



中国洗涤用品工业协会
China Cleaning Industry Association

Oleochemical Industry in China

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About CCIA

- A NGO & NPO established in September of 1983, A national organization of enterprises, public services, research institutions, information centers and educational units for soap, detergent, surfactant and oleochemical industries as well as some relative realms.

CCIA Objectives

- To promote sustainability in the industry;
- To establish and promote industrial regulations and standards;
- To reflect to the government the wishes and requirements of members as well as relevant industrial issues;
- To investigate and research issues appear in the development of the concerning line sectors, and set forth relevant suggestions to the government;
- To engaged in the statistics, collection, analysis, forecast and release of concerning information, to serve for government and industry;

- To promote supervision and release information for product quality, and promote high quality products and new technology;
- To hold the domestic and international technology communication, exhibitions and trade fairs;
- To get involved in technical training, education and grade assessment under consignment;
- To provide the service including promotion, application and consultation of new technology, processing and products from home and abroad;
- To undertake the advocacy activities for the industry and enterprises as well as science knowledge;
- To involve itself in public welfare undertaking and other activities in favor of the line sectors.

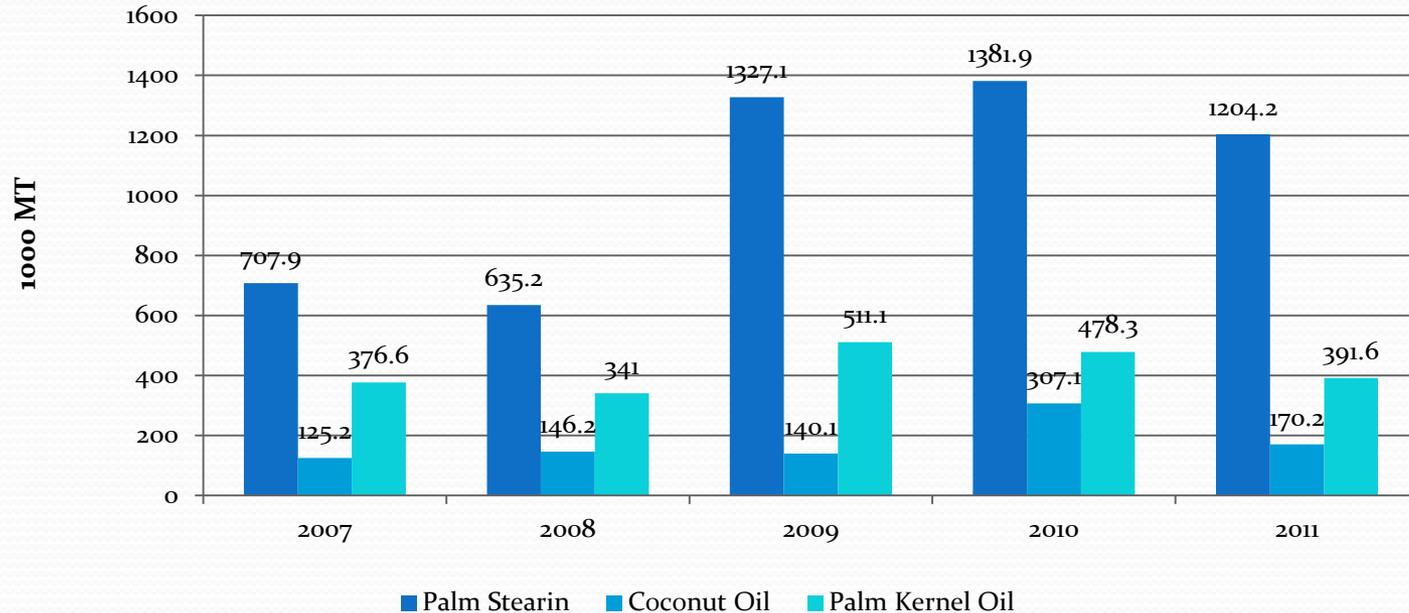
Growth Process of China

Oleochemical Industry

