



## China Hydrofluoric Acid Market Report, 2008-2009

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## 3.2 Demand of Hydrofluoric Acid

### 3.2.1 Demand

As the most important basic raw materials for fluorine chemistry, Hydrofluoric acid is the largest consumption of fluoride, as well as the most important downstream processing products of fluorite. Hydrofluoric acid used in the manufacture of inorganic compounds such as aluminum fluoride, crystal, the purification of molybdenum, rare earth, graphite and other minerals, the etchant of glass and metal, the major raw material of fluoride element. In regard to organic compounds, Hydrofluoric acid used in the manufacture of fluorine refrigerant, organic fluorine resin raw materials, the catalyst for alkylation or hydrocarbons, and so forth.

From 2003 to 2008, as the base of fluorine chemistry, products of Hydrofluoric acid grew rapidly and the market demand enlarged increasingly. In recent years, the demand of Chinese market for high purity and super clean level hydrofluoric acid also ceaselessly increased, showing a strong growing momentum.

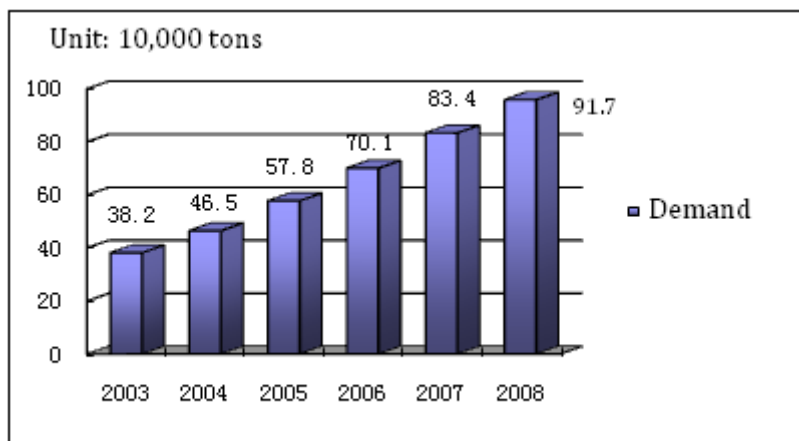
The demand for Hydrofluoric acid rose to 917,000 tons in 2008 from 382,000 tons in 2003. The growth originated mainly from downstream applications.

*China's Demand for Hydrofluoric Acid, 2003-2008 (unit: 10,000 tons)*

	2003	2004	2005	2006	2007	2008
<b>Demand</b>	38.2	46.5	57.8	70.1	83.4	91.7

Source: Chinachemnet.com

*China's Demand for Hydrofluoric Acid, 2003-2008*



Source: Chinachemnet.com

### 3.2.2 Factors Affecting Demand

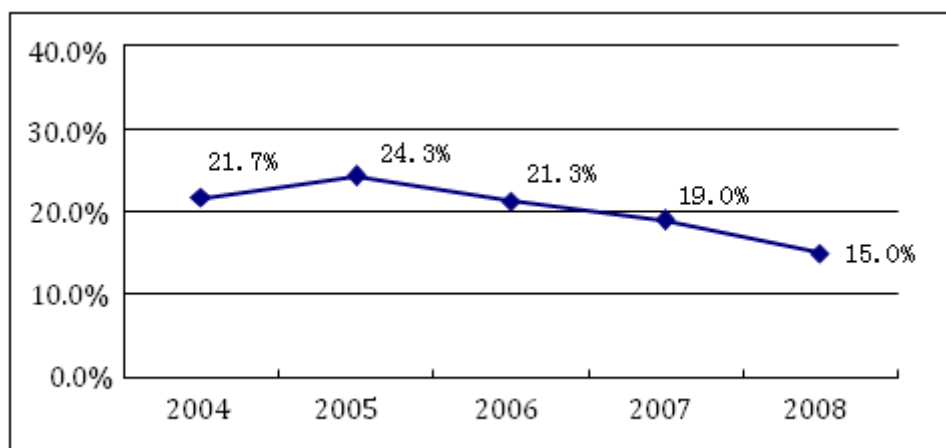
#### 3.2.2.1 Raw Materials

##### Influences of Fluorite

In 2008, the price of hydrofluoric acid soared up in China. The price of anhydrous hydrofluoric acid climbed to RMB10400-10600/ton in the last twenty days of June 2008. This was mainly attributable to the rising prices of upstream raw materials. Making a general survey of international environment, the world's main developed countries are running out of fluorite resources and the production of anhydrous hydrofluoric acid is in stagnancy or slowdown. Along with the acceleration of economic globalization as well as the booming of fluorine inorganic chemistry and organic chemistry, the supply of anhydrous hydrofluoric acid falls short of the demand in global and China markets.

