

Competition in Acrylic Acid and Esters Sector Intensifies

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Major events of acrylic acid and esters sector in 2013

Major events and market changes of the acrylic acid and esters sector in China and abroad in 2013 include: (1) Taixing Jurong Chemical Co., Ltd.'s new 160 kt/a acrylic acid project was put into operation; (2) Yip's Chemical Holdings Limited constructed a new 80 kt/a butyl acrylate project; (3) BASF announced the suspension of its units due to equipment accident; (4) an explosion happened in Shanghai Huayi Acrylic Acid Co., Ltd.; (5) in July, Saudi Acrylic Monomer Company started up its new 160 kt/a butyl acrylate unit in Al Jubayl of Saudi Arabia; (6) Nippon Shokubai was approved to fully resume the acrylic acid production line in Himeji of Japan; (7) Nippon Shokubai started up its new acrylic acid unit in Indonesia; (8) Shandong Qilu Petrochemical Kaitai Industry Co., Ltd. started up its new acrylic acid and esters project.

From the end of 2009 to 2010, Arkema, Dow and BASF suffered equipment accidents in succession. In September 2012, an explosion happened in Nippon Shokubai. In 2013, BASF's units in Germany and Malaysia also suffered accidents. In June 2013, an explosion happened in Shanghai Huayi Acrylic Acid Co., Ltd. A series of events in recent years has once again proved that the global supply and demand is balanced by name only. Due to improper safety management (for example, raw material propylene is flammable and easy to explode during storage and transportation), aging of equipment and tight supply of raw materials propylene, unexpected shutdown has occurred frequently in recent years, while the demand from downstream coatings and diaper industries has maintained stable growth, easily resulting in the drastic price rise and increase of trade volume.

Acrylic acid

In 2012, price of acrylic acid in China was stabilized at around RMB12 000/t in the first several months, reduced to below RMB10 000/t in June, rebounded slowly after July and reached around RMB11 500/t in September; affected by the explosion that happened in Nippon Shokubai in September, the domestic price of acrylic acid rose rapidly until early November, and the highest price reached RMB16 200/t; in mid-December, the price dropped drastically to below RMB10 000/t, even lower than that before the explosion of Nippon Shokubai.

In the first half of 2013, the domestic price of acrylic acid fluctuated slightly and was basically stabilized at around RMB10 000/t. In early June 2013, it presented a rising trend. Affected by the explosion in Shanghai Huayi Acrylic Acid Co., Ltd., the price climbed rapidly to RMB13 500/t in July. Influenced by the constant supply shortages, the price of acrylic acid reached RMB14 900/t in October. It was RMB14 300/t at the end of 2013, up 43% year-on-year.

Affected by the slack demand for acrylic acid in the downstream sectors as well as the New Year's Day and Spring Festival, the price of acrylic acid decreased gradually in early 2014, and reduced to RMB10 500/t in early March. It rebounded to over RMB11 000/t in April.

Influenced by the factors like the accident of Shanghai Huayi Acrylic Acid Co., Ltd., the price rise of upstream raw material propylene as well as the lower operating rate of related enterprises, the price of acrylic acid began to climb drastically after July. and the price of acrylic acid continually maintained at a high level afterwards.

In 2013, the price fluctuation of acrylic acid was mainly affected by the explosion in Shanghai Huayi Acrylic Acid Co., Ltd. In the first half of 2013, the operating rate of acrylic acid units was relatively high and the market supply was adequate. However, due to the slight decrease of market demand, the price dropped slightly. After the accident, the price rise lasted around half a year. Besides, overhauls and lower operating rates in some enterprises further tightened the overall market supply. Even if the price of acrylic acid fell in 2014, the overall price is still at a high level, showing that acrylic acid is still a product with tight supply.

Butyl acrylate

The price fluctuation of acrylic acid has also affected prices of acrylic esters. Take butyl acrylate as an example. The price of butyl acrylate in China was around RMB12 000/t in June 2012; it rebounded slowly after July and reached around RMB14 500/t in September; influenced by the explosion in Nippon Shokubai, the price of butyl acrylate climbed rapidly and reached RMB16 650/t in October. The price began to fall in November and reduced to around RMB13 000/t in December. In the first half of 2013, the domestic price of butyl acrylate firstly increased and then fell, but the price fluctuation was smaller. The butyl acrylate price was around RMB12 800/t in May, being basically the same as that in early 2013. The price climbed slowly after July. It rose fast only during August-September, and climbed to around RMB15 800/t in October. The price dropped slowly afterwards and reduced to RMB15 500/t by the end of 2013, a rise of 21% in the whole year of 2013. Due to the slack demand for butyl acrylate in downstream sectors, the domestic price of butyl acrylate fell gradually in early 2014 and reduced to RMB12 300/t by the end of February 2014, being the lowest price level since July 2012. It then rebounded to RMB12 800/t afterwards.

Compared with acrylic acid, butyl acrylate had a quicker response to the price fluctuation and a lower volatility. This was also related to the weak demand for butyl acrylate in downstream sectors, such as coating and adhesive sectors. Currently, the price of butyl acrylate has dropped to a relatively low level since July 2012.

