Herbicides China Monthly Report 202302

Issue 2 February 28 2023

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Headline

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Jiangsu Fuding's newly-built 200 t/a metamifop TC production line and supporting facilities have been put into operation. The company has acquired qualifications and permits for legitimate production and sale of metamifop TC products.

Hubei Wojia's 800 t/a bentazone TC production line and supporting facilities have been put into trial run. This not only lays a good foundation for the long-term development of the company, but also helps to increase the supply of bentazone TC in Chinese market in the near future.

Into Feb., the majority of herbicides TC saw their ex-works price go down, and a few products had stable price.

The ex-works price of 2,4-D TC in China fell back in Feb. due to reduced demand, though raw material costs went up. It is expected that 2,4-D price would fluctuate slightly, and the chance for a plummet is slim in the short term.

Nanjing Red Sun released its performance projection for the year 2022 in late Jan. It projected over RMB800 million net profits and thus reversed the losses seen in 2021. The profits were hard earned as the company overcame many unfavourable factors and seized opportunities in the green agrochemical boom.

In early Feb., the FOB price of paraquat 42% TK in China increased by 4.30% MoM, and the ex-works price of pure pyridine in China edged up by 0.24% MoM.

On 31 Jan., 2023, the Guidelines on Available Techniques of Pollution Prevention and Control for Pesticide Manufacturing Industry was deliberated and approved in principle at an MEE executive meeting. The Guidelines will provide technical support for implementation of discharge standard of pollutants for pesticide industry, application for and issuance of pollution discharge permits, etc.

In Feb., MARA released a batch of 42 herbicide products that have passed registration approval.

In 2022, the export of herbicide formulations from China peaked in July. The top three export destinations of China's herbicide formulations in 2022 were: Brazil, Australia and the US.

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Editor's note

Into Feb., the majority of herbicides TC saw their ex-works price go down, while atrazine TC, ametryn TC, pretilachlor TC and florasulam TC had stable price. For organophosphorus herbicides, shrinking export and low trade volume resulted from dwindled confidence in downstream buyers drove the prices down further. The price of export-oriented diquat TK was dragged down by low-priced diquat formulation products. The price of 2,4-D TC fell back in Feb. due to reduced demand.

Regarding company dynamics, Shandong Huayang's 300 t/a fenclorim project has been built up and the line has come into trial production. Weifang Rainbow has proposed to invest in four herbicide projects, products including clethodim TC and flumioxazin TC. Jiangsu Fuding has put its newly-built 200 t/a metamifop TC production line and supporting facilities into operation.

Also in Feb., MARA released a batch of 42 herbicide products that have passed registration approval. All these approved herbicides are formulation products of mild or low toxicity, mainly in the form of OD, EC and SL. The most popular active ingredient in them is tembotrione.

In terms of policy, the *Guidelines on Available Techniques of Pollution Prevention and Control for Pesticide Manufacturing Industry* was deliberated and approved in principle at an MEE executive meeting held in late Jan. The Guidelines will provide technical support for implementation of discharge standard of pollutants for pesticide industry, application for and issuance of pollution discharge permits, etc.

The USD/CNY exchange rate in this newsletter is USD1.00 = CNY6.7492 on 1 Feb., 2023, sourced from the People's Bank of China. All the prices mentioned in this newsletter will include the VAT, unless otherwise specified.

Company dynamics

Shandong Huayang's 300 t/a fenclorim line enters trial production

Summary: Shandong Huayang's 300 t/a fenclorim project has entered trial production as of early Feb. Meanwhile, the company has completed the construction of 1,500 t/a buprofezin TC and 1,000 t/a carbosulfan TC lines. These new lines are built to foster the company's growth in the long run.

Early Feb., CCM learned from Shandong Huayang Technology Co., Ltd. (Shandong Huayang) that its 300 t/a fenclorim production line had been put into trial run. And the company has finished the construction of 1,500 t/a buprofezin TC and 1,000 t/a carbosulfan TC lines. Once all these lines are put into operation, Shandong Huayang will become a big supplier for the three products.

Shandong Huayang, founded in 1966, is located in Ningyang Chemical Industrial Park, Ningyang County, Tai'an City, Shandong Province. After decades-long experiences and accumulation, the company has developed into a comprehensive chemical enterprise group, focusing on pesticide business and dabbling in many other businesses as well.

Being long-established also means the company holds production capacity for pesticides that are no longer in line with current national industry policies. Therefore, in recent years, Shandong Huayang has voluntarily phased out the capacity for many old products such as acephate TC, chlorpyrifos TC, fenobucarb TC, acetochlor TC and carbendazim TC, and now retains the capacity for a few old products still popular in the market. At the same time, the company has increased its investment in projects for new pesticides to make up for the eliminated capacity, and optimise its product mixture as well as enrich product pool.

The production capacity for old products still in operation mainly consists of the lines of 2,000 t/a carbofuran TC, 2,000 t/a methomyl TC, 1,000 t/a aldicarb TC and 1,500 t/a pendimethalin TC. And the newly-built 300 t/a fenclorim TC, 1,500 t/a buprofezin TC and 1,000 t/a carbosulfan TC lines are parts of the projects Shandong Huayang launched to foster future growth, based on its existing resources and mastered production techniques.

Since its new projects have not been fully put into use, Shandong Huayang's pesticide business is still supported by revenue from sales of the remaining old products at present. In fact, the company has found itself on the List of Top 100 China Pesticide Enterprises (by sales), which is compiled by China Crop Protection Industry Association (CCPIA), for many years in a row; in the list for the year 2022, it ranked the 62th.

Jiangsu Fuding becomes major metamifop TC supplier in China

Summary: Jiangsu Fuding's newly-built 200 t/a metamifop TC production line and supporting facilities have been put into operation. The company has acquired qualifications and permits for legitimate production and sale of metamifop TC products.

Recently, CCM learned from Jiangsu Fuding Chemical Co., Ltd. (Jiangsu Fuding) that the company's newly-built 200 t/a metamifop TC production line and supporting facilities had been put into normal operation. The company also expressed that all the necessary

qualifications and permits for legitimate production and sale of metamifop TC products had been obtained long before.

