

Note: Key data/information in this sample page is hidden, while in the report it is not.

1 Overview of fluor intermediates

In the 21st century, China becomes the largest organic intermediates producer and exporter in the world, with lower labor cost and environmental cost. In China, the development of fluorinated organic intermediates was started in 1970s and became a hot study point in 1980s. In 1990s, organic fluorides industry developed fast and now fluorine-containing organic intermediates are produced in a large scale and most of them are exported to India and Europe. According to the statistic, the capacity of fluor-intermediate was about [REDACTED]t/a in 2001, and its capacity is estimated to be over 150,000t/a in 2011. Nearly [REDACTED]% output of the fluor-intermediate is exported to many overseas countries, mainly to India.

There are at least four reasons that lead to prosperity of organic fluoride intermediate industry in China.

Firstly, as one of the major raw materials, fluorite is rather abundant in China.

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2.2 Comparison with different routes

In China, with the advantage of rich fluorite resource, most basic organic-fluorides has been produced for intermediates, and the main synthesis routes for substitution fluorine group are diazotization, halogen exchange and direct fluorination.

Diazotization, as a traditional technique route, has many disadvantages, while direct fluorination with many advantages needs more input on research and development for many producers in China.

Table 2.2-1 Comparison of three different synthesis techniques for fluor-intermediate in China, 2010

Technology route	Strength	Weakness	Main Fluorination
Diazotization	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
Halogen exchange	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
Direct fluorination	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]

Source: CCM

3 Applications of fluor intermediates

There are four main applications of organic fluoride intermediates in China.

- Pharmaceuticals
- Agrochemical
- Dyestuff
- Liquid crystal material

- Pharmaceuticals

China is one of the largest producers and exporters of pharmaceuticals in the world, with a total capacity over 2,000,000t/a and its output value estimated to be about USD192.33 billion in 2010. From 1978 to 2007, pharmaceutical industry's output value had grown consistently in China with an average annual growth rate of 16.80%. The industry has become one of the fastest-growing sectors in China. The domestic pharmaceuticals industry has maintained an increasing trend even after the financial crisis broke out in 2008. Thanks to the fast development in pharmaceuticals industry, the demand of pharmaceutical intermediates burst out in the past few years. Moreover, from 2010 to 2020, a great number of patent drugs will be out of date and generic drugs will witness another fast development.

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6 Fluor-intermediate forecast

Table 6-1 Forecast on demand volume for fluor-intermediate in China, 2012-2016

Series	Introduction	Annual growth rate
Fluorobenzene	The production of fluorobenzene series is overcapacity. Most producers produce this series of product according to the order. But the demand from pharmaceutical industry, especially ofloxacin flumequine series of medicines would still be the driving factor and the demand of this series of products will keep increasing in the coming five years.	3%~5%
Benzyl fluorides	Benzyl fluorides has developed quickly in recent years. With the strong demand from agrochemical, the output of this series of product would continue to increase, but at a slower pace in the coming five years.	5%~8%
Heterocyclic	Chinese producers are weak in synthesizing this series of product. The demand of this series from pharmaceutical and dyestuff would increase in the coming five years but the demand volume would be still small.	6%~10%
Aliphatic series	There are very few producers making this series of products in China. Aliphatic intermediates are mainly used in pesticides. So with the development of fluor-pesticides, the demand of this series of product would probably increase a lot in the following five years.	6%~15%

Source: CCM

The main application fields of fluor-intermediates are in pharmaceutical industry, agrochemical industry, dyestuff industry and liquid crystal material industry. And in the coming five years, it is estimated that the development of these four industries would maintain good momentum.

The four application fields of fluoride industry will be discussed as follows——pharmaceutical industry, agrochemical industry, dyestuff industry and liquid crystal material industry, and they also witness the development of fluoride industry.

In pharmaceutical industry, China's medicine manufacturers will develop new medicines in the future and the certain fluor-intermediates used for synthesizing new medicines will then witness an increasing trend.

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