The overall profit of acrylic acid sector was considerable

In 2013, China's acrylic acid and ester sector witnessed different degrees of growth in capacity and output. In 2013, China's capacity, output, import volume and export volume of acrylic acid had a year-on-year growth of 9.5%, 12%, 9.4% and 92.8%, respectively, and the domestic capacity, output, import volume and export volume of acrylic esters witnessed a year-on-year growth of 3.7%, 3.5%, 1.7% and 7.4%, respectively. The growth of acrylic acid exceeded that of acrylic esters, mainly due to the growth of its downstream SAP (super-absorbent polymers) sector. The overall profit of acrylic acid sector was considerable in 2013.

The relaxation of China's Family Planning Policy is bound to usher in a new round of baby boom and promote the birth rate in short term and long term, offering new opportunities for disposable sanitary products, especially baby diapers. In addition, the development of high-efficiency agriculture and China's desertification prevention will also bring new opportunities for SAP. The good development prospects of SAP has promoted the development of acrylic acid, the domestic demand for high-purity acrylic acid has grown rapidly, and the high-purity acrylic acid units need to be built to match with all newly constructed units.

Brisk project construction

Despite the vigorous development of China's acrylic acid and ester, the startup of some new projects being planned to be put into operation in 2013 will be postponed to 2014-2015. New acrylic acid and ester projects being built or planned for construction in China are listed in table 1.

China's newly added capacity to make acrylic acid and esters will be more than 3.2 million t/a in the future, of which the newly added capacity to produce a acrylic acid will reach over 1.6 million t/a, greatly promoted by the development of downstream SAP sector.

Capacity tends to be surplus

In recent years, in order to improve their industrial chains, China's acrylic acid producers have vigorously developed new downstream products and gradually improved product chains. In addition, some enterprises from other sectors have been attracted to construct new acrylic acid and esters projects, showing the vitality of China's acrylic acid and esters sector.

In recent years, capacity for acrylic acid and esters in China has tended to be surplus, constantly arousing industry insiders' concerns. A large number of acrylic acid and esters projects that will also be completed and put into operation in 2014 will have great impacts on the market. At present, among the downstream sectors of acrylic acid and coatings sector show signs of slow development, while SAP and adhesive sectors are demonstrating a sound momentum of growth, especially the SAP sector that will still continue to grow rapidly in China under the support of favorable policies. Promoted by the fast-growing packaging sector, the adhesive sector has developed rapidly in recent years, also offering a strong support for the development of acrylic esters.

Table 1 China's acrylic acid and esters projects being built or planned

Producer Capacity (kt/a) Location Start time Startup time (expected)

Yantai Wanhua Polyurethanes Co., Ltd. 300 AA +360 AE

Wanhua Yantai Industry Park 2012 2014 Under construction

Wanzhou Petrochemical (Jiangsu) Co., Ltd. 80 AA +80 AE

Nantong, Jiangsu province 2012 2014 Under construction

Zhejiang Satellite Petro Chemical Co., Ltd. 320 AA +300 AE

Dushan Port, Pinghu, Jiaying, Zhejiang province 2012 2014 Under construction

Shandong Hongxin Chemical Co., Ltd. 160 AA +200 AE

Zhoucun, Zibo, Shandong province 2012 2014 Under construction

BASF-YPC Co., Ltd. 190 AA +100 AE

Nanjing, Jiangsu province 2010 2014 Under construction

Formosa Acrylic Esters (Ningbo) Co., Ltd. 160 AA +200 AE

Ningbo, Zhejiang province 2012 2014 Under construction

Jiangsu Sailboat Petrochemical Co., Ltd. 200 AA+AE
Xuwei New Area, Lianyungang, Jiangsu province - 2014-2015 Under construction

Shanghai Huayi New Materials Co., Ltd. 320 AA+AE
[Shanghai Chemical Industry Park](#) - 2014-2015 Planned

Shanghai Huayi Group 300 AA+AE
Wuwei, Anhui province - 2020 Planned

Remarks

On January 23, 2014, [Arkema](#) and Jiangsu Jurong Chemical Co., Ltd. announced the setup of a joint venture in which [Arkema](#) will hold a majority stake, comprising the assets of Taixing Jurong Chemical's acrylic acid production site opened in 2012. The deal is expected to complete in 2014. At the initial stage of the joint venture establishment, [Arkema](#) will have access to half of the site's installed capacity. [Arkema](#) will likely continue to make investment and have access 2/3 of the site's acrylic acid installed capacity. Ever more, [Arkema](#) reserves the right to purchase the remaining 1/3 of the acrylic acid production capacities in five years.

Foreign-funded enterprises have valued the rapid growth of China's acrylic acid market, and seized the opportunity to expand the business network in China's high growth regions. In 2014, the competition in China's acrylic acid and esters sector will be intensified, and local enterprises, foreign-funded enterprises, and joint ventures will compete in the whole industry chain. Players in this sector will think highly of the development of downstream sectors, and the breakthrough of downstream demand will promote the benign development of the acrylic acid and esters sector.

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