Established in Sept. 2012, Jiangsu Fuding engages in R&D and production of pesticides, and in pesticide operation. Its products cover pesticide intermediates, pesticides TC and pesticide formulations. The company has built up large-scale production capacity in the production plant in Huai'an Salt Chemical New Material Industrial Park, Huai'an City, Jiangsu Province; apart from the metamifop TC line, Jiangsu Fuding's production lines mainly include 450 t/a dimethoxypyrimidine, 300 t/a clodinafop-propargyl TC, 100 t/a penoxsulam TC, 300 t/a fluroxypyr-meptyl TC, and large lines for pesticide formulation products.

Currently, Jiangsu Fuding is increasing investment in expanding its production capacity for pesticides. The 200 t/a etoxazole TC and 200 t/a cyhalofop-butyl TC lines previously planned are now under construction. It has also proposed a 5,000 t/a pesticide formulation project, which will eventually bring the company's capacity for pesticide formulations to 14,200 t/a. As of the end of 2022, the large-scale pesticide formulation project was still in the formalities-acquiring phase.

In China, only five metamifop TC products (all of 96% AI content) had been granted pesticide registration by the end of 2022. The registration holders are: Jiangsu Fuding, Ningxia Lantian Agricultural Development Co., Ltd. (Ningxia Lantian), Dezhou Luba Fine Chemical Co., Ltd., Jiangsu Lianhe Chemical Technology Co., Ltd. and FarmHannong Co., Ltd.

Of these holders, Ningxia Lantian boasts 500 t/a metamifop TC active production capacity. Besides, the company has production lines of 1,200 t/a bentazone TC, 1,000 t/a oxadiazon TC, and 600 t/a oxadiargyl TC, all in active operation, in the plant in Ningxia Pingluo Industrial Park, Shizuishan City, Ningxia Hui Autonomous Region.

In the past few years, there were some pesticide producers and individuals involved in unlicensed illegal production and/or operation of metamifop TC products in domestic market, even though the government has increased the efforts to crack down upon such activities. Concerning illegitimate metamifop TC production in underground workshops and the like, Jiangsu Fuding expressed that the illicit activities had disrupted the metamifop TC market in China and severely harmed the interests of legal producers like Ningxia Lantian and itself. To effectively cooperate with law enforcement agencies to crack down hard on such illegal acts, Jiangsu Fuding and Ningxia Lantian have decided to jointly commission a law firm to reward relevant and valuable leads to such violations.

Hubei Wojia puts newly-built bentazone TC line into trial operation

Summary: Hubei Wojia's 800 t/a bentazone TC production line and supporting facilities have been put into trial run. This not only lays a good foundation for the long-term development of the company, but also helps to increase the supply of bentazone TC in Chinese market in the near future.

Recently, CCM learned from Hubei Wojia Bio-agriculture Co., Ltd. (Hubei Wojia) that its 800 t/a bentazone TC production line and supporting facilities had been built up and put into trial operation. Starting to produce bentazone TC is not only good for its future development, but also helpful in improving the supply of this product in Chinese market.

Founded in April 2015, Hubei Wojia is a Sino-foreign joint venture involved in pesticide business. It once planned to form a large production base in the Qianjiang Economic Development Zone in Qianjiang City, Hubei Province, but had to drop the plan due to external factors. It then chose to settle in the Jingjiang Green & Circular Economy Chemical Industrial Park, Jingzhou City, Hubei Province. The same park also accommodates a pesticide giant—ADAMA Ltd.

So far, Hubei Wojia has had active capacity of 1,000 t/a epoxybutane, 1,500 t/a dichlorobenzyl-triazoliumnitrate, 550 t/a propiconazole TC, 1,200 t/a tebuconazole TC, 600 t/a metamitron TC and 50 t/a imazamox TC. Meanwhile, the company is actively engaged in building capacity for other pesticides TC, including: 100 t/a chlorantraniliprole TC, 100 t/a carfentrazone-ethyl TC, 50 t/a flutriafol TC, 50 t/a hexaconazole TC, 500 t/a azoxystrobin TC and 800 t/a sulfentrazone TC.

Recent years, China has been paying ever more attentions to environmental protection and workplace safety, and the two themes have exerted great influences on the development of China's pesticide industry. Yet at the same time, the industry has been significantly affected by a series of accidents, particularly represented by explosion in March 2019 in Xiangshui County of Jiangsu Province. The severe accident took place in the plant of Jiangsu Tianjiayi Chemical Co., Ltd. in Xiangshui Ecological Chemical Park, Yancheng City, Jiangsu Province. Succeeding forced production suspensions in chemical enterprises in the province impacted bentazone TC producers in Jiangsu, including Xiangshui Zhongshan Bioscience Co., Ltd. (Xiangshui Zhongshan), Jiangsu Jiannong ABA Agrochemical Co., Ltd. (Jiangsu Jiannong), Jiangsu Sword Agrochemicals Co., Ltd. (Jiangsu Sword), Jiangsu Lulilai Co., Ltd. (Jiangsu Lulilai) and Yancheng Link Weiye Chemical Co., Ltd. (Yancheng Link Weiye).

TABLE 1: Some bentazone TC producers in Jiangsu before the severe explosion in March 2019 in Xiangshui County

Producer	Capacity for bentazone TC, t/a	Plant location
Xiangshui Zhongshan	2,000	Xiangshui Ecological Chemical Park, Yancheng City
Jiangsu Lulilai	1,000	Xiangshui Ecological Chemical Park, Yancheng City
Jiangsu Sword	1,000	Yanhai Chemical Park of Binhai Economic Development Area, Yancheng City
Yancheng Link Weiye	1,000	Yanhai Chemical Park of Binhai Economic Development Area, Yancheng City
Jiangsu Jiannong	200	Yanhai Chemical Park of Binhai Economic Development Area, Yancheng City

Source:CCM

As of Feb. 2023, of the five bentazone TC producers abovementioned, Xiangshui Zhongshan, Jiangsu Jiannong, Jiangsu Sword and Yancheng Link Weiye have parts of their production lines approved of resumption after rectification, while Jiangsu Lulilai closed the plant and withdrew from the Xiangshui Ecological Chemical Park. As regards bentazone TC production line, only Xiangshui Zhongshan has revived production, and the other three, unfortunately, still await government approval.

