

Survey of Fluorine Industry in China 2023

Researched & Prepared by:

Kcomber Inc.

Copyright by Kcomber Inc.

Any publication, distribution or copying of the content in this report is prohibited.

Contents

Executive summary	.....
Methodology	.....
1 Brief introduction of fluorine industry in China	.....
2 Fluorite supply in China	.....
2.1 Overview of fluorite reserves in China	.....
2.2 Production situation of fluorite	.....
2.3 Price	.....
2.4 Export and import	.....
2.5 Forecast trends	.....
3 Inorganic fluorides in China	.....
3.1 Brief introduction of inorganic fluorides in China	.....
3.2 Anhydrous hydrogen fluoride	.....
3.2.1 Production situation	.....
3.2.2 Price	.....
3.2.3 Import and export	.....
3.2.4 Future trends	.....
3.3 Aluminum fluoride	.....
3.3.1 Production situation	.....
3.3.2 Price	.....
3.3.3 Import and export	.....
3.3.4 Future trends	.....
3.4 Cryolite	.....
3.4.1 Production situation	.....
3.4.2 Price	.....
3.4.3 Import and export	.....
3.4.4 Future trends	.....
3.5 Lithium hexafluorophosphate	.....
3.5.1 Production situation	.....
3.5.2 Price	.....
3.5.3 Import and export	.....
3.5.4 Future trends	.....
3.6 Others	.....
4 Organic fluorides in China	.....
4.1 Fluorine refrigerants	.....
4.1.1 R22	.....
4.1.1.1 Production situation	.....
4.1.1.2 Price	.....
4.1.1.3 Export	.....
4.1.1.4 Consumption	.....
4.1.1.5 Future trends	.....
4.1.2 R134a	.....
4.1.2.1 Production situation	.....
4.1.2.2 Price	.....

- 4.1.2.3 Future trends
- 4.1.3 R32, R125 and R410a
- 4.1.3.1 Production situation
- 4.1.3.2 Price
- 4.1.3.3 Future trends
- 4.1.4 R1234yf
- 4.2 Fluoride polymers
- 4.2.1 PTFE
- 4.2.1.1 Production situation
- 4.2.1.2 Price
- 4.2.1.3 Export and import
- 4.2.1.4 Future trends
- 4.2.2 PVDF
- 4.2.2.1 Production situation
- 4.2.2.2 Price
- 4.2.2.3 Export and import
- 4.2.2.4 Future trends
- 4.2.3 FEP
- 4.2.4 Fluor rubber
- 4.2.5 Monomer
- 4.2.5.1 HFP
- 4.2.5.2 CTFE
- 4.2.5.3 VDF

LIST OF TABLES

- Table 2.2-1 Main active fluorite manufacturers in China, 2021–2022
- Table 2.4-1 Imports and exports of fluorite (CaF₂97%) in China, 2018–2022
- Table 2.4-2 Imports and exports of fluorite (CaF₂≤97%) in China, 2018–2022
- Table 3.2.1-1 Main active AHF manufacturers in China, 2021–2022
- Table 3.2.1-2 Capacity and share of main AHF manufacturers in China, 2021–2022
- Table 3.2.1-3 Output and share of main AHF manufacturers in China, 2021–2022
- Table 3.2.3-1 Imports and exports of AHF in China, 2018–2022
- Table 3.2.4-1 List of projects expected to be built up and operate in the near future
- Table 3.3.1-1 Main active aluminum fluoride manufacturers in China, 2021–2022
- Table 3.3.3-1 China's imports and exports of aluminum fluoride (anhydrous), 2018–2022
- Table 3.3.3-2 China's imports and exports of other aluminum fluoride, 2018–2022
- Table 3.4.1-1 Main active manufacturers of cryolite in China, 2021–2022
- Table 3.4.3-1 Imports and exports of cryolite in China, 2018–2022
- Table 3.5.1-1 Main active manufacturers of LiPF₆ in China, 2021–2022
- Table 3.5.1-2 Production and share of top five LiPF₆ manufacturers in China, 2021–2022
- Table 3.5.3-1 Imports and exports of LiPF₆ in China, 2018–2022
- Table 3.5.4-1 Capacity expansion of LiPF₆ in China in the near future
- Table 3.6-1 Main active SF₆ manufacturers in China, 2021–2022
- Table 3.6-2 Main active LiFSI manufacturers in China, 2021–2022