- **Initial Stage:** Before the 1990s, China oleochemical industry mainly developed its home-grown technology and was confined to soap production and soap co-products like stearic acid and glycerol. The production scale was small and the technology was relatively backward.
- **Developing Stage:** From the 1990s to the early 21st century, China's further reform and opening up policies had created a good economic and political environment. Through introducing the advanced technologies of Germany, Italy and other countries, the production scale of enterprises was greatly enlarged and the technical level was improved, which laid a good foundation for the development of China oleochemical industry.
- **Rapid Growth Stage:** Since 2003, the influx of some large multinational groups (mainly referring to those of Malaysia and Singapore) had brought in the advanced technologies and business principles. Meanwhile, many domestic enterprises began to build up or expand production devices, which greatly enhanced their production scale and concentration. Hence, the oleochemical industry entered into a rapid development period.

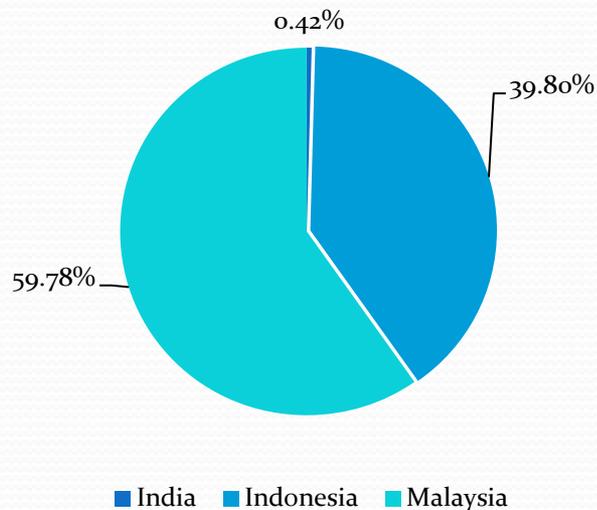
Oil Imports in China

China Import Quantity of Vegetable Oils

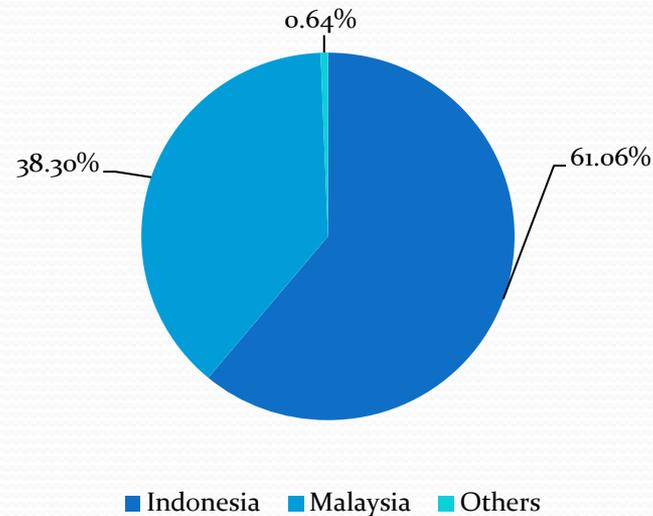


- China industrial vegetable oils mostly rely on import from abroad, and the total import quantity is nearly 2 million tons;
- Palm stearin is one of the major industrial oils, and its import quantity grows year by year, but due to the high price in 2011, the import decreased a bit;
- The ratio of PKO and Coconut oil imports was impact by their prices;
- The total imports decreased in 2011 due to the increase on the use of kitchen waste oils and animal oils within China

