

Production and Market of Glucono-delta-lactone in China

The Fifth Edition

May 2019



CCM

Data & Business
Intelligence

Researched & prepared by: Kcomber Inc.

Copyright by Kcomber Inc.

Any publication, distribution or copying of the content in this report is prohibited.

Website: <http://www.cnchemicals.com>

Tel: +86-20-37616606

Fax: +86-20-37616968

Email: econtact@cnchemicals.com

Contents

Executive summary	1
Introduction and methodology.....	2
1 Historical development of glucono-delta-lactone industry in China	3
1.1 Brief introduction to glucono-delta-lactone.....	3
1.2 Historical development in China.....	3
2 Supply and demand of glucono-delta-lactone in China	5
2.1 Current production situation	5
2.1.1 Summary of production	5
2.1.2 Producer information in China.....	5
2.2 Raw material supply	7
2.3 Price.....	9
2.4 Consumption situation in China, 2016-2018	10
2.4.1 Consumption pattern of glucono-delta-lactone in China.....	10
2.4.2 Application situation in major end use segments.....	11
2.4.2.1 Consumption in bean curd	11
2.4.2.2 Consumption in meat products	12
2.4.2.3 Consumption in raising agents.....	13
2.4.2.4 Consumption in other fields	14
3 Production technology of glucono-delta-lactone	15
3.1 Different pathways/methods.....	15
3.2 Research status.....	17
4 Forecast on development of glucono-delta-lactone in China	18
4.1 Drivers	18
4.2 Barriers	19
4.3 Forecast on output and demand in China, 2019-2023	20
5 Conclusions, opportunities and recommendation	22

LIST OF TABLES

Table 1.1-1 Product description of GDL

Table 2.1.2-1 Basic information about GDL producers in China, 2018

Table 2.1.2-2 Capacity and output of GDL producers in China, 2016–2018

Table 3.1-1 Production method of GDL by producer in China, 2019

Table 3.2-1 Patents related to GDL production applied in China, as of May 2019

LIST OF FIGURES

Figure 1.1-1 Chemical structural formula of GDL

Figure 2.1.1-1 Capacity and output of GDL in China, 2016–2018

Figure 2.1.2-1 Output distribution of GDL in China, 2018

Figure 2.2-1 Capacity share of GDL production using different raw materials in China, 2018

Figure 2.2-2 Output of crystalline glucose in China, 2013–2017

Figure 2.3-1 Average ex-works price of glucose monohydrate in China, 2013–2018

Figure 2.3-2 Average ex-works price of GDL in China, 2015–2018

Figure 2.4.1-1 Apparent consumption volume of GDL in China, 2016–2018

Figure 2.4.1-2 Consumption pattern of GDL in China, 2018

Figure 2.4.2.1-1 Consumption volume of GDL in bean curd in China, 2016–2018

Figure 2.4.2.2-1 Consumption volume of GDL in raising agents in China, 2016–2018

Figure 2.4.2.3-1 Consumption volume of GDL in meat products in China, 2016–2018

Figure 3.1-1 Flowchart of sodium gluconate method in China

Figure 3.1-2 Flowchart of calcium gluconate method in China

Figure 3.1-3 Flowchart of Dezhou Huiyang's GDL method

Figure 4.1-1 GDP change in China, 2014–2018

Figure 4.3-1 Forecast on GDL demand in China, 2019–2023

Figure 4.3-2 Forecast on GDL output in China, 2019–2023

1. Introduction

The GDL report, updated in May 2019, focuses on GDL production and consumption in China. The data for 2016–2018 is based on CCM's database and various other sources mentioned in the section of methodology below.

Region scope: China

Time scope: primarily 2016 to 2018 unless otherwise stated

2. Approach for this report

CCM adopts various approaches including desk research, extensive telephone interviews, data support from China Customs, etc. Information is also associated with CCM's database and a wide variety of publications and Internet websites worldwide.

➤ Desk research

The sources of desk research include published magazines, journals, government statistics, industrial statistics, customs statistics, association seminars as well as information from the Internet. A lot of work went into compiling and analysing the information obtained. Some crosschecks have also been made with the Chinese suppliers regarding market information such as technology, production, pricing, etc.

➤ Tel interview & online communication

CCM had carried out telephone interviews & online communication with GDL producers, researchers, traders and its end users in Mainland China.

➤ Data processing and presentation

The data from verified information, telephone interviews and the secondary data from all of the publications have been combined to make this report as precise and scientific as possible. Throughout the process, a series of internal discussions have been conducted to analyse the data and draw conclusions. Some industrial experts and active researchers have been consulted to verify the findings.

3. Executive summary

China is one of the important producers of glucono-delta-lactone (GDL) in the world. In 2018, the production capacity and output of GDL were about XXX t/a and 317,000 tonnes respectively. From 2016 to 2018, no new GDL capacity was put into production; however, thanks to growing demand from home and abroad, output of GDL has increased steadily with GDL operating rate of XXX%, XXX%, XXX%, respectively. As of Dec. 2018, there were XXX active GDL producers in China. Capacity of the top two producers accounted for XXX% of the national total. During 2016–2018, Shandong Hongsheng was the largest GDL producer by output in China.