Table 4.1.1.1-1 Active R22 manufacturers in China, 2021–2022

Table 4.1.1.3-1 Exports of R22 in China, 2018–2022

Table 4.1.1.4-1 Consumption of R22 in non-ODS field in China, 2018–2022

Table 4.1.1.4-2 Consumption quota of R22 in ODS field in China, 2018–2022

Table 4.1.1.4-3 R22 quota allocation for room air conditioner industry, 2022

Table 4.1.1.4-4 R22 quota allocation for refrigeration and air conditioning in industrial and commercial application, 2022

Table 4.1.2.1-1 Active R134a manufacturers in China, 2021–2022

Table 4.1.3.1-1 Main active R32 manufacturers in China, 2021–2022

Table 4.1.3.1-2 Main active R125 manufacturers in China, 2021–2022

Table 4.1.3.1-3 Main active R410a manufacturers in China, 2021–2022

Table 4.1.4-1 Situation of the production of R1234yf in China, 2022

Table 4.2.1.1-1 Main active manufacturers of PTFE in China, 2021–2022

Table 4.2.1.1-2 Capacity and share of PTFE manufacturers in China, 2021–2022

Table 4.2.1.1-3 Output and share of PTFE manufacturers in China, 2021–2022

Table 4.2.1.3-1 China's imports and exports of PTFE, 2018–2022

Table 4.2.2.1-1 Main active manufacturers of PVDF in China, 2021–2022

Table 4.2.2.1-2 Production share of top three PVDF manufacturers in China, 2020–2021

Table 4.2.2.3-1 Imports and exports of other kinds of fluoride polymers in China, 2018–2022

Table 4.2.3-1 Active manufacturers of FEP in China, 2021–2022

Table 4.2.4-1 Active manufacturers of fluor rubber in China, 2021–2022

Table 4.2.5.1-1 Main active manufacturers of HFP in China, 2021–2022

Table 4.2.5.2-1 Manufacturers of CTFE in China, 2021–2022

Table 4.2.5.3-1 Manufacturers of VDF in China, 2022

LIST OF FIGURES

Figure 2.1-1 Global fluorite reserves, 2018–2022

Figure 2.1-2 Fluorite reserves in China, 2018–2022

Figure 2.2-1 Fluorite production in China, 2018–2022

Figure 2.3-1 Monthly ex-works price of fluorite (CaF₂97%) in China, Jan. 2018–June 2023

Figure 2.4-1 Import and export volume of fluorite in China, 2018–2022

Figure 2.4-2 Top ten fluorite import origins to China by volume, 2022

Figure 2.4-3 Top ten export destinations of fluorite from China by volume, 2022

Figure 3.2.1-1 Capacity and output of AHF in China, 2018–2022

Figure 3.2.2-1 Monthly ex-works price of AHF in China, Jan. 2018–June 2023

Figure 3.2.3-1 Import and export of AHF in China, 2018–2022

Figure 3.2.3-2 Top import origins of AHF to China by volume, 2022

Figure 3.2.3-3 Top ten export destinations of AHF from China by volume, 2022

Figure 3.3.1-1 Capacity and output of aluminum fluoride in China, 2018–2022

Figure 3.3.2-1 Monthly ex-works price of aluminum fluoride in China, Jan. 2018–June 2023

Figure 3.3.3-1 China's exports of aluminum fluoride, 2018–2022

Figure 3.3.3-2 Top ten export destinations of aluminum fluoride from China by volume, 2022