Palm Stearin Import by countries

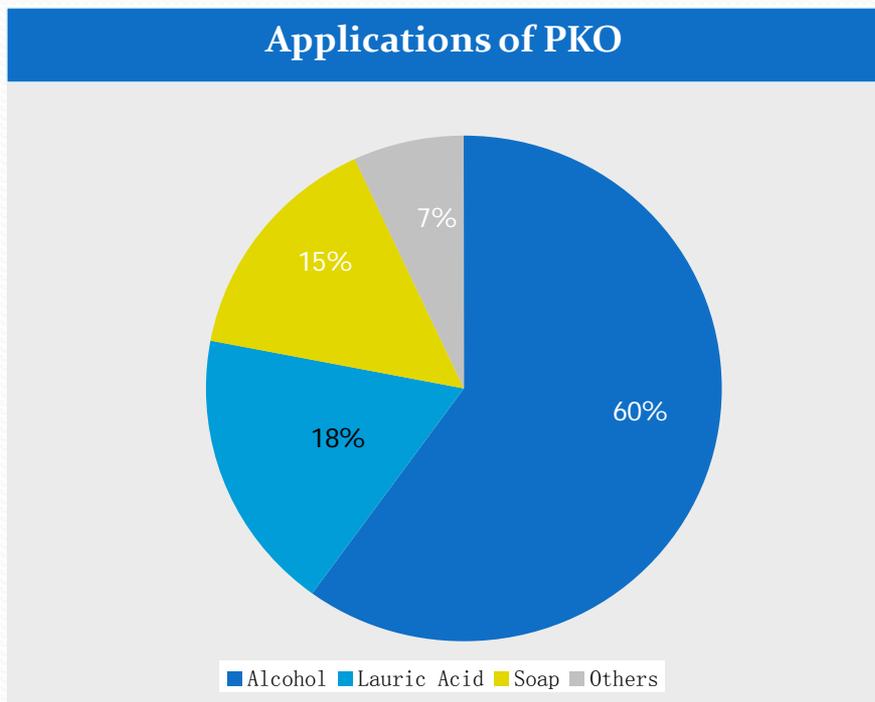


PKO Import by countries



- Palm Stearin are mainly imported from Indonesia and Malaysia, which account for 99% of the total import. The import volume from Malaysia accounted for 59.78% in 2011.
- PKO are also mainly imported from these 2 Southeast Asian countries, and the import volume from Malaysia accounted for 38.3% in 2011.

Applications of Oils



- Palm Stearin are mainly made into fatty acid, soap, shortening, candle etc., and its import quantity is impacted by the production of the above.
- The tariff reduction of Palm Stearin favored its import activity.
- PKO are mainly used to produce fatty alcohol (60%), and some of them are made into lauric acid, soap, candle and food as well.
- Coconut Oil are mainly made into soap and margarine, and part of them are made into fatty alcohol. (Only when the price gap is up to \$50/t)