Besides Hubei Wojia and Xiangshui Zhongshan, other currently active major bentazone TC producers in China are: Shenyang Sciencreat Chemicals Co., Ltd. (with 100 t/a bentazone TC capacity), Ningxia Lantian Agricultural Development Co., Ltd. (1,200 t/a), Anhui Zhongshan Chemical Co., Ltd. (2,400 t/a) and Shandong Binnong Technology Co., Ltd. (500 t/a). There are some other pesticide enterprises that are building or planning to establish new bentazone TC capacity in China.

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Market analysis

Prices of most herbicides TC drop in early Feb.

Summary: Into Feb., the majority of herbicides TC saw their ex-works price go down, and a few products had stable price.

Into Feb., the majority of herbicides TC saw their ex-works price go down, while atrazine TC, ametryn TC, pretilachlor TC and florasulam TC had stable price.

In early Feb., of triazine herbicides, atrazine TC, still in a slow season, had stable price though, which was supported by high raw material costs. The ex-works price of ametryn TC stabilised at USD6,667/t (RMB45,000/t). Sulfonylurea herbicides bensulfuron-methyl TC, nicosulfuron TC and quizalofop-P-ethyl TC, all saw the price dip slightly this month, with less than 3% MoM drops.

The prices of amide herbicides were lowered, mainly affected by raw material prices. Pretilachlor TC price kept stable, while the price of acetochlor TC fell 12.50% MoM to USD5,186/t (RMB35,000/t) and that of metolachlor TC decreased by 3.53% MoM to USD8,505/t (RMB57,400/t). As for organophosphorus herbicides, shrinking export and low trade volume resulted from dwindled confidence in downstream buyers drove the prices down further. Glufosinate-ammonium TC price declined by 5.74% MoM to USD21,647/t (RMB146,100/t) and glyphosate TC price slipped by 7.20% MoM, landing at USD6,875/t (RMB46,400/t).

Ex-works price of florasulam TC remained stable. The price of diuron TC reversed the uptrend, returning to USD7,112/t (RMB48,000/t) with a 4% MoM fall. The price of export-oriented diquat TK plummeted 13.46% MoM to USD6,667/t (RMB45,000/t), influenced by low-priced diquat formulation products.

TABLE 2: Ex-works prices of main herbicides TC in early Feb. 2023

Category	Product	Content of active ingredient	Ex-works price in early Feb., RMB/t	USD/t	MoM change based on RMB
Triazine herbicides	Atrazine TC	97%	36,000	5,333.97	Basically flat
	Ametryn TC	95%	45,000	6,667.46	Basically flat
Sulfonylurea herbicides	Nicosulfuron TC	95%	220,000	32,596.46	Down
	Quizalofop-P-ethyl TC	95%	222,500	32,966.87	Down
	Bensulfuron-methyl TC	96%	187,000	27,706.99	Down
Amide herbicides	Pretilachlor TC	95%	34,000	5,037.63	Basically flat
	Acetochlor TC	92%	35,000	5,185.80	Down
	Metolachlor TC	97%	57,400	8,504.71	Down
Organophosphorus herbicides	Glufosinate-ammonium TC	95%	146,100	21,647.01	Down
	Glyphosate TC	95%	46,400	6,874.89	Down
Triazolo[1,5-a]pyrimidine-2-sulfonanilide herbicides	Florasulam TC	98%	510,000	75,564.51	Basically flat
Bipyridinium herbicides	Diquat TK	40%	45,000	6,667.46	Down
Substituted phenylurea herbicides	Diuron TC	97%	48,000	7,111.95	Down

Source:CCM

2,4-D TC price drops in Feb.

Summary: The ex-works price of 2,4-D TC in China fell back in Feb. due to reduced demand, though raw material costs went up. It is expected that 2,4-D price would fluctuate slightly, and the chance for a plummet is slim in the short term.

In H1 2022, the ex-works price of 2,4-D TC in China dropped continuously till May; it climbed up bit by bit from June to Aug., and then stabilised for a while before another dip in Dec. 2022. In early Feb. 2023, the price slipped by 8.33% MoM to USD3,260/t (RMB22,000/t). Demand for 2,4-D TC shrank, and the stock made before the Spring Festival should be consumed first, which resulted in small trade in the 2,4-D TC market. However, the majority of 2,4-D producers have increased their operating rates.

Prices of 2,4-D's raw materials dropped in general since July 2022. In H2 2022, the ex-works price of phenol shot from USD1,377/t (RMB9,207/t) in July to USD1,522/t (RMB10,803/t) in Oct. However, with import supplies and slipping demand, the price started to fall in Nov. and ended at USD1,072/t (RMB7,450/t) in Jan. 2023. The Feb. price recovered to USD1,145/t (RMB7,730/t). As for chloroacetic acid, its ex-works price edged up during Sept.–Nov. 2022, but it plummeted to USD403/t (RMB2,800/t) in Jan. 2023. In Feb., it came up by some 8% MoM to USD449/t (RMB3,030/t).

The 2,4-D manufacturers in China are under the pressures of climbing raw material costs and sluggish downstream demand. Seeing this, CCM expects that the ex-works price of 2,4-D TC would fluctuate slightly in the next month, and the chance for a big price fall is slight.

FIGURE 1: Ex-works price of 98% 2,4-D technical in China, Feb. 2022–Feb. 2023

Source:CCM

TABLE 3: Monthly ex-works prices of phenol and chloroacetic acid in China, July 2022–Feb. 2023

Month	Ex-works price of phenol		Ex-works price of chloroacetic acid	
	USD/t	RMB/t	USD/t	RMB/t
July 2022	1,377	9,207	579	3,870
Aug. 2022	1,371	9,253	524	3,537
Sept. 2022	1,517	10,444	529	3,640
Oct. 2022	1,522	10,803	525	3,730
Nov. 2022	1,238	8,925	520	3,750
Dec. 2022	1,110	7,905	515	3,670
Jan. 2023	1,072	7,450	403	2,800
Feb. 2023	1,145	7,730	449	3,030

Source:CCM

Paraquat and pyridine

Nanjing Red Sun projects big YoY gains in 2022

Summary: Nanjing Red Sun released its performance projection for the year 2022 in late Jan. It projected over RMB800 million net profits and thus reversed the losses seen in 2021. The profits were hard earned as the company overcame many unfavourable factors and seized opportunities in the green agrochemical boom.