Figure 3.4.1-1 Capacity and output of cryolite in China, 2018–2022

Figure 3.4.2-1 Monthly ex-works price of cryolite in China, Jan. 2018–June 2023

- Figure 3.4.3-1 Imports and exports of cryolite in China, 2018–2022
- Figure 3.4.3-2 Top five import origins of cryolite in China by volume, 2022
- Figure 3.4.3-3 Top ten export destinations of cryolite from China by volume, 2022
- Figure 3.5.1-1 Capacity and output of LiPF₆ in China, 2018–2022
- Figure 3.5.2-1 Monthly ex-works price of LiPF₆ in China, Jan. 2018–June 2023
- Figure 3.5.3-1 Import and export of LiPF₆ in China, 2018–2022
- Figure 3.5.3-2 Top five export destinations of LiPF₆ from China by volume, 2022
- Figure 3.6-1 Capacity and output of SF₆ in China, 2020–2022
- Figure 4.1.1.1-1 Capacity and output of R22 in China, 2018–2022
- Figure 4.1.1.1-2 Production quota of R22 in China, 2018–2022
- Figure 4.1.1.2-1 Ex-works price of R22 in China, Jan. 2018–June 2023
- Figure 4.1.1.3-1 Export volume of R22 in China, 2018–2022
- Figure 4.1.1.3-2 Top ten export destinations of R22 from China by volume, 2022
- Figure 4.1.1.4-1 Apparent consumption of R22 in China, 2018–2022
- Figure 4.1.2.1-1 Capacity and output of R134a in China, 2018–2022
- Figure 4.1.2.2-1 Ex-works price of R134a in China, Jan. 2018–June 2023
- Figure 4.1.3.1-1 Capacity and output of R32 in China, 2018–2022
- Figure 4.1.3.1-2 Capacity and output of R125 in China, 2018–2022
- Figure 4.1.3.1-3 Capacity and output of R410a in China, 2018–2022
- Figure 4.1.3.2-1 Ex-works price of R32, R125 and R410a in China, Jan. 2018–June 2023
- Figure 4.2.1.1-1 Capacity and output of PTFE in China, 2018–2022
- Figure 4.2.1.2-1 Ex-works price of PTFE in China, Jan. 2018–June 2023
- Figure 4.2.1.3-1 China's imports and exports of PTFE, 2018–2022
- Figure 4.2.1.3-2 Top ten export destinations of PTFE from China by volume, 2022
- Figure 4.2.1.3-3 Top ten import origins of PTFE in China by volume, 2022
- Figure 4.2.2.1-1 Capacity and output of PVDF in China, 2018–2022
- Figure 4.2.2.2-1 Ex-works price of PVDF in China, Jan. 2018–June 2023
- Figure 4.2.2.3-1 Imports and exports of other kinds of fluoride polymers in China, 2018–2022
- Figure 4.2.2.3-2 Top ten import origins of other kinds of fluoride polymers in China by volume, 2022
- Figure 4.2.2.3-3 Top ten export destinations of other kinds of fluoride polymers from China by volume, 2022
- Figure 4.2.3-1 Capacity and output of FEP in China, 2018–2022
- Figure 4.2.4-1 Capacity and output of fluor rubber in China, 2018–2022
- Figure 4.2.5.1-1 Capacity and output of HFP in China, 2018–2022
- Figure 4.2.5.1-2 Ex-works price of HFP in China, Jan. 2018–June 2023
- Figure 4.2.5.2-1 Capacity and output of CTFE in China, 2020–2022



1. Introduction

2. Approach for this report

The report is drafted by diverse methods as follows:

X) Desk research

The sources of desk research are various, including published magazines, journals, government statistics, industrial statistics, customs statistics, association seminars as well as information from the Internet. A lot of work has gone into the compilation and analysis of the obtained information. When necessary, checks have been made with all kinds of suppliers regarding market information such as key manufacturers, key end-users, production, consumption, export, demand and so on.

X) Telephone interviews

CCM has carried out extensive telephone interviews in order to track the actual market situation of the fluorine industry in China.

Interviewees cover:

- Major manufacturers of fluorite
- Major manufacturers of inorganic fluorides
- Major manufacturers of organic fluorides
- Major manufacturers of semi-finished products
- Major manufacturers of finished products
- Major traders
- Associations

X) Network search

CCM employs a network to contact industry participants by using BXB website and software.

X) Data processing and presentation

The data collected and compiled is variously sourced from:

CCM's database

- Published articles from periodicals, magazines, journals and third party databases
- Statistics from governments and international institutes
- Telephone interviews with domestic manufacturers, joint ventures, service suppliers and government agencies

- Third-party data providers
- Customs statistics
- Comments from industrial experts
- Information from the Internet

The data have been combined and cross-checked to make the report as accurate and methodologically sound as possible. Throughout the process, a series of discussions have been held within CCM to analyse the data and draw appropriate conclusions.

- Glossary

CAGR: compound annual growth rate

AHF: anhydrous hydrogen fluoride

HCFC: hydrochlorofluorocarbon

RXX: difluorochloromethane

RXXXa: X,X,X,X-tetrafluoroethane

RXX: difluoromethane

RXXX: pentafluoroethane

RXXXa: mixture of RXX and RXXX

HFP: hexafluoropropylene

PTFE: polytetrafluoroethylene

PVDF: polyvinylidene fluoride

CTFE: chlorotrifluoroethylene

VDF: vinylidene fluoride

TFE: tetrafluoroethylene

- Unit

RMB: currency unit in China, also called Yuan

USD: currency unit in the US, also called US Dollar

Tonne: ton, equals to metric ton in this report

/t: per tonne

t/a: tonne per year, tonne per annual

kg: kilogram

Source: The People's Bank of China

3. Executive summary

Fluorine industry has been one of the fastest developing and most promising chemical industries in China. China has become one of the largest production and consumption areas of fluorine chemicals. There are four important sectors for China's fluorine industry, consisting of inorganic fluoride, fluorine refrigerant, fluoropolymer and fluor-intermediate.