Production of Oleochemicals in China

Distribution of China Fatty Acid Major Players

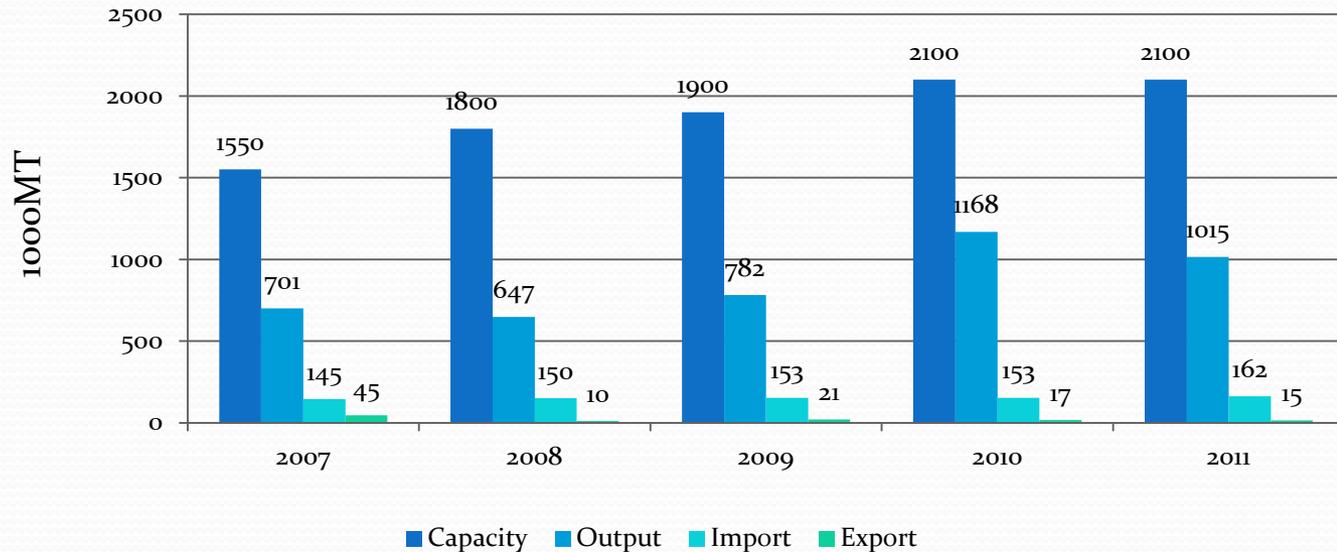


● At present, the number of major players on fatty acid is 16 in China, with a total capacity of 1.67 Million tons, which accounts for 80% of the country's total oil hydrolysis capacity. The rest 20% are mainly soap manufacturing equipment.

● The players are mainly in East China, and the capacity in only Jiangsu Province is over 900,000 tons/a, which accounts for 43% of the country's total capacity.

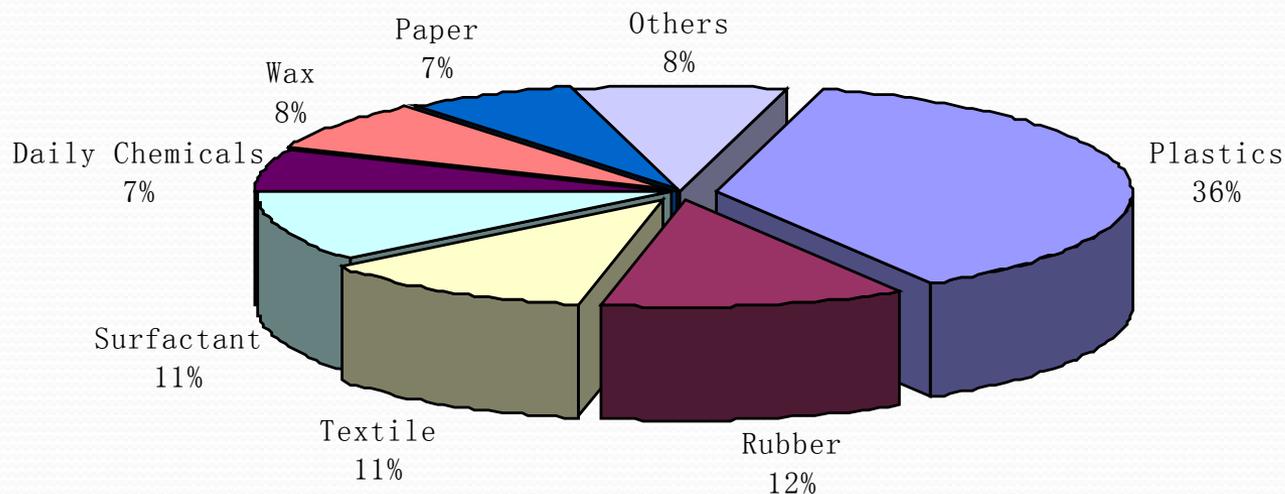
● The above capacity are mainly in those multinational corporations, such as Wilmar, KLK, Akzo Nobel etc., except for Rugao Shuangma, a local company which has the capacity of 250,000 tons.

