

I Production of copper salts in China

I-1 Overview

Copper salts are the kind of important chemical products widely used in many downstream industries including chemical industry, medicine industry, pesticide industry and so on in China. Copper sulphate pentahydrate has relatively mature development with relatively large output every year in China. By contrast, copper hydroxide industry and copper oxychloride industry are in the step of quick development at home and still have upside potential in output.

China is a large producer and consumer of copper sulphate pentahydrate compared with other countries in the world. In 2010, the total capacity and output of copper sulphate pentahydrate are about ■■■ t/a and ■■■ tonnes with about ■■■% of output consumed in domestic market.

As far as copper hydroxide and copper oxychloride are concerned, the position of China is a major exporter but not a major consumer in the world. In 2010, the total capacity and total output of copper oxychloride are ■■■ t/a and ■■■ tonnes with the export rate of about ■■■%, and the total capacity and total output of copper hydroxide are ■■■ t/a and ■■■ tonnes respectively with the export rate of about ■■■%.

Table I-1.1 Output situation of three main copper salts in China, 2005-2010

| No. | Product | Output, tonne | | CAGR, 2005-2010 |
|--------------|------------------------------|---------------|------|-----------------|
| | | 2005 | 2010 | |
| 1 | Copper oxychloride | ■■■ | ■■■ | ■■■% |
| 2 | Copper sulphate pentahydrate | ■■■ | ■■■ | ■■■% |
| 3 | Copper hydroxide | ■■■ | ■■■ | ■■■% |
| Total | | ■■■ | ■■■ | ■■■% |

Source: CCM International

Table I-1.2 Overall production situation of three main copper salts in China, 2010

| No. | Product | Total capacity, t/a | Total output, tonne | Operating rate | Main copper source | Average Ex-work price, USD/t |
|--------------|------------------------------|---------------------|---------------------|----------------|--------------------|------------------------------|
| 1 | Copper oxychloride | ■■■ | ■■■ | ■■■% | ■■■ | ■■■ |
| 2 | Copper sulphate pentahydrate | ■■■ | ■■■ | ■■■% | ■■■ | ■■■ |
| 3 | Copper hydroxide | ■■■ | ■■■ | ■■■% | ■■■ | ■■■ |
| Total | | ■■■ | ■■■ | ■■■% | / | / |

Source: CCM International

For lower price of copper scrap, the manufacturers of copper oxychloride and copper hydroxide mainly purchase copper scrap for the production to reduce manufacturing cost. However, the manufacturers of copper sulphate pentahydrate mostly use self-produced original copper for producing copper sulphate pentahydrate.

Table I-1.3 Overall production situation of formulations of three copper salts and bordeaux mixture in China, 2010

| No. | Product | Capacity, t/a | Output, tonne | Operating rate |
|--------------|---------------------------------|---------------|---------------|----------------|
| 1 | Copper oxychloride formulations | ■ | ■ | ■% |
| 2 | Copper sulfate formulations | ■ | ■ | ■% |
| 3 | Bordeaux mixture | ■ | ■ | ■% |
| 4 | Copper hydroxide formulations | ■ | ■ | ■% |
| Total | | ■ | ■ | ■% |

Source: CCM International

Table I-1.4 Generality and specificity for production development among different copper salts industries in China

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|--------------------|---|
| Generality | <ul style="list-style-type: none"> ➤ The output of each product is increasing from 2005 to 2010. ➤ The producers of these products are most distributed in Jiangsu, Shanghai, Shandong which is more convenient in transportation for export and with larger market demand than others. ➤ The production of each product is in over-capacity situation. The operating rate of copper sulphate pentahydrate, copper oxychloride and copper hydroxide is ■%, ■% and ■% respectively. |
| Specificity | <ul style="list-style-type: none"> ➤ For the different market demand, the output and growth rate of each product is different. The growth rate of copper hydroxide output is between ■% and ■% with largest fluctuation, while the copper sulphate pentahydrate's is between ■% and ■% with smallest fluctuation. ➤ The copper source for each product is different. The manufacturers of copper sulphate pentahydrate mostly adopt original copper for production, but the manufacturers of copper oxychloride and copper hydroxide mostly adopt copper scrap for production. ➤ The major formulation of each copper salts is different. The major formulation of copper oxychloride and copper hydroxide is wettable powder, while the major formulations of copper sulphate pentahydrate are aqueous suspension concentrate and aqueous solution. |

Source: CCM International

In these years, Chinese copper salts industry is in the status of over-capacity. There are some factors bringing about over-capacity of copper salts production.

First, the management for copper salts industry of Chinese government was unreasonable in the past. It doesn't deal properly with some problems such as environmental protection and product quality control of copper salts industries. With the government unfastening the supervision of admittance into copper salts industries, the supply of copper salts grows rapidly, but the demand grows comparatively slowly since the mid of 1990s. The situation mentioned above is the historical reasons for over-capacity of copper salts production.

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