According to statistics from the United States Geological Survey, China's fluorite reserves remained at XX million tonnes from XXXX–XXXX and rose to XX million tonnes in XXXX, ranking second in the world. In XXXX–XXXX, China's fluorite output stayed above X million tonnes. To protect the fluorite resources, China has established fluorite industry access standards and issued strict policies.

Great progress has been made in the research and development of inorganic fluorides in China. Inorganic fluorides have been widely used in chemical, mechanical, optical instrument, electronic and medical fields and have become important chemical products in the national economy. China is the largest producer of anhydrous hydrogen fluoride, aluminum fluoride and cryolite in the world, with the production capacity of X,XXX,XXX t/a, X,XXX,XXX t/a and XXX,XXX t/a respectively in XXXX. In addition, the production of lithium hexafluorophosphate has developed fast in the past five years and its capacity reached XXX,XXX t/a in XXXX.

China agreed to take steps to phase out HCFCs. To achieve targets set in the phaseout plan of HCFCs, China has implemented quota management system for production and use of HCFCs since XXXX. In recent years, the total production quotas of HCFCs have seen a general decrease and have been concentrated in large enterprises. In XXXX, a decrease was seen in both the output and consumption of RXX. As a refrigerant, RXX production dropped because of strict environmental protection policies and the increasing use of other HFCs, but its use as a raw material to produce tetrafluoroethylene has been on the rise. As HFCs have been substituting HCFCs, both the production and consumption of HFCs such as RXXXa, RXX, RXXX and RXXXa have increased. In XXXX, quota of the third-generation refrigerants will be implemented, pushing the producers in the industry to compete for more quotas by increasing its production or sales.

There are two main varieties of fluoropolymer in China, including fluororesin and fluororubber. The fluoropolymer industry, especially fluororesin, is developing very quickly in China, though still facing many problems such as inefficient technology and the lack of high-end products. PTFE is the principal product of fluororesins in China, followed by PVDF and FEP. Fluororesins are widely used in coatings, sealing, architecture, electronics and other fields. As to fluororubbers, along with the development of automobile and

petrochemical industries, the industry developed rapidly in XXXX–XXXX. However, in XXXX, the development of fluor rubbers industry slowed down due to the lack of high-end products and the shrinking of low and medium-end markets.

4. What is in the report?

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

...

1 Brief introduction of fluorine industry in China

Fluorine chemical products with the characteristics of chemical resistance, good resistance in high and low temperatures, aging resistance, low friction, excellent insulation, etc., are widely applied in many fields. In recent years, the fluorine chemical industry has been one of the fastest developing and most promising chemical industries in China.

China's fluorine chemical production can be dated back to the XXXXs. With abundant fluorite reserves, the industry has grown into a large-scale one after more than XX-year development. At present, China's fluorine industry is in the process of transformation and upgrading, turning from a producer of primary fluorine chemical products to a producer of fluorine-containing fine chemical products. There are three important sectors of China's fluorine industry.

Fluorite Reserves

- XX% Fluorite
- ≤XX% Fluorite

Inorganic fluorides

- Anhydrous hydrogen fluoride
- Aluminum fluoride
- Cryolite
- Lithium hexafluorophosphate
- Others

Organic fluorides

- Refrigerants

- RXX
- RXXXa
- RXX
- RXXX
- RXXXa
- Others

- Fluor polymers

- PTFE
- PVDF
- FEP
- Others

- Others

...

3.2.1 Production situation

...

Table 3.2.1-1 Main active AHF manufacturers in China, 2021–2022

No.	Producer	Location	Capacity, t/a		Output, tonne	
			2022	2021	2022	2021
X	XXXXXXXXXXXX XXX XXXXXXXXXX XXXX XXXX XXXXXXXXX XXXXX XX XXXXXXXXXXXX XXXXXXXXXXXX XXXX XXXXX	XXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
X	XXXXXXXX XXXXX XXXX	XXXXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
X	XXXXXXXX XXXXXXX XXXXXXXXXXXX XXXX XXXX	XXXXXXXXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXXXXX XXXXXXX XXXXXX XXXXXXX XXXXXXXXXXXX XXXX XXXX	XXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXX
X	XXXXXXXX XXXXXXX XXXXXXXXXX XXXXXXXXXXXX XXXX	XXXXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX



