

I-1 Production of Melamine in the Past Years

By end of 2001, there are 55 manufacturers who are reported to have ability to produce melamine. The total capacity in these manufactures is 222,500t/a, increasing 80% over 1999.

However only about 21 manufacturers are keeping regular production, and 2 manufacturers are constructing the production lines. The total capacity in these active/potential manufacturers is 187,700t/a. The rest manufacturers either stop the melamine production or only produce on receiving the order.

The melamine production in 2001 is estimated to be 115,200 tonnes, increasing nearly 90% over the claimed production in 1999. The claimed production from Shandong Haihua, Sichuan Chem. Works, Fujian Sanming and Henan Yuhua accounts to around 60% of the total production in China.

Table I-1-1 Production of melamine in the past (Unit: tonnes)

| Year | Capacity (t/a) | Output (tonnes) | Export (tonnes) | Import (tonnes) | Consumption (tonnes) |
|------|----------------|-----------------|-----------------|-----------------|----------------------|
| 1995 | 35,000 | 24,000 | 9,922 | N/A | 14,078 |
| 1996 | 50,000 | 28,000 | 12,705 | N/A | 15,295 |
| 1997 | 50,000 | 42,000 | 18,158 | 3,890 | 27,732 |
| 1998 | 110,000 | 64,000 | 23,502 | 3,803 | 44,301 |
| 1999 | 138,100 | 61,000 | 16,669 | 3,986 | 48,317 |
| 2000 | 151,100 | 80,000 | 28,931 | 5,993 | 57,062 |
| 2001 | 222,500 | 96,768 | 38,227 | 3,455 | 61,996 |
| 2002 | 370,000 | 150,000 | 38,241 | 8,917 | 120,676 |
| 2003 | 451,600 | 239,174 | 72,917 | 10,710 | 176,967 |
| 2004 | 516,600 | 254,000 | 73,032 | 13,173 | 194,141 |
| 2005 | ██████ | ██████ | ██████ | ██████ | ██████ |
| 2006 | ██████ | ██████ | ██████ | ██████ | ██████ |

In 2004 the output of homemade melamine was 254 kts, consuming about 1,000 kts of urea.

In 2005, China produced 338 kts of melamine, which accounted for 51.2% the total output in Asia, and 23.6% of the global output. At the same time, China consumed 1,150 kts of urea. However, China's melamine capacity in 2005 was 588kts/a, which accounted for 42.8% of the capacity in Asia and 24.8% in the world. The operating rate was just 57.5% in China; while the operating rate was over 90% in Europe at the same time. The operating rate was very low in China, mainly due to the following factors:

- ✓ Most of the middle- or small-scale producers stopped or partly stopped production because the supply has greatly exceeded the demand and the price of raw material and energy has increased sharply;
- ✓ Most of the new production lines haven't been launched into production.

I-3 Import and Export Analysis of Melamine in 1999~2006

Table 3-1 Import & export quantity and price of melamine in China

| Year | Export (tonnes) | Export price (USD/kg) | Import (tonnes) | Import price(USD/kg) |
|------|-----------------|-----------------------|-----------------|----------------------|
| 1995 | 9,922 | N/A | N/A | N/A |
| 1996 | 12,705 | N/A | N/A | N/A |
| 1997 | 18,158 | 1.35 | 3,890 | 1.21 |
| 1998 | 23,502 | 1.69 | 3,803 | 1.12 |
| 1999 | 16,869 | 0.84 | 3,982 | 0.89 |
| 2000 | 28,931 | 0.90 | 5,993 | 0.95 |
| 2001 | 38,391 | 0.92 | 3,616 | 0.97 |
| 2002 | 38,241 | 0.80 | 8,917 | 0.91 |
| 2003 | 72,917 | 0.97 | 10,710 | 0.98 |
| 2004 | ████ | ██ | ████ | ██ |
| 2005 | ████ | ██ | ████ | ██ |
| 2006 | ████ | ██ | ████ | ██ |

I-3.1 Import & Export in the Past Years

Before 2003 the annual export quantity of Chinese melamine was around 30,000 tonnes while the annual import quantity was around 4,000 tonnes. Export statistics shows that the export in 2001 increased by 128% over 1999, reaching to 38,391 tonnes.

Break down the import & export situation by countries it was found that the Chinese melamine was mainly exported to European countries and Asian countries.

In 1999, the large export destinations included Netherlands, United Kingdom, Belgium, South Korea, Indonesia, and Italy. In the mean time, China imported some quantity of melamine from South Korea and Japan.

But in 2001, the large export destinations included Belgium, German, USA, Netherlands, Canada, Thailand, Indonesia, South Korea and Brazil. From 1999 to 2001 the export quantity to Belgium, Thailand, Brazil, Pakistan and USA has increased by 5 times.

I-5 Brief Introduction to the Supply Situation of Urea

Domestic urea industry developed fast with the average annual growth rate of 8.0% in the past ten years. In 1998 the domestic urea supply exceeded the demand for the first time, after that domestic market kept being saturated with urea. The capacity of urea in China is about 50,000kts/a in 2007, and it will reach 60,000kts/a in 2011. The overcapacity will continue in the coming five years.

Currently there are over 200 active urea producers in China. Among them only 29 companies are large-scale producers, namely producers with the output of more than 500kts/a.

In 2006 the output of urea in China reached 45,786 kts, and only about 1,500 kts of urea was consumed to produce melamine. This indicates that the supply of urea is abundant for melamine production now and in the coming five years.

Table I-5.1 Production and consumption situation of urea in the past decade in China (tonnes)

| Year | Output | Export volume | Import volume | Apparent Consumption | Rate of self-support |
|------|------------|---------------|---------------|----------------------|----------------------|
| 1995 | 17,950,900 | 46,600 | 6,960,000 | 24,864,300 | 72.20% |
| 1996 | 20,601,200 | 197,400 | 5,760,000 | 26,163,800 | 78.74% |
| 1997 | 22,897,300 | 350,500 | 3,420,000 | 25,966,800 | 88.18% |
| 1998 | 26,365,000 | 125,100 | 120,000 | 26,359,900 | 100.02% |
| 1999 | 29,366,400 | 53,800 | 70,000 | 29,382,600 | 99.94% |
| 2000 | 30,700,000 | 959,100 | 25 | 29,740,925 | 103.22% |
| 2001 | 31,278,261 | 1,270,000 | 25 | 30,008,286 | 104.23% |
| 2002 | 34,820,000 | 412,959 | 790,715 | 35,197,756 | 98.93% |
| 2003 | 37,739,130 | 273,282 | 134,922 | 37,600,770 | 100.37% |
| 2004 | ████████ | ████████ | ████████ | ████████ | ████████ |
| 2005 | ████████ | ████████ | ████████ | ████████ | ████████ |
| 2006 | ████████ | ████████ | ████████ | ████████ | ████████ |