Output, Import & Export of Fatty Acid



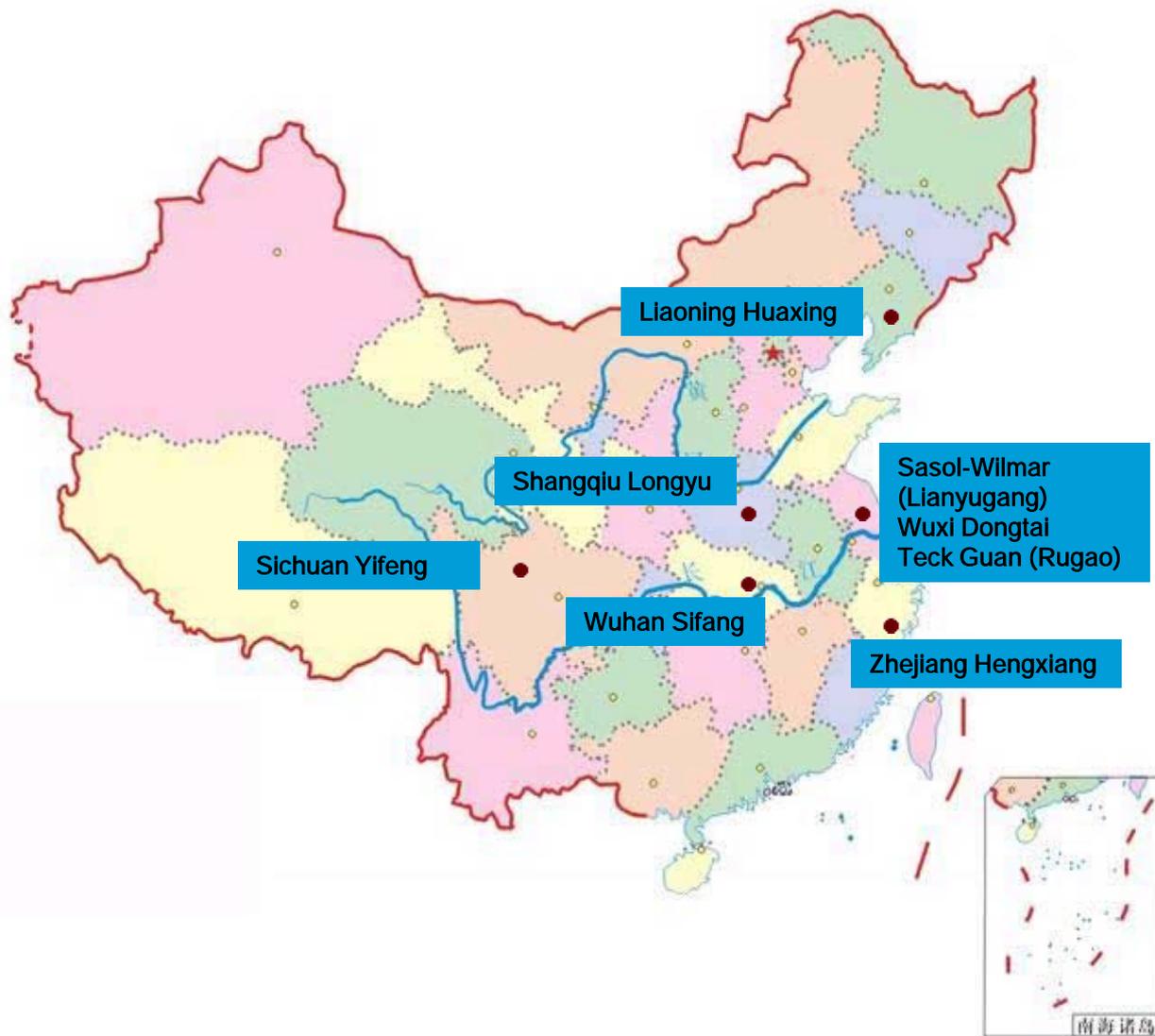
- The capacity shows no major change in recent years.
- Output of fatty acid was increasing every year, but only accounts for 50% of the total capacity. Excess capacity problem is serious in China.
- Import quantity was increasing every year, which meant the requirement was increasing. Fatty acid are mainly imported from Indonesia and Malaysia.
- Export has no much change these years.