	XXXX					
X	XXXXXXXX XXXX XXXX XXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
X	XXXXXX XXXXXX XXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
X	XXXXXXXX XXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
X	XXXXXXXX XXXXXX XXXXXXXXXXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
XX	XXXXXXXX XXXXXX XXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
XX	XXXXXX XXXXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
XX	XXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXX XXXXXXXXXXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
XX	XXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
XX	XXXXXXX XXXXXXXXXX XXXXX XXXXXX XXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
XX	XXXXXXXX	XXXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX

	XXXXXXXXXXXXXXXX XXXXXXXXXX XXXX XXXX					
XX	XXXXXXXX XXXXXX XXXXXX XXXXXXXXXXXXXXXX XXX XXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XX	XXXXXXXXXX XX XXXXXXXXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XX	XXXXXX XXXXXX XXXXXXXXXX XXXX XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XX	XXXXXX XXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XX	XXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXXXX XXXX XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XXXXXX			XXXXXXXXXX	XXXXXXXXXX	XXXXXX	XXXXXX
XXXXXX			XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX

Source:CCM

...

3.3.1 Production situation

Aluminum fluoride is an important material used in electrolytic aluminum industry and nearly XX% of aluminum fluoride is used in this area.

According to the China Inorganic Salt Industry Association, China's aluminum fluoride industry presents the following characteristics:

- The industry is in serious overcapacity, with large inventory and low operating rate;

- With improved aluminum fluoride quality, unit consumption of aluminum fluoride for electrolytic aluminum decreases.

As the largest aluminum fluoride provider in the world, China had X,XXX,XXX t/a capacity of aluminum fluoride in XXXX–XXXX. However, the capacity decreased to X,XXX,XXX t/a in XXXX–XXXX, as some manufacturers cut down their capacity or switched to AHF production.

In XXXX–XXXX, the output of aluminum fluoride increased slightly, reaching XXX,XXX tonnes in XXXX. Hit by the COVID-XX pandemic and the policy of de-inventory, operating rate of aluminum fluoride in China lowered in the past two years. As a result, China's aluminum fluoride output fell in XXXX and further decreased to XXX,XXX tonnes in XXXX. In XXXX, the output of aluminum fluoride increased significantly thanks to the rising demand in electrolytic aluminum industry.

...

In China, the production of aluminum fluoride is mainly concentrated in Henan Province and Shandong Province. Do-Fluoride Chemicals Co., Ltd. was the largest aluminum fluoride manufacturer in XXXX, with a capacity of XXX,XXX t/a. However, it was reported by the company that the operating rate dropped to just XX% in XXXX.

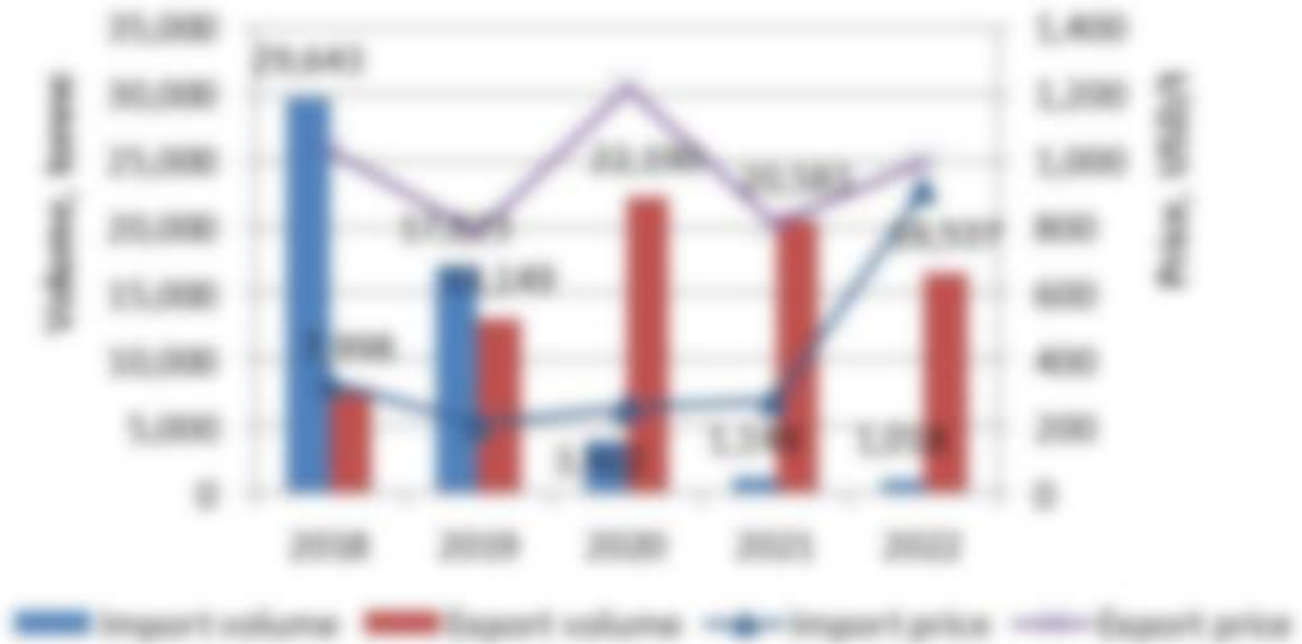
The second largest producer was Shandong Bofeng Lizhong Chemical Co., Ltd., with XX,XXX t/a capacity, but its operating rate declined a lot in XXXX, mainly affected by weak demand. Yizhang Hongyuan Chemical Co., Ltd. ranked third with XX,XXX t/a capacity.