On 30 Jan., Nanjing Red Sun Co., Ltd. (Nanjing Red Sun) released its performance projection for the year 2022. Some USD122.98 million to USD152.61 million (RMB830 million–RMB1,030 million) net profit attributable to shareholders of the listed company is estimated, up 122.17% to 127.51% YoY from the losses reported in 2021. And the expected YoY rise for net profit excluding extraordinary profit and loss is much bigger, falling between 436.52% and 519.06%. Anticipated basic earnings per share is about USD0.21–USD0.26 (RMB1.43–RMB1.77), surging from the USD0.96 (RMB6.45) loss experienced throughout 2021.

Such growth is hard earned. Facing unfavourable situations such as global economic downturn, high-priced raw materials and lasting COVID, Nanjing Red Sun, based upon its advantages in green pesticide chains built for three pesticide product series (green and novel herbicides, bio-based pyridine bases, and pyrethroids for agricultural use), has seized opportunities in the green agrochemical boom, adopted multiple measures to follow its development strategy—focusing on main business, actively embracing industrial upgrading, making digital transformation and encouraging innovation. The company, via improvement & optimisation of industrial chains as well as technological innovation, has realised cost reduction and efficiency enhancement for its existing products, kept stable operation, and achieved development in new product chains covering diquat dichloride, chlorantraniliprole, L-glufosinate, glufosinate-ammonium, 2,2'-dipyridyl, etc. Meanwhile, it has consolidated resources, safeguarded material supplies, and explored new markets. In 2022, big increases in sales volume, sales price and gross margins of its main products contributed to the growth in its overall performance.

TABLE 4: Projected net profits and basic earnings per share of Nanjing Red Sun, 2022 vs 2021

Item	2022 (est.)	2021	YoY change
Net profit attributable to shareholders of the listed company	USD122.98 million–USD152.61 million (RMB830 million–RMB1,030 million)	-USD554.75 million (RMB3,744.12 million)	122.17%–127.51%
Net profit excluding extraordinary profit and loss	USD125.94 million–USD157.06 million (RMB850 million–RMB1,060 million)	-USD37.42 million (RMB252.58 million)	436.52%–519.06%
Basic earnings per share	USD0.21–USD0.26 (RMB1.43–RMB1.77)	-USD0.96 (RMB6.45)	122.18%–127.46%

Source:Nanjing Red Sun Co., Ltd.

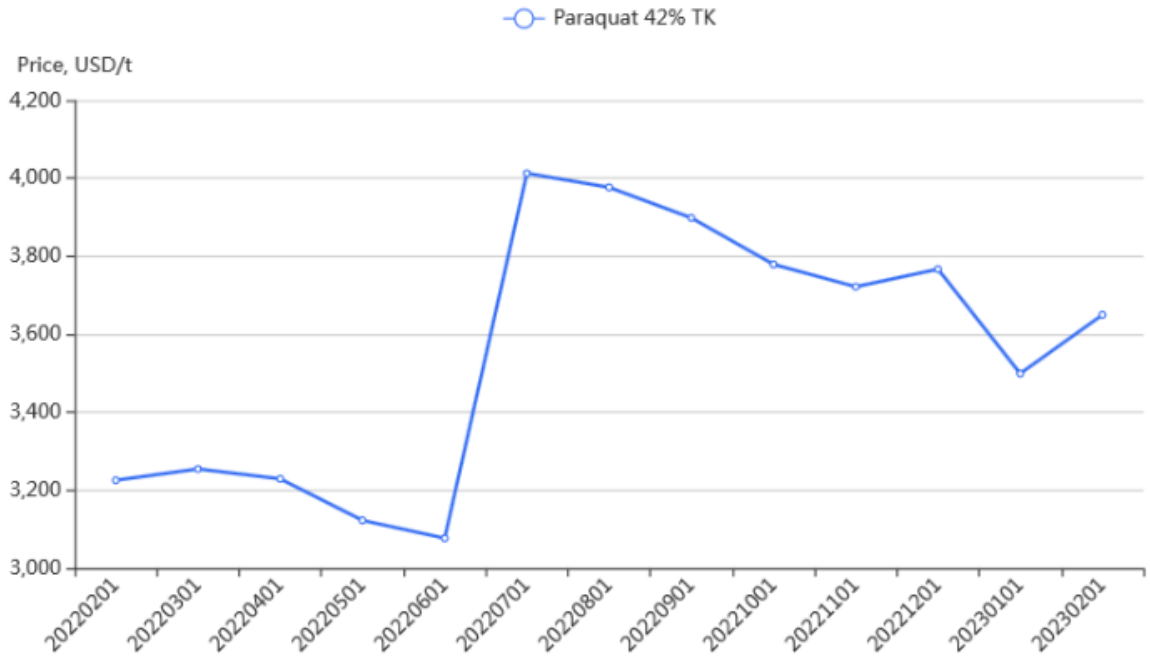
Prices of paraquat and pyridine go up in China in Feb.

Summary: In early Feb., the FOB price of paraquat 42% TK in China increased by 4.30% MoM, and the ex-works price of pure pyridine in

China edged up by 0.24% MoM.

CCM's price monitoring data show that the FOB price of paraquat 42% TK in China increased by 4.30% MoM to USD3,650/t in Feb., and the price rose by 13.15% on a yearly basis. The ex-works price of pure pyridine edged up by 0.24% MoM to USD6,238/t (RMB42,100/t), which was 50.36% higher than the price in Feb. 2022.

FIGURE 2: FOB price of paraquat 42% TK in China, Feb. 2022–Feb. 2023



Note:The monthly prices here are the prices recorded early each month.
Source:CCM

FIGURE 3: Ex-works price of pure pyridine in China, Feb. 2022–Feb. 2023

Note:The monthly prices here are the prices recorded early each month.
Source:CCM

Policy

Guidelines on Available Techniques of Pollution Prevention and Control for Pesticide Manufacturing Industry approved in principle

Summary: On 31 Jan., 2023, the *Guidelines on Available Techniques of Pollution Prevention and Control for Pesticide Manufacturing Industry* was deliberated and approved in principle at an MEE executive meeting. The Guidelines will provide technical support for implementation of discharge standard of pollutants for pesticide industry, application for and issuance of pollution discharge permits, etc.

