

Herbicides China Monthly Report 202211

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Headline

Jiangxi Hetian's production lines for flumetralin TC, flumetsulam TC, tebuthiuron TC and a series of pesticide formulations have passed company-organised environmental protection acceptance check upon project completion.

Jiangsu Sword's wholly-owned subsidiary Ningxia Surongda has recently completed construction of its 76,000 t/a pesticide intermediate project and put the lines into trial run. Once the new capacity successfully unleashed, Jiangsu Sword's pesticide intermediate business will be greatly boosted.

Shangyu Nutrichem has finished transformation of its old mesotrione production line and expanded its mesotrione TC capacity to 4,000 t/a.

Into Nov., the majority of herbicides TC have stable ex-works price, but some products see their price decrease.

The ex-works price of 2,4-D technical in China was stable in Nov. Although raw material costs reduced, operation in 2,4-D manufacturers did not improve due to slack demand. It is expected that 2,4-D price would keep stable or decline slightly, and the chance for a plunge is slim in the short term.

Both the FOB price of paraquat 42% TK and the ex-works price of pure pyridine in China in Nov. saw big YoY increase.

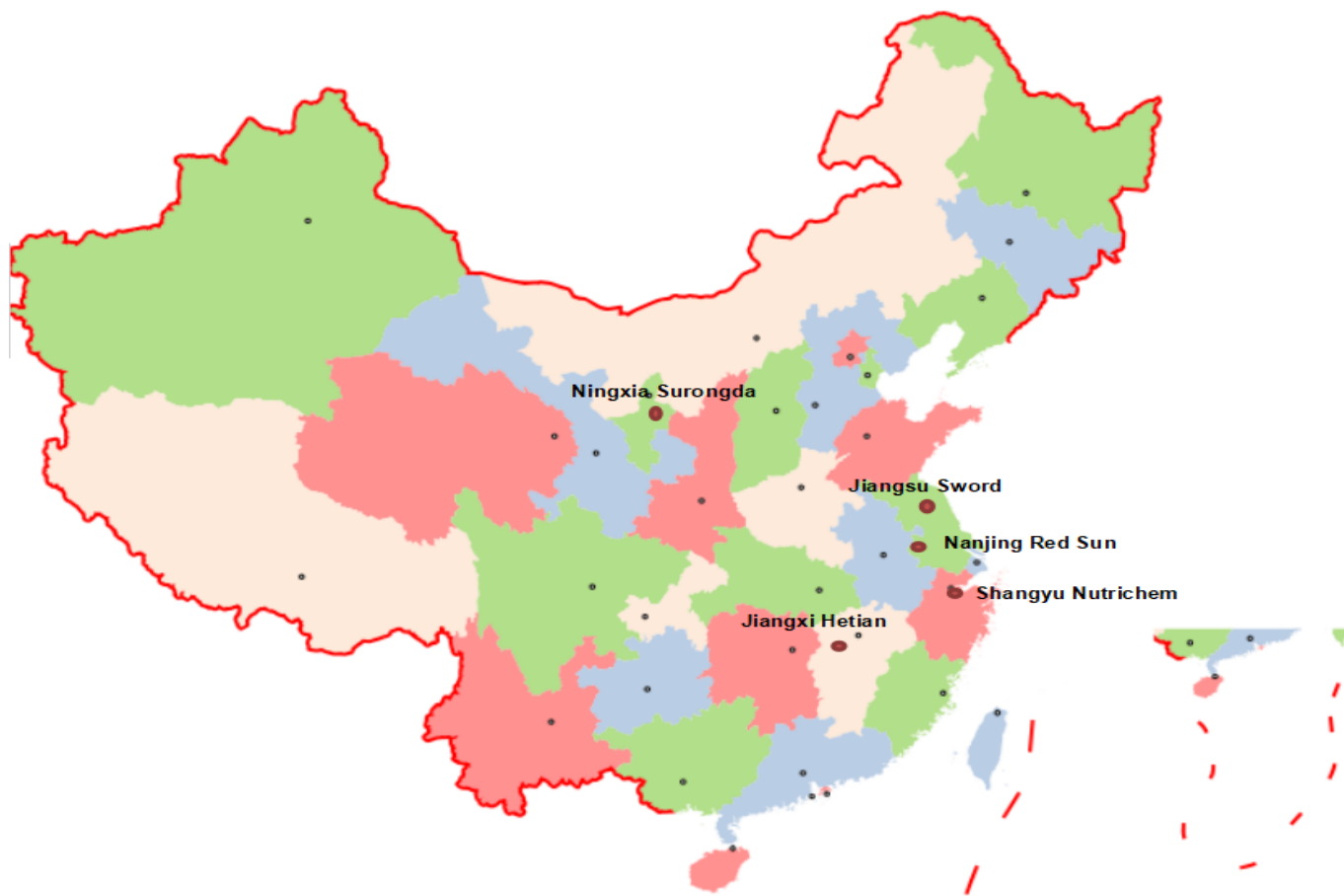
The Nanjing Intermediate People's Court has ruled to launch pre-packaged reorganisation in Nanjing Red Sun.