Glucose, sodium gluconate (SG) and maltose are the three major raw materials used in industrialized production of GDL at present, in which glucose with sufficient supply is the most important raw material for China's GDL industry.

There are several production methods of GDL, and only fermentation method is adopted in China. Some producers take glucose as starting material to produce calcium gluconate or sodium gluconate first and then GDL, while some others directly take sodium gluconate as starting material to produce GDL. Dezhou Huiyang is the only one that takes maltose solution to coproduce trehalose and GDL.

In 2018, about XXX tonnes of GDL was consumed in China. Bean curd is the largest end use segment of GDL, taking up over two-thirds of total consumption, followed by raising agents and meat products. Thanks to the stable development of domestic food industry, as well as more applications being developed, the demand for GDL in China will increase stably in the future.

In the future, increasing demand from home and abroad will be the most important driving factor in GDL industry, though GDL producers still have to struggle for meeting strict environmental protection standards. Since demand for GDL will keep slightly increasing, reaching XXX tonnes in 2023 in expectation, it is estimated that output of GDL will increase accordingly, reaching about XXX tonnes in 2023, with a CAGR of about XXX% from 2019 to 2023.

4. What's in this report?

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

...

1 Historical development of glucono-delta-lactone industry in China

1.2 Historical development in China

...

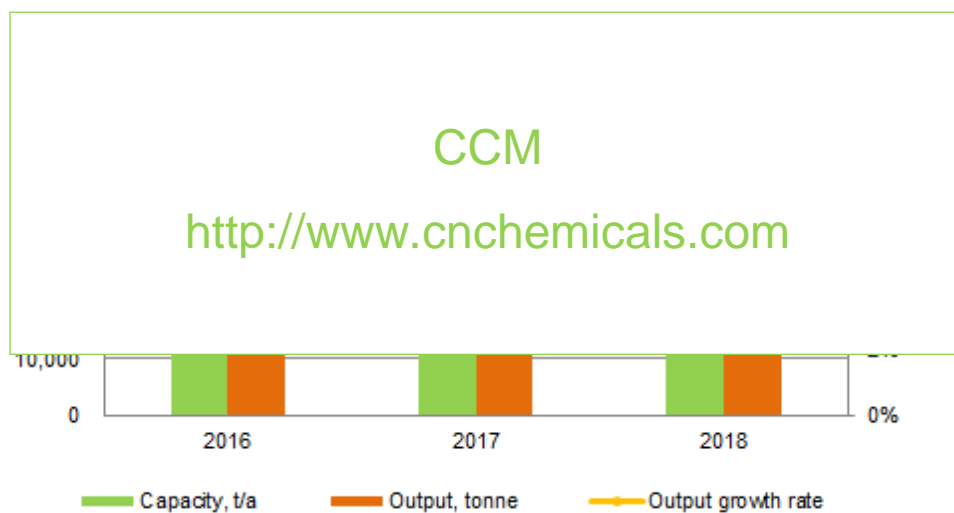
- Start-up stage (1980s-1990s):
- Development stage (2000-XXX):
- Structural reform stage (XXX-):

2 Supply and demand of glucono-delta-lactone in China

2.1 Current production situation

2.1.1 Summary of production

Figure 2.1.1-1 Capacity and output of GDL in China, 2016–2018



Source: CCM

...

2.1.2 Producer information in China

Table 2.1.2-2 Capacity and output of GDL producers in China, 2016–2018

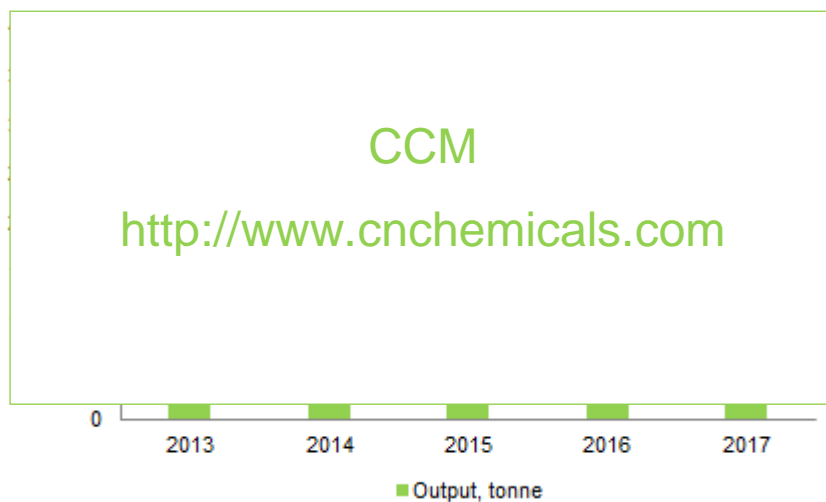
No.	Producer	Capacity, t/a			Output, tonne		
		2018	2017	2016	2018	2017	2016
1	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX	XXX	XXX

Source: CCM

...