On 31 Jan., 2023, the *Guidelines on Available Techniques of Pollution Prevention and Control for Pesticide Manufacturing Industry* was deliberated and approved in principle at an executive meeting of the Ministry of Ecology and Environment of the People's Republic of China (MEE).

China is a big pesticide producer as well as a big pesticide consumer. There exist a great variety of pesticide products, with complicated compositions and chemical structures. During pesticide manufacturing processes, high levels of multiple pollutants will be discharged, which poses huge impact to the environment. To effectively prevent and control pollutions from pesticide manufacturing industry is thus of great importance, and is related to the improvement of the ecological environment quality and food security.

The Guidelines prioritises treatment of waste water and waste gas generated in pesticide manufacturing, while also pays attention to treatment of solid wastes, noise, etc. It combs through features of pollutants generating and discharging in pesticide manufacturing enterprises, and available techniques of pollution prevention and control, which will provide technical support for implementation of discharge standard of pollutants for pesticide industry, application for and issuance of pollution discharge permits, etc., and thus promote healthy, green and high quality development of the industry.

In this meeting, it was emphasised that work to facilitate the implementation of the Guidelines should be organised, the document should be publicised and carefully explained to the parties concerned, personnel training and technical guidance should be well provided, and local governments and enterprises should be guided to apply the techniques suggested. With these measures, the Guidelines could play a real role in advancing pollution treatment in pesticide manufacturing industry in China.

Registration

42 Herbicide products approved of registration in early Feb.

Summary: In Feb., MARA released a batch of 42 herbicide products that have passed registration approval.

In Feb., 2023, the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) released a batch of 42 pesticide products that have been approved of registration. All of these herbicides are formulation products of mild or low toxicity, mainly in the form of OD, EC and SL. Popular applied sites are maize field, transplanted rice field and non-cultivated cropland. Of these approved products, 12 contain the active ingredient tembotrione.

TABLE 5: Toxicity of herbicide products approved of registration in China on 10 Feb., 2023

No.	Toxicity	Number
1	Low	41
2	Mild	1
Total		**42**

Source:MARA

TABLE 6: Forms of herbicide products approved of registration in China on 10 Feb., 2023

No.	Form	Number
1	OD	18
2	EC	9
3	SL	8
4	SC	5
5	ME	1
6	CS	1
Total		**42**

Source:MARA

TABLE 7: Applied sites of herbicide products approved of registration in China on 10 Feb., 2023

No.	Site	Number
1	Maize field	17
2	Transplanted rice field	8
3	Non-cultivated cropland	6
4	Rice field (direct seeding)	5
5	Soybean field	2
6	Spring soybean field	2
7	Wheat field	1
8	Summer maize field	1
9	Adzuki bean field	1
10	Spring maize field	1
Total		**44**

Note:There are two herbicide products that have been registered with two applied sites.
Source:MARA

TABLE 8: Top three active ingredients in herbicide products approved of registration in China on 10 Feb., 2023

No.	Active ingredient	Number
1	Tembotrione	12
2	Topramezone	5
3	Glufosinate-p	5

Source:MARA

Trade analysis

Brazil, biggest export destination of herbicide formulations from China in 2022

Summary: In 2022, the export of herbicide formulations from China peaked in July. The top three export destinations of China's herbicide formulations in 2022 were: Brazil, Australia and the US.

According to the import and export data from Tranalysis, in 2022, China exported some 1,531,000 tonnes (actual volume, the same hereafter) of herbicide formulation products. The export peaked in July, with more than 165,400 tonnes delivered and nearly USD850 million achieved, and the largest destination being Brazil. In Q1 2022, the export fluctuated greatly, as transportation was under pressure and relatively high production cost dragged down operating rate, mainly due to COVID situation, the Spring Festival and the Beijing Winter Olympics. From Aug. to Oct., export of herbicide formulations was on the decline, since domestic producers were inactive in production under the influences of high temperature, environmental production & work safety inspection, and continued COVID.

TABLE 9: Exports of herbicide formulations from China by month, 2022

Month	Volume, tonne	Value, USD	Average price, USD/t
Jan.	147,118.43	843,352,108	5,732.47
Feb.	88,541.75	512,249,470	5,785.40
March	133,676.35	735,678,825	5,503.43
April	112,333.94	643,596,808	5,729.32
May	153,861.75	812,450,519	5,280.39
June	164,838.54	829,077,105	5,029.63
July	165,431.56	849,117,764	5,132.74
Aug.	139,690.37	715,912,068	5,124.99
Sept.	109,514.77	531,375,359	4,852.09
Oct.	102,590.53	450,587,359	4,392.10
Nov.	112,113.60	466,184,710	4,158.15
Dec.	101,329.83	407,406,757	4,020.60
Total/Average	**1,531,041.42**	**7,796,988,852**	**5,092.60**

Source:Tranalysis

Of the 149 export destinations of herbicide formulations from China in 2022, Brazil stood first on the list, followed by Australia and the US.

The export volume to Brazil accounted for almost 20% of the total.

TABLE 10: Exports of herbicide formulations from China to major destinations, 2022

No.	Destination	Volume, tonne	Value, USD	Average price, USD/t
1	Brazil	304,495.75	2,246,503,440	7,377.78
2	Australia	159,268.34	691,770,879	4,343.43
3	The US	104,419.27	537,786,157	5,150.26
4	Nigeria	97,675.68	342,142,825	3,502.85
5	Thailand	69,741.46	285,742,147	4,097.16
6	Indonesia	65,326.36	266,294,065	4,076.37
7	Canada	38,419.55	199,821,803	5,201.05
8	South Africa	31,936.11	172,267,582	5,394.13
9	Ghana	40,839.47	149,372,248	3,657.55
10	Argentina	42,907.77	143,688,285	3,348.77
Others		576,011.66	2,761,599,421	4,794.35
Total/Average		**1,531,041.42**	**7,796,988,852**	**5,092.60**

Source:Tranalysis

Brief news

Weifang Rainbow to invest in four herbicide projects

On 31 Jan., Shandong Weifang Rainbow Chemical Co., Ltd. (Weifang Rainbow) issued the Feasibility Analysis Report on the Use of Funds Raised by Issuing Shares to Specific Objects in 2023, aiming to raise no more than USD377.38 million (RMB2,547.05 million) through this method. The funds, after deducting the issuance cost, will be used for four pesticide TC projects, for the digital management improvement for global operation project, and as supplementary working capital.