...

3.4.3 Import and export

...

Figure 3.4.3-1 Imports and exports of cryolite in China, 2018–2022



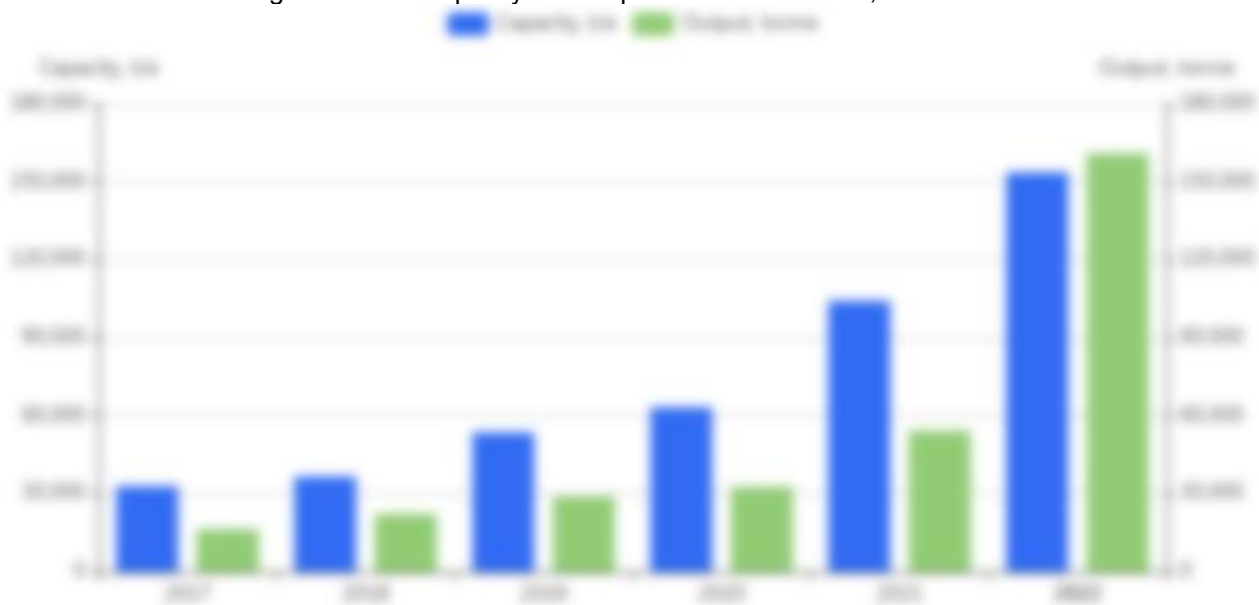
Source: China Customs & CCM

...

3.5.1 Production situation

...

Figure 3.5.1-1 Capacity and output of LiPF₆ in China, 2018–2022



Source:CCM

...

4.1.1.4 Consumption

...

Table 4.1.1.4-1 Consumption of R22 in non-ODS field in China, 2018–2022

Year	Consumption volume, tonne
XXXX	XXXXXXXX
XXXX	XXXXXXXX
XXXX	XXXXXXXX
XXXX	XXXXXXXX
XXXX	XXXXXXXX

Source:CCM

...

4.1.1.5 Future trends

Responding to the Montreal Protocol, the pace of worldwide HCFCs elimination has been stepped up. Developed countries have nearly completed the task, much ahead of developing countries. As one of the largest developing countries, China plays an important role in the work because its production and consumption of HCFCs account for the largest share of the world's totals.

In China, although RXX is still one of the main refrigerants, it will be gradually replaced by other eco-friendly refrigerants such as RXXXa, RXXXa etc., and its demand will decrease. However, as a raw material for the production of PTFE, HFP and other new refrigerants, RXX's output is expected to keep increasing.