Applications of Fatty Acid



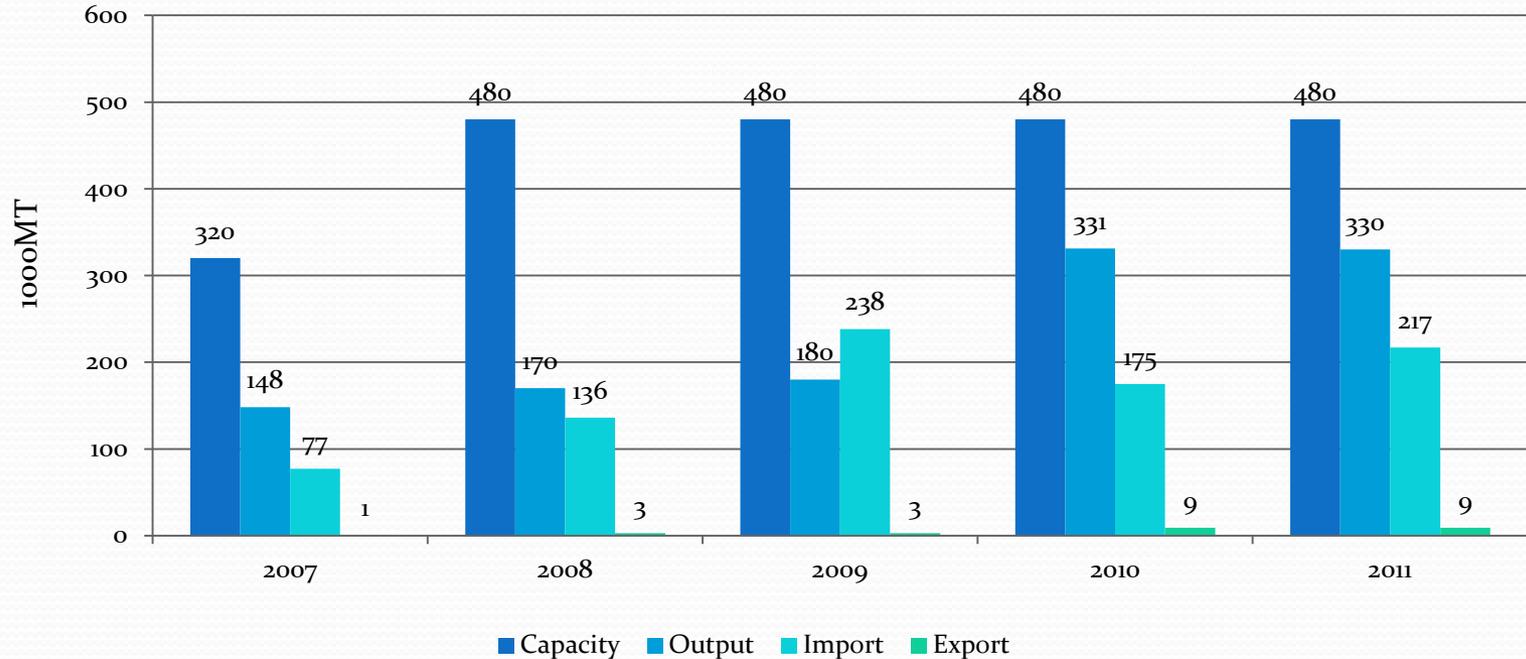
The biggest downstream of fatty acid is plastics, the others are rubber, textile and surfactant. All the above 4 industries used 70% of the total fatty acid.

Distribution of China Fatty Alcohol Major Players



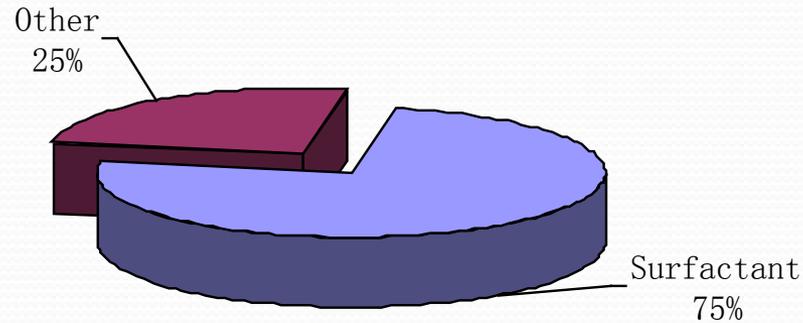
- At present, China has 8 major players on fatty alcohol, with the total capacity of 480,000 tons.
- The players are mainly in North and East China, which accounts for 43% and 42% of the total capacity respectively.
- The biggest 3 players, Liaoning Huaxing, Teck Guan (Rugao) and Sasol-Wilmar, account for 79% of the total capacity.
- Jiahua, a local chemical company, is building a 270,000 t/a facility in Zhejiang Province of East China. Then, the total capacity will be up to 750,000 tons.