The 1,000 t/a flumioxazin project and the 1,000 t/a clopyralid project proposed will adopt mature production techniques with certain improvements. The 8,000 t/a clethodim project and the 60,000 t/a 2,4-D & 2,4-D-ethylhexyl project will feature green and continuous production technique, combining experiences accumulated in similar projects and technology achievements developed in recent years.

TABLE 11: Weifang Rainbow's projects to be invested with raised funds

No.	Project	Total investment, million USD	Amount from the funds to be raised, million USD
1	The 8,000 t/a clethodim project	118.24	108.71
2	The 60,000 t/a 2,4-D & 2,4-D-ethylhexyl project with green and continuous production technique	112.96	106.95
3	The 1,000 t/a clopyralid project	27.09	25.54
4	The 1,000 t/a flumioxazin project	38.54	36.37
5	The digital management improvement for global operation project	21.88	21.29
6	Supplementary working capital	78.53	78.53
Total		**397.24**	**377.38**

Source:Shandong Weifang Rainbow Chemical Co., Ltd.

EI report of Zhejiang Avilive's new pesticide project to be approved

On 29 Jan., the Department of Ecology and Environment of Zhejiang Province announced that it had intended to approve the environmental impact (EI) report of the 500 t/a aminopyralid, 700 t/a clopyralid, 1,000 t/a picloram and 500 t/a chlorantraniliprole project of Zhejiang Avilive Chemical Co., Ltd. (Zhejiang Avilive).

Of the four products proposed in the project, aminopyralid is a pyridine carboxylic acid herbicide developed by Dow AgroSciences LLC. The active ingredient is of low toxicity, and it is believed to have no teratogenic, mutagenic and carcinogenic effects, and have no side effect on endocrine system and reproductive system. It can be applied to control weeds in mountainous areas, grassland, farmland and non-arable land.

Anhui Yinong plans to construct 5kt/a eco-friendly biopesticide formulation project

On 6 Feb., the Bengbu Municipal Government publicised the environmental impact report of the 5,000 t/a environment-friendly biopesticide formulation project of Anhui Yinong Agricultural Technology Development Co., Ltd. (Anhui Yinong). The company plans to invest USD11.85 million (RMB80 million) in the project, which is expected to be constructed in the Fine Chemical Industry Cluster Area in Huaishang Economic Development Zone, Bengbu City, Anhui Province.

TABLE 12: Proposed herbicide formulation products in Anhui Yinong's project

No.	Product	Capacity (t/a)
1	Cyhalofop-butyl EC (10%, 20%, 30%, 35%, 40%)	50
2	Fluroxypyr 288g/L EC	50
3	Clethodim 24% EC	50
4	Pinoxaden 5% EC	50
5	10% Propanil·30% cyhalofop-butyl EC	50
6	10% Metamifop·10% cyhalofop-butyl EC	50
7	Quizalofop-P-ethyl 5% EC	10
8	Quizalofop-P-ethyl 10% EC	20
9	Quizalofop-P-ethyl 10.80% EC	20
10	Haloxyfop-P-methyl 108g/L EC	50
11	Metamifop 10% EC	50
12	Pretilachlor 40% EC	50
13	Oxadiazon EC (30%, 40%)	50
14	Propanil EC (34%, 45%)	50
15	Clodinafop-propargyl ME (15%, 24%)	200
16	2.50% Penoxsulam·22.50% quinclorac OD	50
17	2% Bensulfuron-methyl·28% pretilachlor OD	200
18	45.40% MCPA-isooctyl·0.60% florasulam SC	200
19	18% Atrazine·4% mesotrione·2% nicosulfuron OD	50
20	Isoproturon 40% SC	200
21	4.50% Nicosulfuron·13.50% mesotrione SC	50
22	Bispyribac-sodium 10% SC	15
23	Bispyribac-sodium 15% SC	15

24	Bispyribac-sodium 20% SC	20
25	Penoxsulam 2.50% SC	50
26	Flucarbazone-Na 10% SC	50
27	33.50% Flucarbazone-Na·1.5 isoproturon OD	50
28	Mesosulfuron-methyl 30g/L SC	50
29	Quinclorac SC (25%, 30%)	50
30	Benazolin-ethyl 30% SC	50
31	Florasulam 50g/L SC	50
32	Pyrazosulfuron-ethyl 10% WP	50
33	Quinclorac 50% WP	50
34	3% Bensulfuron-methyl·33% quinclorac WP	50
35	Tribenuron-methyl 10% WP	50
36	Carfentrazone-ethyl 10% WP	50
37	Fomesafen 25% AS	100
38	Clopyralid 30% AS	100
39	6% Picloram·24% clopyralid AS	100
40	60g/L MCPA·400g/L bentazone AS	100
41	MCPA-dimethylamine salt 65% AS	100
42	MCPA-sodium 56% SP	50

Source:Department of Ecology and Environment of Bengbu City

Anhui Shengli to relocate and expand pesticide & intermediate capacity

On 14 Feb., the Department of Ecology and Environment of Xuancheng City announced acceptance of the environment impact report of the "fire retardant, pesticide and intermediate relocation and transformation integrated production project" of Anhui Shengli Pesticide & Chemistry Co., Ltd. (Anhui Shengli). The company plans to relocate the existing factory from the Ningguo Wangxi Industrial Concentration Area to Ningguo Port Ecological Industrial Park, still in Ningguo City, Anhui Province. Besides, the company expects to add capacity for some more competitive products, and through the project it will finally form production capacity (55,300 t/a in total) of 10,000 t/a triethyl phosphate, 5,000 t/a 2-chloroethylphosphonic acid (40%), 3,000 t/a glyphosate GR, 26,000 t/a pesticides EC and AS, 6,000 t/a triethyl

phosphite, 3,000 t/a diethyl phosphite, 2,000 t/a 2,3-dichloropyridine, 200 t/a disphosphite, 100 t/a 3,6-dichloropyridazin-4-ol.