2.2 Raw material supply

Figure 2.2-2 Output of crystalline glucose in China, 2013–2017

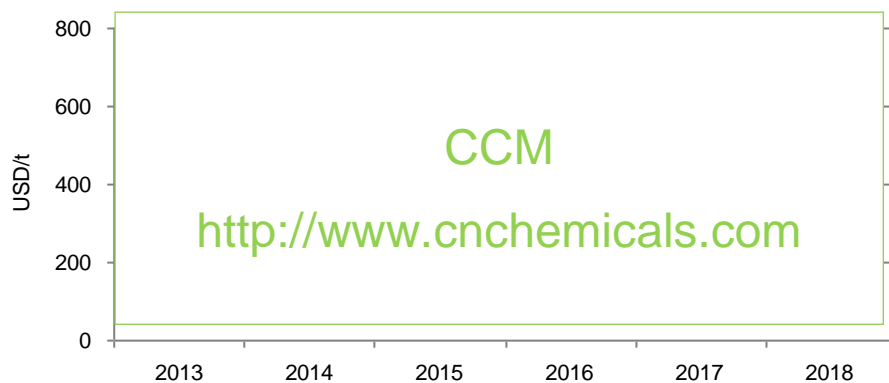


Source: China Starch Industry Association

...

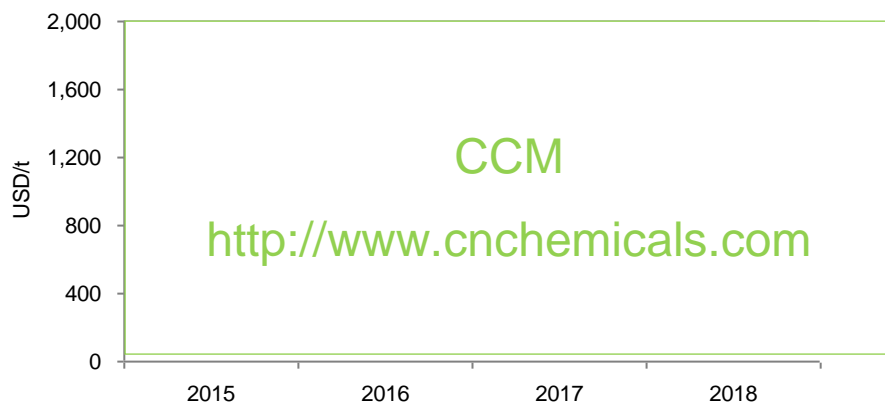
2.3 Price

Figure 2.3-1 Average ex-works price of glucose monohydrate in China, 2013–2018



Source: CCM

Figure 2.3-2 Average ex-works price of GDL in China, 2015–2018



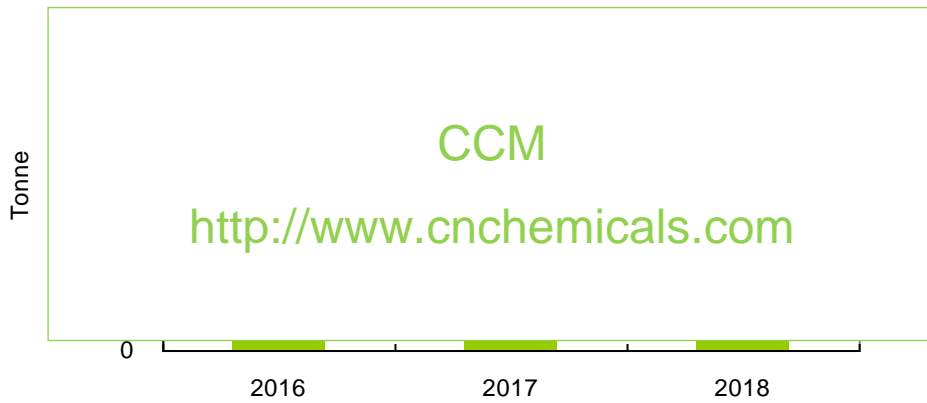
Source: CCM

...

2.4 Consumption situation in China, 2016–2018

2.4.1 Consumption pattern of glucono-delta-lactone in China

Figure 2.4.1-1 Apparent consumption volume of GDL in China, 2016–2018



Source: CCM

Figure 2.4.1-2 Consumption pattern of GDL in China, 2018



Source: CCM

3 Production technology of glucono-delta-lactone

3.1 Different pathways/methods

...

Table 3.1-1 Production method of GDL by producer in China, 2019

No.	Producer	Technology	Raw material	Raw material source
1	XXX	XXX	SG	XXX
2	XXX	XXX	XXX	Capative
3	XXX	XXX	XXX	Outsourcing
...	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX
..	XXX	XXX	XXX	XXX

Source: CCM

...

4 Forecast on development of glucono-delta-lactone in China

4.3 Forecast on output and demand in China, 2019–2023

.....

Figure 4.3-1 Forecast on GDL demand in China, 2019–2023



Source: CCM

...

If you want more information, please feel free to contact us

Tel: +86-20-37616606 Fax: +86-20-37616968

Email: econtact@cnchemicals.com