

II-5.1 Market Size in Major End Use Segments

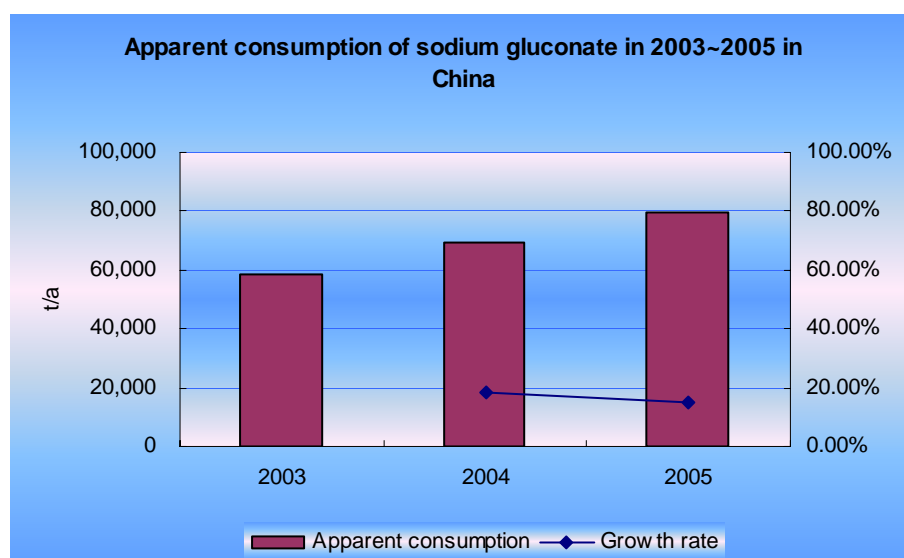
➤ Apparent Consumption of Sodium Gluconate in Recent Years

The development of sodium gluconate industry in China has been very quick along with the increment and enlargement demand in some new fields. A great amount of sodium gluconate has been used in cement and concrete additive in recent years. This field also has the fastest growth in the domestic consumption of sodium gluconate, as concrete industry is a large and important industry.

China's apparent consumption of sodium gluconate in 2005 was about 78,000 tonnes, which was more than about 20,000 tonnes of that in 2003. And it still continues increasing in high growths, which were about 18.38% in 2004 and 14.97% in 2005 respectively.

The application prospect of sodium gluconate is very good in China, and the growth of apparent consumption of sodium gluconate in China will keep at a high level in the coming 2~3 years.

Figure II-5.1-1 Apparent consumption of sodium gluconate in 2003~2005 in China



➤ Consumption Pattern of Sodium Gluconate in 2005 in China

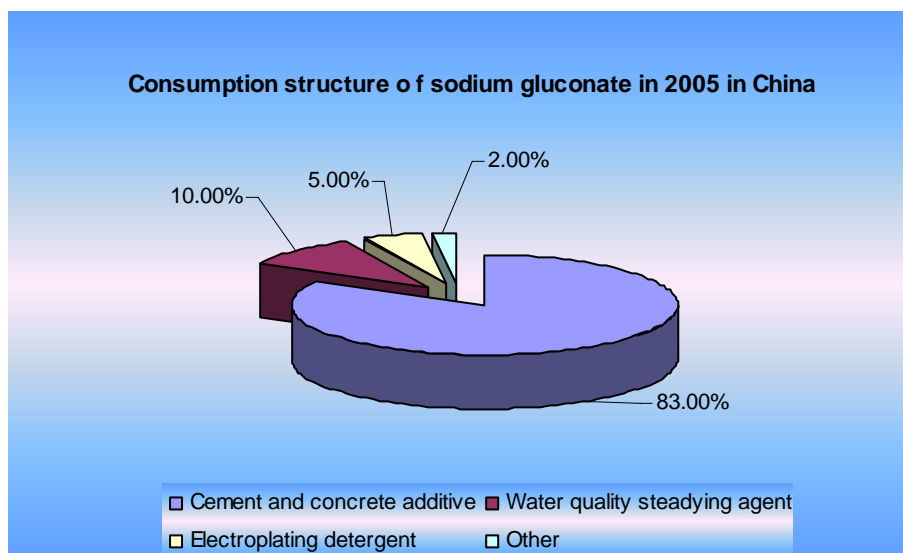
Sodium gluconate is mainly used in industry. It can be used in cement and concrete additive, water quality steadying agent and electroplate detergent, and etc. Moreover, it also can be used in food additive and pharmaceutical. A large part of sodium gluconate is used in industry, and is seldom used in food additive and pharmaceutical.

The output of sodium gluconate in 2005 in China was 102,100 tonnes, in which 22,588 tonnes was exported. Meanwhile, the import quantity of sodium gluconate in 2005 was 96 tonnes. The

apparent consumption of sodium gluconate in 2005 was [redacted] tonnes, which accounted for 77.97% of the total output.

The major consumption fields were concrete additive, water quality steadying agent and electroplating detergent.

Figure II-5.1-2 Consumption structure of sodium gluconate in 2005 in China



In 2005, the largest consumption field of sodium gluconate was cement and concrete additive. The consumption in concrete additive was about [redacted] tonnes, which accounted for about 83.00% of the total apparent consumption. The consumption of sodium gluconate in this field has increased very sharply in recent 2~3 years.

Water quality steadying agent was the second largest consumption field of sodium gluconate. The consumption in this field was about [redacted] tonnes, which accounted for about 10.00% of the total apparent consumption. The consumption of sodium gluconate in this field has increased gradually in recent years.

Another major consumption field of sodium gluconate was electroplating detergent. In this field, the consumption of sodium gluconate was about [redacted] tonnes, which accounted for about 5.00% of the total apparent consumption.

Moreover, there were about 2.00% sodium gluconate consumed in any other fields, such as balancing agent of acid and base, raising agent, mildew preventive, and so on.

In the future, there is great potential to use sodium gluconate in some new fields, such as detergent for bottle and non-phosphate detergent, and it will be introduced to food industry and pharmaceutical industry.

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I-5.3 Consumption Character & Discussion

Generally speaking, the consumption of sodium gluconate has several major characters to be listed as follow:

- ✓ The consumption of sodium gluconate has increased very sharply in recent years, especially in 2004 and 2005, with the speedy development of sodium gluconate in China. The fast growth of sodium gluconate consumption in China will last at least 2-3 years.
- ✓ Meanwhile, the current consumption of sodium gluconate is very concentrated, although the consumption field is wide. A large part of sodium gluconate is consumed in industry, but is seldom consumed in food industry and pharmaceutical industry. The consumption structure will not change radically in coming several years, since the usage of sodium gluconate in industry is much more than that in food and pharmaceutical industry.
- ✓ The most quickly increasing field of sodium gluconate consumption is cement and concrete additive industry, in some extent, the sodium gluconate industry is promoted by development of cement and concrete additive industry.
- ✓ The consumption of sodium gluconate is more in summer and less in winter. This is decided by the character of sodium gluconate, since most of sodium gluconate is used as retarding agent in industry to prolong setting time of concrete at high temperature. Hence, there is no need to utilize sodium gluconate to prolong the setting time of concrete in winter because the temperature is low during that time and the setting time of concrete is long.
- ✓ Industrial grade sodium gluconate is consumed in cement and concrete additive industry generally, since the requirement to the quality and purity of sodium gluconate in cement and concrete additive is not very high. While pharmaceutical grade and food grade sodium gluconate is mainly used in food industry and electroplating industry.
- ✓ There will be some new consumption fields, such as detergent for bottle and non-phosphate detergent to be developed in the future.