Anhui Shengli, located in southeast Anhui, enjoys low transportation cost to chemical markets in Jiangsu, Zhejiang and Shanghai. The company's products are well sold. Seeking to elevate overall strength, increase market competitiveness and advance its development, Anhui Shengli plans this project.

XUAR releases first-batch chemical parks to be approved

On 17 Feb., the Department of Industry and Information Technology of Xinjiang Uygur Autonomous Region (XUAR) released the first-batch list of chemical parks (chemical concentration areas) to be approved.

TABLE 13: List of the first batch of chemical parks to be approved in XUAR

No.	New name given to park/concentration area to be approved	Name of park (in application material)	Location
1	Shaya County Circular Economy Industrial Park Chemical Industry Concentration Area	Shaya County Circular Economy Industrial Park Energy Chemical Industry Park	Shaya County, Aksu Prefecture
2	Kuqa Economic and Technological Development Zone Chemical Industry Concentration Area	Kuqa Economic and Technological Development Zone Chemical Industry Park	Kuqa City, Aksu Prefecture
3	Baicheng Industrial Park Chemical Industry Concentration Area	Baicheng Industrial Park Chemical Industrial Park	Baicheng County, Aksu Prefecture

Source:Department of Industry and Information Technology of Xinjiang Uygur Autonomous Region

Hebei unveils fifth-batch list of approved chemical parks

On 3 Feb., the Industry and Information Technology Department of Hebei Province released the list of approved chemical parks (fifth batch). Five parks, all under the category of "chemical concentration area", are on the list.

TABLE 14: List of chemical parks (fifth batch) approved in Hebei Province

No.	Name of park	Location
1	Cangzhou Bohai New Area Petrochemical Industry Cluster	Cangzhou City
2	Hebei Guantao Economic Development Zone Chemical Industry Park	Handan City
3	Hebei Gucheng Economic Development Zone Chemical Industry Park	Hengshui City
4	Hebei Tangshan Guye Economic Development Zone Chemical Industry Concentration Area	Tangshan City
5	Hebei Hengshui Hi-Tech Industrial Development Zone Chemical & New Material Industrial Park	Hengshui City

Source:Industry and Information Technology Department of Hebei Province

Sichuan Hebang reports growth in revenue in 2022

On 20 Feb., Sichuan Hebang Biotechnology Co., Ltd. (Sichuan Hebang) released its annual report for 2022. During the reporting period, the company's revenue saw a YoY growth of 30.55%, with the net profit attributable to equity holders of the listed company rising by 26. 12% YoY. Of the total revenue, nearly 91% came from its chemical business; the business, seeing yearly gain of 26.87% in revenue, was the sector with the fastest growth in 2022 among all its main businesses. The company had sound production of products like sodium carbonate, ammonium chloride, PMIDA and glyphosate powder, and these products enjoyed good sales.

TABLE 15: Production and sales of Sichuan Hebang's major chemical products in 2022

Category	Product	Output, tonne	Sales volume, tonne	YoY change in market price
Chemicals with Combined-soda Process	Sodium carbonate	2,504,455	2,711,871	27.45%
	Ammonium chloride			40.71%
Pesticides & pesticide intermediates	PMIDA	291,445	280,655	47.29%
	Glyphosate powder			41.75%
	Others			N/A

Source:Annual report of Sichuan Hebang Biotechnology Co., Ltd. for 2022

EI report of Chizhou Wanwei's 1,700 t/a pesticide project accepted

On 21 Feb., the Department of Ecology and Environment of Chizhou City announced acceptance of the environmental impact (EI) report of the 1,500 t/a haloxyfop-P-methyl and 200 t/a fluazifop-P-butyl project of Chizhou Wanwei Chemical Co., Ltd. (Chizhou Wanwei). The company plans to invest USD5.88 million (RMB39.66 million) in the project and build the lines in its existing plant in the Dongzhi Economic Development Zone, Chizhou City, Anhui Province.

MARA to revise list of banned and restricted pesticides

On 21 Feb., the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) issued the Implementation Opinions on Carrying out the Major Tasks in Comprehensively Boosting Rural Revitalisation in 2023 Outlined by the Central Committee of the Communist Party of China and the State Council. Aiming to ensure the safety of agricultural production, good quality of agricultural products and ecological environment security, to safeguard people's lives and health, to ramp up the protection of agricultural resources and environmental governance, and to propel a green and comprehensive transformation of agriculture industry, MARA has planned to revise the list of banned and restricted pesticides and standardise the management of the pesticide industry.

Glufosinate-ammonium TC price in China drops further in late Feb.

In late Feb., the ex-works price of glufosinate-ammonium TC in China experienced a further decline amid sluggish downstream demand, decreasing by roughly 3% from the mid-Feb. level. Currently, there is adequate supply in domestic market, so downstream purchasers

hold a wait-and-see attitude with few orders made and overseas orders insufficient. It is expected that the ex-works price of glufosinate-ammonium TC would go down in the near future.

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Price Update

Ex-works prices of key herbicide raw materials in China, 8 Feb., 2023

TABLE 16: Ex-works prices of key herbicide raw materials in China, 8 Feb., 2023

Raw Materials	20230108		20230208	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	12,000	1,727.24	12,000	1,777.99
92% Iminodiacetonitrile	9,300	1,338.61	9,300	1,377.94
99% Isopropylamine	9,550	1,374.6	9,550	1,414.98
98% N-(Phosphonmethyl) Iminodiacetic acid	29,500	4,246.13	29,000	4,296.81
99% Phosphorus trichloride	7,563	1,088.59	7,850	1,163.1
99.9% Pyridine	42,000	6,045.34	42,100	6,237.78

Note:Ex-works price includes VAT.
Source:CCM

Ex-works prices of main herbicides in China, 8 Feb., 2023

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TABLE 17: Ex-works prices of main herbicides in China, 8 Feb., 2023