The rapid growth of world fluorite chemical industry conduces to the rising demand of international market for fluorite resources. Out of considerations for resource shortage and environmental protection in recent years, most of overseas fluorite chemical producers have stopped the new construction or expansion of basic fluorite chemical raw material production capacity, reduced the production of products of such kind, and transferred to the relatively cheap imported fluorite or basic fluorine chemicals from China or India. However, China began in 2007 to levy a 10% interim tariff on the export of hydrofluoric acid so as to protect fluorite resources. And the interim tariff was then promoted to 15% in 2008 and 25% in 2009. After China's act to control the export of fluorite, many countries began to import hydrofluoric acid from China. This is the reason for the still booming demand for hydrofluoric acid under the restrictions on its output and export volume.

*Growth Rate of Demand for Hydrofluoric Acid in China*



Source: Chinachemnet.com

## Influences of Sulfuric Acid

Sulfuric acid takes a large share in the production cost of hydrofluoric acid. So, the price of the former decides that of the latter. Inflicted by financial crisis, China's output, import volume and apparent consumption of sulfuric acid in 2008 all dropped to some extent compared with the year 2007, but the export volume significantly increased against 2007.

Similar to other chemical products, the price of sulfuric acid experienced twists and turns in 2008. In the first quarter of 2008, the production and sale of sulfuric acid both boomed thanks to the rate of production utility operation above 95%. The market supply was in tight situation, which was mainly due to the South China's infliction from snow disaster and icy freezing in Feb.2008, and main Chinese sulfuric acid manufacturers clustered in Southwest China, East China, Central China and South China where the enterprises almost broke down, which caused the considerable shortage of sulfuric acid supply in China and the rising prices. In the second quarter of 2008, the fast growing cost of transportation and the booming season of downstream fertilizer market promoted the rapid rising prices of sulfuric acid. Since the influences of financial slowdown in the three and four quarters of 2008, downstream users ceased production and the prices of raw materials such as sulfur declined, making the production cost decrease further and the demand shrink.

Impacted by the economic recession resulting from financial crisis, the enterprises in provinces of Yunnan, Guizhou, Sichuan, Hubei and Chongqing etc reduced or stopped production. The output of sulfuric acid dropped, and the prices plunged. But China-made sulfuric acid gets mainly consumed in China and China's governmental act to stimulate domestic demand, the sulfuric acid industry was little influenced by global financial slowdown. Since China's production capacity of sulfuric acid is currently in overproduction, it is a finality that China's supply of sulfuric acid will surpass the market demand in 2010.

### 3.2.2.2 Chemical Industry Development

Hydrofluoric acid is a kind of widely used chemical raw materials and it can be taken as the dehydrant or the catalyst in chemical production. The development of chemical industry exerts great impact on the growth of hydrofluoric acid.

The economic crisis in 2008 has exerted great effect on Chinese chemical market. In the first half year of 2008, China chemical industry was confronted with such unfavorable factors as rising prices of raw materials and the RMB appreciation. Hidden suffering arose in industry development. In the second half of 2008, the price of crude oil plunged and American financial crisis deepened, which accelerated the declining of chemical product prices. Chemical enterprises not only have to deal with huge inventory, but also face the hardship of insufficient domestic demand and shrinking foreign demand. The boom of the industry dropped sharply. In the face of the hardships, a lot of chemical enterprises can not effectively tackle those unfavorable. Many of them will stop production or go bankruptcy.

In spite of national economy stimulation plan, chemical industry is hard to benefit from RMB4 trillion investments. Firstly, RMB4 trillion has been mainly invested for the construction of infrastructure, from which few chemical enterprises can get benefit; secondly, a large proportion of products is in overcapacity. In the event of inappropriate investment and not a unified arrangement, overcapacity is hardly settled or even becomes worse; thirdly, China-made chemical products are mostly at low level and without competitiveness, quite vulnerable to economic downturn; lastly, the measures like the rise in the export tax rebates can only maintain the price advantage of products, but can not reverse the trend of the declining demand.