Output, Import & Export of Fatty Alcohol



- The capacity of fatty alcohol has no much change in recent years, but in the near future, the total capacity will increase greatly along with a new facility of 270,000 tons building in Zhejiang.
- Output of fatty alcohol is increasing year by year due to some new facilities such as Sasol-Wilmar and Teck Guan (Rugao) putting into operation.
- Import quantity is increasing, which means the requirement is increasing. In particular, according to China ASEAN Free Trade Agreement, the tariff of fatty alcohol reduced to be 0 in 2009, as a result, the import quantity increased a lot.
- Fatty alcohol is mainly imported from Malaysia and Indonesia, which accounts for 67% of the total import quantity.

Applications of Fatty Alcohol



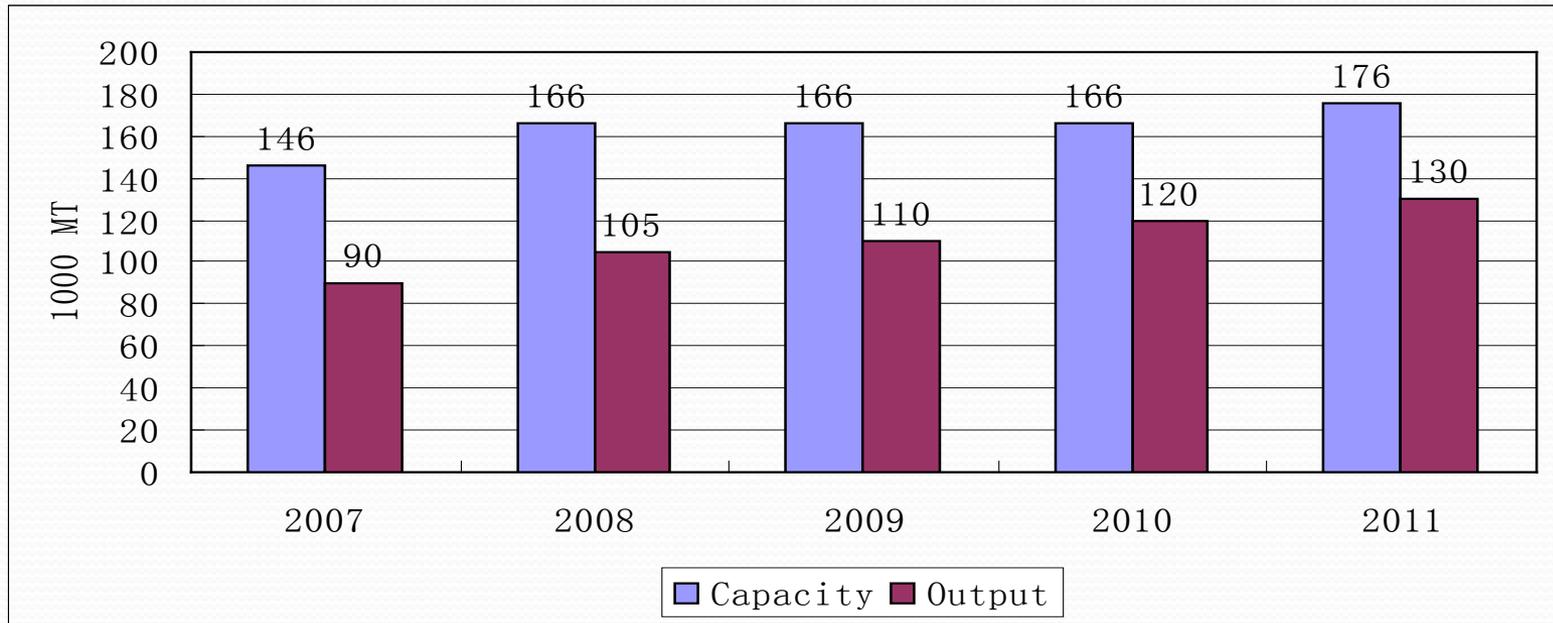
- At present, fatty alcohol is mainly used in surfactant preparation, and other applications are in textile auxiliaries and plastic additives.
- In future, fatty alcohol will enjoy great market potential in food, papermaking, textile, plastic and building materials. In special, plastic additives made from fatty alcohol will grow very fast.