Product	20230108		20230208	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	24,000	3,454.48	22,000	3,259.65
92% Acetochlor technical	40,000	5,757.47	35,000	5,185.8
97% Atrazine technical	36,000	5,181.72	36,000	5,333.97
96% Bensulfuron-methyl technical	192,000	27,635.84	187,000	27,706.99
92% Butachlor technical	26,000	3,742.35	26,000	3,852.31
95% Clomazone technical	113,000	16,264.84	113,000	16,742.73
95% Cyhalofop-butyl technical	175,000	25,188.92	165,000	24,447.34
97% Diuron technical	50,000	7,196.83	48,000	7,111.95
98% Fenclorim technical	122,000	17,560.27	119,000	17,631.72
95% Fenoxaprop-P-ethyl technical	178,000	25,620.73	172,000	25,484.5
96% Fluroxypyr technical	165,700	23,850.31	162,600	24,091.74
95% Fomesafen technical	139,000	20,007.2	139,000	20,595.03
95% Glufosinate ammonium technical	155,000	22,310.18	146,100	21,647.01
95% Glyphosate technical	50,000	7,196.83	46,400	6,874.89
95% Haloxyfop-P-methyl technical	183,000	26,340.41	178,000	26,373.5
97% Metolachlor technical	59,500	8,564.23	57,400	8,504.71
95% Metsulfuron-methyl technical	135,000	19,431.45	135,000	20,002.37
95% Nicosulfuron technical	225,000	32,385.75	220,000	32,596.46
97% Oxyfluorfen technical	205,000	29,507.02	195,000	28,892.31
95% Pendimethalin technical	64,400	9,269.52	64,400	9,541.87
95% Pretilachlor technical	34,000	4,893.85	34,000	5,037.63
97% Pyrazosulfuron-ethyl technical	255,000	36,703.85	255,000	37,782.26

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80% Quinclorac technical	151,000	21,734.44	151,000	22,373.02
95% Quizalofop-P-ethyl technical	227,500	32,745.59	222,500	32,966.87
95% Tribenuron-methyl technical	140,000	20,151.13	135,000	20,002.37
95% Trifluralin technical	42,000	6,045.34	42,000	6,222.96

Note:Ex-works price includes VAT.
Source:CCM

Shanghai port prices of main herbicides in China, 8 Feb., 2023

TABLE 18: Shanghai port prices of main herbicides in China, 8 Feb., 2023

Product	20230108		20230208	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	24,500	3,526.45	22,500	3,333.73
92% Acetochlor technical	40,500	5,829.44	35,500	5,259.88
97% Atrazine technical	36,500	5,253.69	36,500	5,408.05
96% Bensulfuron-methyl technical	192,500	27,707.81	187,500	27,781.07
92% Butachlor technical	26,500	3,814.32	26,500	3,926.39
95% Clomazone technical	113,500	16,336.81	113,500	16,816.81
95% Cyhalofop-butyl technical	175,500	25,260.89	165,500	24,521.42
97% Diuron technical	50,500	7,268.8	48,500	7,186.04
98% Fenclorim technical	122,500	17,632.24	119,500	17,705.8
95% Fenoxaprop-P-ethyl technical	178,500	25,692.7	172,500	25,558.58
96% Fluroxypyr technical	166,200	23,922.27	163,100	24,165.83
95% Fomesafen technical	139,500	20,079.17	139,500	20,669.12
95% Glufosinate ammonium technical	155,500	22,382.15	146,600	21,721.09
95% Glyphosate technical	50,500	7,268.8	46,900	6,948.97
95% Haloxyfop-P-methyl technical	183,500	26,412.38	178,500	26,447.58
97% Metolachlor technical	60,000	8,636.2	57,900	8,578.79
95% Metsulfuron-methyl technical	135,500	19,503.42	135,500	20,076.45
95% Nicosulfuron technical	225,500	32,457.72	220,500	32,670.54
97% Oxyfluorfen technical	205,500	29,578.99	195,500	28,966.4
95% Pendimethalin technical	64,900	9,341.49	64,900	9,615.95
95% Pretilachlor technical	34,500	4,965.82	34,500	5,111.72
97% Pyrazosulfuron-ethyl technical	255,500	36,775.82	255,500	37,856.34

80% Quinclorac technical	151,500	21,806.41	151,500	22,447.1
95% Quizalofop-P-ethyl technical	228,000	32,817.56	223,000	33,040.95
95% Tribenuron-methyl technical	140,500	20,223.1	135,500	20,076.45
95% Trifluralin technical	42,500	6,117.31	42,500	6,297.04

Note:Port price equals the ex-works price plus the transport fee from the factory to the port, and the ex-works price includes VAT.
Source:CCM

FOB Shanghai prices of main herbicides in China, 8 Feb., 2023

TABLE 19: FOB Shanghai prices of main herbicides in China, 8 Feb., 2023, USD/t

Product	20230108	20230208
98% 2,4-D technical	3,169.25	3,320.16
92% Acetochlor technical	5,282.08	5,173.95
97% Atrazine technical	4,585.59	5,165.09
96% Bensulfuron-methyl technical	25,353.98	27,097.38
92% Butachlor technical	3,433.35	3,903.34
95% Clomazone technical	14,921.87	16,438.97
95% Cyhalofop-butyl technical	22,291.08	23,080.99
97% Diuron technical	6,602.6	7,066.99
98% Fenclorim technical	16,110.34	17,295.96
95% Fenoxaprop-P-ethyl technical	23,505.25	24,933.17
96% Fluroxypyr technical	21,881.01	23,576.28
95% Fomesafen technical	18,355.23	20,185.25
95% Glufosinate ammonium technical	19,743.53	20,437.16
95% Glyphosate technical	7,196.83	7,439.2
95% Haloxyfop-P-methyl technical	24,165.51	25,796.32
97% Metolachlor technical	7,857.09	8,454.27
95% Metsulfuron-methyl technical	17,827.02	19,608.9
95% Nicosulfuron technical	29,711.7	31,846.34
97% Oxyfluorfen technical	26,112.4	27,248.36
Paraquat 42% TK	3,499.38	3,650
95% Pendimethalin technical	8,504.15	9,438.53
95% Pretilachlor technical	4,489.77	5,056.04
97% Pyrazosulfuron-ethyl technical	33,673.26	36,899.43

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80% Quinclorac technical	19,939.85	21,918.47
95% Quizalofop-P-ethyl technical	30,041.83	32,208.23
95% Tribenuron-methyl technical	18,487.28	19,598.07
95% Trifluralin technical	5,349.86	6,011.05

Note:FOB price is calculated mainly based on ex-works price, tax refund, value added tax rate, exchange rate, etc.
Source:CCM

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Publisher : Kcomber Inc.

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