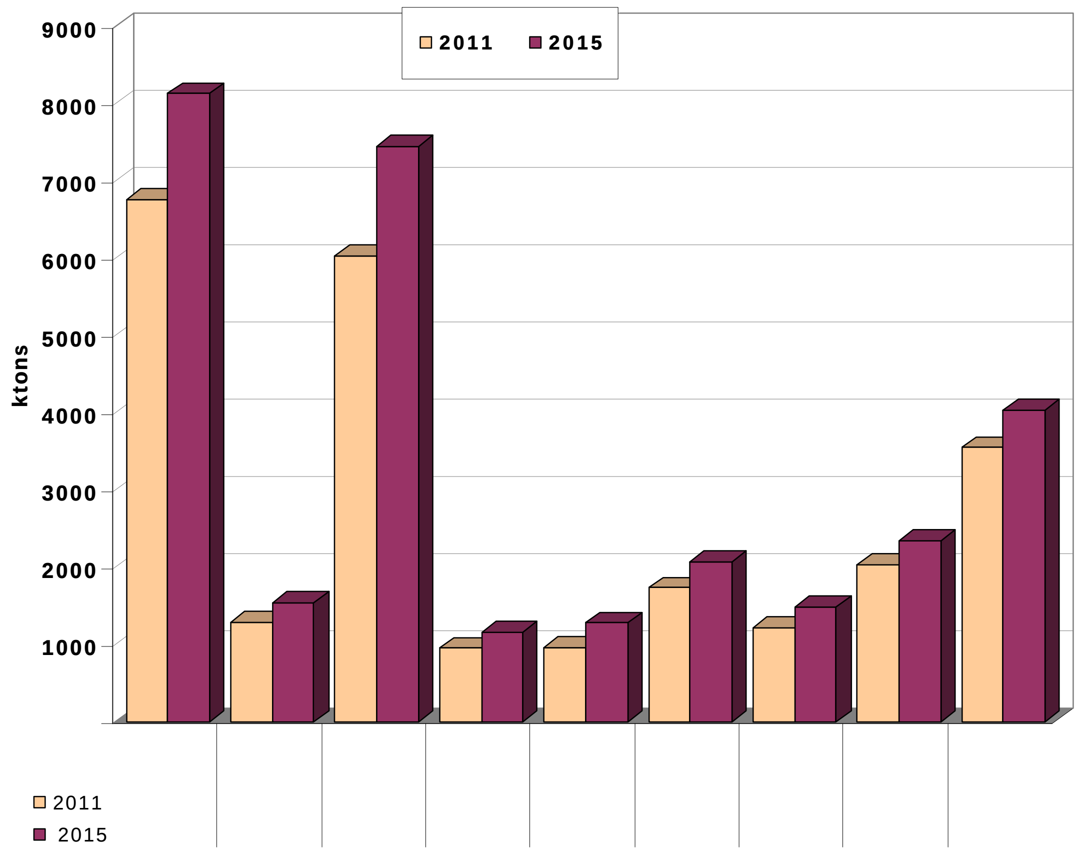
About ## mio tons could be identified in the textile sectors, essentially in Asia. In Europe and North America, most of the non-food demand is in construction (plasterboard, cement) and mining applications (oil drilling, mineral separation) and a large variety of minor applications.

**Starch Demand - 2011 ##regions edited out##**



Global demand for native and modified starches is thus expected to grow at different rates: #% p.a. through to 2015 for native starch and #% for modified starches. Of the major commodities, native tapioca is expected to grow fastest with #%, especially in Asia Pacific. Wheat and potato will also continue to grow but at a slightly slower pace than tapioca. In China, the boom in demand for potato starch (partly due to tapioca starch shortage) is expected to continue although from a very small base. Native maize starch will remain the most important native starch used despite a slightly lower growth rate of #% p.a.

In modified starch demand, most of the growth is expected in oxidised and cationic starch, especially in China and Asia due to strong growth in paper, corrugating and textile sectors. Esters, ethers and other modified starches, many of which are used in food in Western countries, are growing much slower as they are increasingly targets for replacement by more natural ingredients. ##types of starches edited out in chart##



## 5.5. FORECAST OVERVIEW

### Global starch demand forecast by end-use – 2015

| | Paper & Board | Corrugated | Other Non Food | Total Non Food | Processed Meat | Bakery | Noodles | Other food | Total food | Grand total |
|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | | | | | | | | | | |
| Other Europe | | | | | | | | | | |
| NAFTA | | | | | | | | | | |
| Latin America | | | | | | | | | | |
| China | | | | | | | | | | |
| Asia Pacific | | | | | | | | | | |
| Rest of World | | | | | | | | | | |
| **TOTAL** | | | | | | | | | | |

### Global starch demand forecast by type of starch – 2015 kt

| | Native maize | Native wheat | Native tapioca | Native potato | Other native | Total native | Cationic | Oxidised | Esters Ethers | Other modified | Total modified | Grand total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | | | | | | | | | | | | |
| Other Europe | | | | | | | | | | | | |
| NAFTA | | | | | | | | | | | | |
| Latin America | | | | | | | | | | | | |
| China | | | | | | | | | | | | |
| Asia Pacific | | | | | | | | | | | | |
| Rest of World | | | | | | | | | | | | |
| **TOTAL** | | | | | | | | | | | | |

## 2.2. PAPER/BOARD PRODUCTION AND CAPACITY

The largest part of capacity is located in Guangdong, Zhejiang, Jiangsu, Shanghai, Hebei and Shandong provinces.