To sum up, the production quota of RXX as a refrigerant will gradually decrease in the next few years, and more and more downstream manufacturers will have to switch to its substitutes. However, it is predicted

that the total consumption of RXX may rise rather than fall, bolstered by the demand from downstream sectors including PTFE and HFP.

...

4.1.2.1 Production situation

...

Table 4.1.2.1-1 Active R134a manufacturers in China, 2021–2022

No.	Producer	Location	Capacity, t/a		Output, tonne	
			XXXX	XXXX	XXXX	XXXX
X	XXXXXXXX XXXXX XXXX XXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXXXXX XXXXXX XXXXXXXX XXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXX XXXXXXXX XXXXXX XXXXXXXXXXXXXXXX XXXX XXXX	XXXXX XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXXXXX XXXXXX XXXXXXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXX XXXXXXXX XXXX XXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXXXXX XXXXXXXX XXXXX XXXXXXXXXXX XXXX XXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXXX XXXXXXXX XXXXXX XXXX XXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
X	XXXXXXXX XXXXXX XXX XXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXX
X	XXXX XXXXXXX XXXXXXXX XXXX XXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXX
X	XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXXXXXX XXX XXXXXXXX XXXX XXXX	XXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXX

XX	XXXXXXXX XXXXXXXX XXXXXX XXX XXXXXXXXXX XXXX XXXX	XXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XX	XXXXXXXX XXXXX XXXX	XXXXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XX	XXXXXX XXXXXXXXXXXXXXXX XXXXXXXXXX XXXX XXXX	XXXXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
XXXXX			XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

Source:CCM

...

4.1.3.1 Production situation

- RXX

RXX is a substitute for RXX. Being one of the major refrigerants in China, RXX is mainly used as an air conditioner refrigerant and a raw material for RXXXa.

In recent years, the structure of refrigerant use in domestic air conditioning industry has changed significantly. Driven by market and policy trends, the share taken up by RXX refrigerant has rapidly enlarged.

In China, RXX capacity and output increased at a CAGR of XX.X% and XX.X% respectively during XXXX–XXXX. Since XXXX, most of RXX manufacturers expanded capacity and actively improved sales to get larger production quota after XXXX. Thus, the capacity and output increased significantly in XXXX. In XXXX, although the output of RXX continued to grow, the capacity remained basically unchanged as most of the expansion projects were completed before XXXX.

In XXXX, in the absence of new capacity coming on stream, strong players increased production, while producers with limited strength were hesitant to expand.

...

In XXXX, among all the domestic air conditioner manufacturers, only Gree Electric Appliances Inc. of Zhuhai (Gree) officially launched the air conditioners with RXX. Demand for RXX from air conditioner

industry accounted for only X% to XX% of the output of RXX. However, the market share of RXX in air conditioners has achieved a significant increase since XXXX, as the share of RXX in the air conditioning sector dwindled.

In XXXX, major RXX producers mainly concentrated in Shandong and Zhejiang provinces, and their combined capacity and output of RXX accounted for XX.X% and XX.X% respectively of the totals in China.