Distribution of China Fatty Amine Major Players



- At present, China has 5 major manufacturers on fatty amine, with a total capacity of 165,000 tons, which accounts for 94% of the country's total capacity.
- Akzo Nobel (Boxing) and Rhodia Feixiang (has been taken over by Solvay) account for 74% of total capacity.
- Concentration of production is very high.
- Wilmar is building a fatty amine facility with the capacity of 80,000 t/a, so the total capacity will become 256,000 tons in the near future.

Capacity & Output of Fatty Amine



- The capacity of fatty amine in China has almost no change these years.
- The output is increasing steadily, which reached 130,000 tons in 2011.
- Fatty amine and its derivatives are widely used in cationic surfactant, textile softener, antistatic agent, bactericide, preservative and emulsifier.

Glycerin

- Output of glycerin produced by oil hydrolysis was 130,000 tons in 2011 in China, while the import quantity was 121,500 tons.
- The import quantity of crude glycerin was 395,000 tons in 2011, with a growth of 19%. Thus, China glycerin consumption is over 450,000 tons now.
- As a by-product of biodiesel, crude glycerin is very cheap, but the impurities in it like esters and salts make a great pressure onto the environment.
- Several epichlorohydrin facilities using glycerin has been commissioned in China, with a total capacity of almost 100,000 tons/a. Other facilities of total 280,000 tons/a are under construction, and are expected to be commissioned in 2013.
- The facilities of 1,3-propylene glycol made from glycerin are under construction now, and it's expected that the total capacity will be 140,000 tons/a.
- The projects of glycerin producing 1,2-propylene glycol are under developing.

Review of 2011

- Since the Indonesian government implemented new palm oil export tariff policy, China oleochemical enterprises were faced with great pressure.
- Palm oil price was volatile, and stearic acid market showed a clear downward trend. In order to develop the raw material source channels, some local companies like Rugao Shuangma Chemical and Cambridge Olein have established palm oil plantations and oleochemical factories in Indonesia.
- The depressing real estate industry affected the demand for glycerin, however, the import of crude glycerin hit a record high due to its low price.
- The Dutch chemical giant Akzo Nobel completed the acquisition of Boxing Huarun Olechemicals. So the two China's fatty amine industry leaders (the other is Feixiang Chemical acquired by Rhodia before) were both acquired by multinational companies.
- Due to the weak demand of China's domestic fatty acid downstream market, the output of stearic acid and soap grain fell a bit.
- Influenced by the sharp fall of nearly 60% of the lauric acid price from the beginning to the end of the year 2011, the price of natural fatty alcohol dropped from 30,000 yuan/ton at the 1st quarter to 16,000 yuan/ton at the end of 2011, with a fall of 46%.

Status of 2012

- The world economy is faced with lots of instability and uncertainty in 2012, and the European debt crisis will be the biggest risk, which will seriously affect China's oleochemical industry.
- Factors like the price decline of raw materials (palm oil, etc.) as well as rising labor cost has brought huge pressure to China's domestic oleochemical enterprises.
- The market downturns of 2011 and the 1st half of 2012, along with excess capacity, have resulted in the increasing inventory pressure.
- Annexation and reorganization between enterprises is still continuing.
- The output of fatty acid, fatty alcohol and fatty amine is expected to be little changed.
- As the epichlorohydrin and other production equipments are put into operation one after another, the demand for glycerin will increase greatly so as to enhance crude glycerin import.

Conclusion

- China's industrial oils and fats mainly rely on import, among which, the palm oil & palm kernel oil are imported from Malaysia & Indonesia and the coconut oil from Philippines.
- After 2003, China oleochemical industry began to enter a rapid development period. Up to now, the whole capacity of oil hydrolysis is 2.1 million tons, fatty alcohol 480,000 tons, fatty amine 165,000 tons, mainly distributed in North and East China. The foreign enterprises take a leading role.
- The import tariff of oils and fats is higher than that of other oleochemicals like fatty acid and fatty alcohol, which causes a shock to China's oleochemical enterprises.
- The global economy downturn and oil price fluctuation in recent years bring a huge pressure to China's oleochemical enterprises.
- In future, with the increasing demand for oleochemicals, China oleochemical industry will face more and more opportunities as well as challenges.



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Thank You