

Note: Key data/information in this sample page is hidden, while in the report it is not.

1 Production of major sugar alcohols in China, 2006-2010

1.2 Overview of sugar alcohols' production

China has started the development of sugar alcohol industry since the 1970s, a little later than the intensive processing of starch. In the 1990s, the country only produced ■ tonnes of sugar alcohols per year. However, the industry has developed along with rapid development of economy and medicinal chemical technology in recent years.

Table 1.2-1 Output of major sugar alcohols in China, 2006-2010, tonne

Year	Sorbitol	Xylitol	Maltitol	Mannitol	Erythritol
2006	■	■	■	■	■
2007	■	■	■	■	■
2008	■	■	■	■	■
2009	■	■	■	■	■
2010	■	■	■	■	■

Source: CCM International

1.3 Major producers' information

1.3.1 Sorbitol

According to CCM International's investigation, ■ enterprises still produce sorbitol in China in 2011, while others have ever produced it before. By the end of April 2011,

- ■ producer stopped;
- ■ producers are idle;
- ■ producers are active.

Table 1.3.1-2 Production situation of major sorbitol producers in China, 2009-2010

No.	Abbreviation	Capacity '10, t/a		Output '10, t		Capacity '09, t/a		Output '09, t		Ex-factory price in Mar. 2011 (USD/t)	
		Syrup	Crystal	Syrup	Crystal	Syrup	Crystal	Syrup	Crystal	Syrup	Crystal
1	Shandong Tianli	■	■	■	■	■	■	■	■	■	■
2	Roquette China	■	■	■	■	■	■	■	■	■	■
3	Guangxi Khalista	■	■	■	■	■	■	■	■	■	■
4	Hebei Lihua	■	■	■	■	■	■	■	■	■	■
5	North China Pharmaceutical	■	■	■	■	■	■	■	■	■	■
6	Hebei Limin	■	■	■	■	■	■	■	■	■	■
7	Shandong Dongxiao	■	■	■	■	■	■	■	■	■	■
8	Anhui Harvest	■	■	■	■	■	■	■	■	■	■
9	Shandong Golden Sun	■	■	■	■	■	■	■	■	■	■
10	Shandong Tianwei	■	■	■	■	■	■	■	■	■	■
...
Subtotal		■	■	■	■	■	■	■	■	/	/
Others		■	■	■	■	■	■	■	■	/	/
Total		■	■	■	■	■	■	■	■	/	/

Source: CCM International

2 Technology

In China, production technologies of sugar alcohols have been developed rapidly in recent years; devices and product quality in the production have been constantly improved. Traditionally, glucose was hydrogenated in the presence of nitrogen as a catalyst under high pressure and high temperature, which is easy to realize industrial production of sugar alcohols on a large scale.

However, traditional chemical technology has disadvantages below:

- Limited reaction conditions, including temperature, catalyst, pressure and complicated technology
- Frequently accompanied by side reactions

- Many pollutants like waste water and exhaust emissions

Table 2-1 Comparison of different production methods in sugar alcohol industry

Method	Production cost	Waste discharge	Procedure	Investment in equipment	Product quality
Tradition chemical method	■	■	■	■	■
Bioproduction	■	■	■	■	■

Source: CCM International

2.1 Sorbitol

2.1.2 Technology innovation

Sorbitol is widely used in food additives, medical and chemical engineering. Production technology of sorbitol gradually improves as demand for it has increased. Currently, there are three trends in sorbitol's research: developing catalyst in hydrogen-reduction process of glucose, electro-reduction of sucrose to produce sorbitol and bioproduction of sorbitol.

2.1.3 Introduction to key patent

Table 2.1.3-1 Key patents about sorbitol production in China, 2000-2010

Patent No.	Applicant of patent	Name of patent
■	Wen Jianping	The production technologies for sorbitol using loop reactor
■	Wang Zhonghong	Hydrogenation tank reactor in sorbitol production
■	Liu Haichao	A production method of sorbitol and mannitol using cellulose as raw material
■	Huanghe	A production method for isosorbitol
■	Zhang Meng	A production method for sorbitol by hydrogenation of glucose

Source: CCM International