### 2.2.1. OVERVIEW

Consolidation of the industry through merger and acquisition, the introduction of more hi-tech processes, new companies starting up, the average capacity increase of single lines and greater pollution control are proving strong competition for small and medium size paper producers. For these, cost reduction is a priority to survive and thus cost of raw materials, including starches, is a very sensitive issue.

### 2.2.2. PRODUCTION

**Production Capacity of Paper/Board**

mio tons

| | 2007 | 2011 | 2015 forecast |
|---|---|---|---|
| Newsprint | | | |
| Coated paper | | | |
| Printing & Writing paper | | | |
| Tissues | | | |
| Packaging paper | | | |
| White board | | | |
| Liner board | | | |
| Corrugating Medium | | | |
| Other. | | | |
| **Paper & board, total** | | | |

Capacity utilisation in 2011 is estimated to be #%.

Contrary to Europe and USA where the paper industry suffered greatly from the 2008/2009 recession, the downturn was much less pronounced in China where economic growth remained high at 7-8%.

## 6.6. SUGAR CONFECTIONERY

The category consists of chewing gum (essentially sugar-free and some bubble gums), hard and chewy candies (hard boiled sweets, toffees), gums and jellies (gummi bears, winegums, jellies, etc.), nougat and medicated sweets. The European sugar confectionery market is now dominated by Cadbury, both in the chewing gum and candy segments. Haribo is the unrivalled leader in gums and jellies. The segment however remains very fragmented with innumerable medium sized and very local players such as Storck, Vivil, BonBon, Ricola, Perfetti, Chupa Chups, etc. as compared to the chocolate and chewing gum segments.

Sugar confectionery is a declining market since it is not even growing in line with the population. In former recessionary periods, confectionery as a cheap indulgence product usually saw a slight boost in demand. This was not the case in the 2007 to 2011 period. Probably other indulgence products such as chocolate and ice cream have taken up that role.

**Estimated production of confectionery – EU27** kt

| | 2007 | 2009 | 2011 | 2015 forecast |
|---|---|---|---|---|
| Sugar confectionery | | | | |
| Gums | | | | |
| Chocolate | | | | |

**Top sugar confectionery producers in Europe - 2011**

| Company name | Market share |
|---|---|
| Cadbury | |
| Wrigley | |
| Leaf | |
| Others | |

### Starch consumption in sugar confectionery

Starch is no longer an important ingredient for sugar confectionery since moulding starch been entirely replaced by modern reusable tray depositing systems. Only in winegums has the traditional use of starch (thinned starch) prevailed in combination with gelatin. New products such as extruded gums were introduced in the late ‘90s to compete with more expensive gelatin gums such as gummi bears and with starch based gums and liquorice gums. Targeted towards the children’s market, these cheap products gained quickly popularity despite their less sophisticated texture and taste. Flour can also be partly used in these products but extruded gums now represent a sizeable market for the cheapest available wheat starch.

During the recession period textile production decreased but started to improve in the year 2011. The production of cotton fibres is increasing where as the man-made fibre production recorded a marginal fall and filament yarn production recorded a slight increase of 1.89% during 2011. Textile production covering man-made fibre, filament yarn and spun yarn is showing increasing trend.

Thus, overall textile production as well as the demand for starch in this industry is expected to follow an increasing trend in the future, although the preference for usage of cotton fibres in handloom textiles is decreasing slightly.

## 4.6. END-USER PERCEPTIONS

### 4.6.1. ALOK INDUSTRIES LIMITED

17/5/1, 521/1, Village Rakholi, Saily
Silvassa, the union territory of
Dadra and Nagar Haveli-396 230
Mumbai
Tel: +260 308 7000
Fax: +260 264 5289
www.alokind.com

**Company background and relevant products**

Alok was established in 1986 as a private limited company, with its first polyester texturising plant being set up in 1989. It became a public limited company in 1993. Over the years, it has expanded into weaving, knitting, processing, home textiles and garments. Grabal Alok Impex Ltd, operates in association with Alok industries.

**Company view on future of textile industry**

The industry is growing at 8-10% p.a., and both exports as well as the domestic market show a promising demand trend. Textile production covering man-made fibre, filament yarn and spun yarn shows an increasing trend.

**Starch use patterns**

The company uses modified maize starch (thin boiling as well as esterified starch) for textiles. Modified maize starch is preferred as compared to the other chemicals due to cost reasons. It is using around 2kt of modified starch annually. The specific reason behind the usage of starch is for weaving and providing a better quality to textile.

The volume of starch use is stagnant. The usage of modified starch has gone up significantly as compared to native starch in comparison with the past few years.

**Indonesia starch demand forecast – 2015** kt

| Sectors | Native tapioca starch | Other native starch (maize/ rice) | Total Native Starch | Cationic | Oxidised | Esters & Ethers | Other Modified Starch | Total Modified Starch | Total Starch |
|---|---|---|---|---|---|---|---|---|---|
| Paper & Board | | | | | | | | | |
| Corrugated/Adhesives | | | | | | | | | |
| Textile | | | | | | | | | |
| Fermentation | | | | | | | | | |
| Other non-food (+unofficial export) | | | | | | | | | |
| **Total non-food** | | | | | | | | | |
| Bakery | | | | | | | | | |
| Dairy | | | | | | | | | |
| Processed Meat | | | | | | | | | |
| Snacks | | | | | | | | | |
| Confectionery | | | | | | | | | |
| Noodle - Standard | | | | | | | | | |
| Noodle - Instant | | | | | | | | | |
| Traditional foods | | | | | | | | | |
| Sago pearl | | | | | | | | | |
| Other food | | | | | | | | | |
| **Total food** | | | | | | | | | |
| **Total starch demand** | | | | | | | | | |