To sum up, the demand for hydrofluoric acid will change with the adjustment of production in chemical industry.

### 3.2.2.3 Aluminum Industry Development

The electrolytic aluminum industry is the main consumer of fluoride salt. In 2008, China aluminum industry fell into recession due to the impact of macro-economy situation, and the whole industry chain was in the hardship of insufficient demand and decreasing growth rate. According to the data of China Nonferrous Metals Association, as estimated till the end of 2008, national total production capacity of electrolytic aluminum was expected to be up to approximately 18 million tons in 2008, with growth margin of 16.8%. In Jan.-Nov., the production capacity statistically amounted to 12.24 million tons, up 6.86% against the same period of last year, but a drop of 28.6 percentage points in growth margin. It was expected that the year-around output would get to 13.25 million tons. Since the international financial crisis in Sep. 2008, the monthly output of electrolytic aluminum has shown a negative growth. As yet, national production of electrolytic aluminum decreased 3.5 million tons approximately.

Internal and external unfavorable in 2008 seriously inflicted the production and operation of China aluminum industry. To begin with, financial crisis caused global consumption to drop greatly. Although Chinese enterprises cut by a wide margin their production, the prices still keeps decreasing; secondly, many inherent problems in the industry development have not yet been solved, such as overmuch production capacity, too high prices of energies as well as resource bottleneck and so forth. In short term, Chinese electrolytic aluminum market is relatively in saturation, but in the medium and long run, there is still greater space for the demand of international market and Chinese market for electrolytic aluminum.

As electrolytic aluminum industry cut the production, China's demand for hydrofluoric acid in 2008 would also decrease.

### 3.2.2.4 Glass Industry Development

The drop in the growth rate of China's glass output in 2008 was mainly attributable to the shrinkage of market demand. In recent years, the three drivers for the development of glass industry, namely, real estate, automobile industry and exports, without exception got seriously inflicted and dropped sharply. The rapidly decreasing demand of Chinese market, the shrinking export and the influence of financial crisis on manufacturing, the glass industry faced severe challenges. In 2008 around, the glass production capacity first increased and then decreased. In Jan.-Nov.2008, China's output of plate glass reached 513.9 million weight boxes, up 9% compared to the same period of last year. As is also statistically shown, the monthly output of plate glass during January to November of 2008 had been in fluctuation between 45 million weight boxes and 51 million weight boxes. In the past years, the four quarter was the best season for the production and sale of plate glass, yet, the output of plate glass in Nov.2008 was 45.9925 million weight boxes, a 9% drop compared to 51 million weight boxes in Oct.2008. In 2008 around, the output of plate glass amounted to approximately 560 million weight boxes, presenting a 5% year-on-year rise. In the second half year of 2008, altogether 40 production lines for float glass of Chinese glass enterprises ceased production (output next to 100 million weight boxes). In consequence, the demand for hydrofluoric acid decreased.

The enameling industry is another industry that consumes hydrofluoric acid the most. With a great number of China-made enameled products welcomed in the international market, the quantity of exports surged in recent years, and the demand for hydrofluoric acid further increased. In 2008, national output of enameled products hit 5.23912 billion tons, up 17.70% year-on-year, but lower than 41.70% in 2007; the industrial gross output value accomplished RMB14.656 billion (current price), up 19.57% year-on-year, but lower than 41.79% in 2007. According to the statistics of China Customs, the export value of the enameling industry achieved US\$1.23 billion in 2008, nearly the same as US\$1.22 billion in 2007.



### **3.2.2.5 Catalyst Industry Development**

Chinese catalyst industry has begun to be integrated, but currently with a scattered pattern. From the view of industry development in the future, huge potentials exist in the catalyst market. As petrochemical utilities put into production, the usage of catalysts will beyond doubt increase significantly. In addition, the development cycle of the catalyst industry lags one or two years behind that of the petrochemical industry. The rapid development of petrochemical industry will promote the fast growth of catalyst industry. Hydrofluoric acid has wide applications in the catalyst. So, the demand for hydrofluoric acid also increased with the fast progression of the catalyst industry.

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