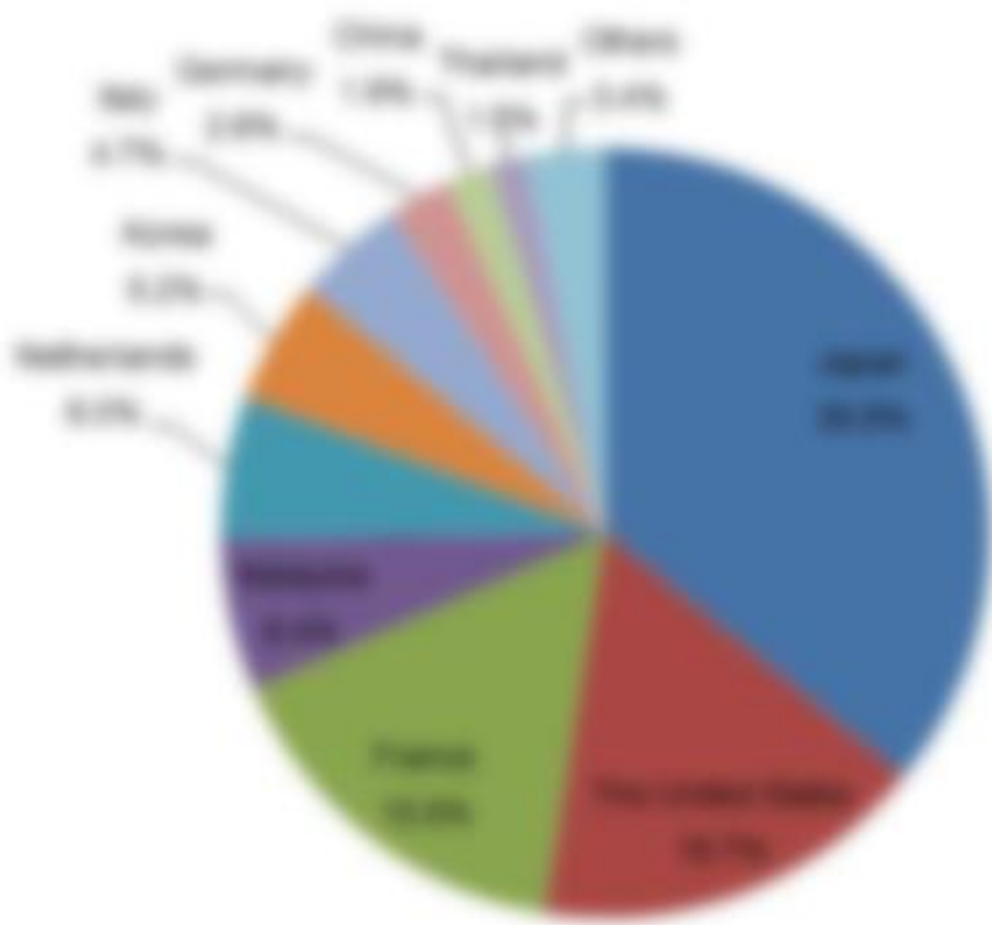
In XXXX, Zhejiang Juhua Co., Ltd. was the largest RXX producer in China, with the capacity and output of XXX,XXX t/a and XX,XXX tonnes, accounting for XX.X% and XX.X% of the domestic totals respectively. Dongyue Group Ltd. came in second.

...

4.2.1.3 Export and import

...

Figure 4.2.1.3-1 Top ten import origins of PTFE in China by volume, 2022



Source: China Customs & CCM

...

4.2.4 Fluor rubber

...

Subject to the backwardness of processing and application technology, the production of fluor rubber products is mainly concentrated in foreign giants. Compared with foreign countries, China still lags behind in the variety and application of fluor rubber products. In addition, fluor rubber localization rate is not high in China, and high-end fluor rubber products still rely on import to meet market demand.

In XXXX–XXXX, the capacity of fluor rubber in China fluctuated; it was XX,XXX t/a in XXXX. The output rebounded in XXXX after declines in XXXX and XXXX. During XXXX–XXXX, increasing demand from downstream markets, especially in the automotive industry, led to a surge in the output of fluor rubber.

In XXXX, the development pace of fluor rubber industry of China remained at a low level. On the one hand, the growing market of NEVs in China have been slowly taking up the share of traditional internal combustion engine vehicles market which is the vital downstream demand source of FKM, leading to the overcapacity of low and medium-end FKM; on the other hand, high-end FKM demand as well as import are still on the rise while few high-end FKM Chinese producers were seen.

...

4.2.5.1 HFP

...

- Production

The growth of capacity of HFP slowed down in China, slowly increasing from XX,XXX t/a in XXXX to XX,XXX t/a in XXXX. Meanwhile, boosted by the development of downstream industries, HFP output increased quickly to XX,XXX tonnes in XXXX from XX,XXX tonnes in XXXX, with a CAGR of X.X% in this period. In XXXX, output of HFP dropped slightly. Downstream demand remained almost the same as in XXXX while new production lines were under construction.

...

4.2.5.3 VDF

Vinylidene fluoride (VDF) is mainly used to produce polyvinylidene fluoride (PVDF) and fluor rubbers. In China, most PVDF and fluoro rubber manufacturers are equipped with VDF production plant to produce it for self-use; usually little is for sale.

As the reactive monomer of PVDF and fluor rubbers, VDF capacity expansion is decided by the demand for VDF. Overall, downstream sectors have strong demand for PVDF and fluor rubbers, especially for PVDF. Thus, the demand for VDF will continue to increase. Good development prospects will attract potential entrants into the industry in the future.

In XXXX, thanks to surging downstream demand, operating rates of most VDF enterprises were at a high level. In XXXX, demand for PVDF continued to rise, pushing the output of VDF higher. In addition, new production lines are being built and planned. In XXXX, there were XX VDF manufacturers in China with the

total capacity and output reaching XXX,XXX t/a and XX,XXX tonnes respectively.

...

If you want more information, please feel free to contact us

Tel: +86-20-37616606 Fax: +86-20-37616968

Email: econtact@cnchemicals.com