On 30 Oct., 2022, the 37th Session of the Standing Committee of the Thirteenth National People's Congress decided to adopt the Yellow River Protection Law of the People's Republic of China, which shall come into force on 1 April, 2023. A government official explained in detail the background and significance of promulgation and implementation of this law, and briefed the highlights and key points of the law.

In Nov. 2022, there are 435 herbicide products that get their pesticide registration renewed in China.

In Q3 2022, China mainly exported glufosinate-ammonium products to nine countries. The biggest export destination was the US; the volume exported to the US grew by nearly 20% YoY.







Editor's Note

In Nov., the majority of herbicides TC have stable ex-works price in China. It should be noted that the price of 2,4-D TC has kept stable, while the prices of glufosinate-ammonium TC and glyphosate TC have quite big drops.

As regards company dynamics, Jiangxi Hetian's 6,000 t/a pesticides TC, 2,800 t/a pesticide formulations and 200 t/a organic intermediate project (phase I) has come to an end; Jiangsu Sword's wholly-owned subsidiary Ningxia Surongda has recently completed construction of its 76,000 t/a pesticide intermediate project; Shangyu Nutrichem has expanded its mesotrione TC capacity to 4,000 t/a. Besides, Nanjing Red Sun has been ruled to go into pre-packaged reorganisation by the Nanjing Intermediate People's Court.

The USD/CNY exchange rate in this newsletter is USD1.00 = CNY7.2081 on 1 Nov., 2022, sourced from the People's Bank of China. All the prices mentioned in this newsletter will include the VAT, unless otherwise specified.





Company Dynamics

Jiangxi Hetian finishes acceptance check of several pesticide TC production lines

Summary: Jiangxi Hetian's production lines for flumetralin TC, flumetsulam TC, tebuthiuron TC and a series of pesticide formulations have passed company-organised environmental protection acceptance check upon project completion.

Early Nov., CCM learned from Jiangxi Hetian Technology Co., Ltd. (Jiangxi Hetian) that the first phase of its 6,000 t/a pesticides TC, 2,800 t/a pesticide formulations and 200 t/a organic intermediate project had come to an end. The newly-built production lines and supporting facilities have passed company-organised environmental protection acceptance check upon project completion. Construction of these lines started in April 2021 and finished in Jan. 2022. Jiangxi Hetian then put the lines into trial run from Feb. 2022. Products covered in the first phase are as follows:

- TC: 2,000 t/a tebuthiuron TC, 600 t/a flumetralin TC and 200 t/a flumetsulam TC;
- Single formulation: 700 t/a flumetralin 12.50% EC, 600 t/a flumetralin 25% EC, 500 t/a flumetralin 25% SC, 300 t/a tebuthiuron 20% GR, 300 t/a propargite 73% EC, 300 t/a fluazinam 500g/L SC and 100 t/a flumetsulam 80% WG.

Jiangxi Hetian, a wholly-owned subsidiary of Zhejiang Hetian Chemical Co., Ltd. (Zhejiang Hetian), was established in Feb. 2019. It is based in the Xingan Salt Chemical Industrial Park, Ji'an City, Jiangxi Province, which is a provincial level chemical park and allows entry of pesticide manufacturers. Other pesticide producers in the park include Jiangxi Tianyu Chemical Co., Ltd., Jiangxi Xinzhen Technology Co., Ltd. and Jiangxi Oushi Chemical Co., Ltd.

The pesticides TC, pesticide formulations and organic intermediate project was decided to be built at different phases, based upon market situation and the company's own condition. The rest production lines to be constructed are: 2,000 t/a propargite TC, 600 t/a fluazinam TC, 300 t/a lufenuron TC, 200 t/a fenhexamid TC, 100 t/a cyhalodiamide TC and 200 t/a 2-methyl-4-(1,1,1,2,3,3,3-heptafluoro-2-propyl)aniline (RFA).

As regards the parent company Zhejiang Hetian, it is one of the major pesticide enterprises in China, and its main products include TC, formulations and intermediates of pesticides, and other fine chemicals. It once had a production base—the subsidiary Lianyungang Hetian Chemical Co., Ltd. (Lianyungang Hetian)—in Lianyungang Duigou Chemical Industrial Park, Guannan County, Lianyungang City, Jiangsu Province. This subsidiary had built up production capacity of 1,500 t/a 5-tert-butyl-n-methyl-1,3,4-thiadiazol-2-amine, 100 t/a triazolesulfonamide, 1,000 t/a tebuthiuron TC, 250 t/a fluazinam TC, 200 t/a benfuracarb TC, 100 t/a flumetsulam TC and 50 t/a benmijunzhi (ZJ0712) TC. Yet Lianyungang Hetian had been forced into suspension and rectification since April 2018, out of concerns like work safety and environmental protection. It later withdrew from the park and had its intangible assets such as pesticide registration certificates transferred to Zhejiang Hetian.

This withdrawal is one of the reasons that push Zhejiang Hetian to establish Jiangxi Hetian and build it into a next production base. Beyond the large-scale pesticide project, Zhejiang Hetian has so far transferred product-specific resources to this subsidiary, including 19 pesticide registration certificates. More pesticide projects are expected to be launched in Jiangxi Hetian, to better respond to the overall





development strategy of the parent company.

Jiangsu Sword gets pesticide intermediate business on the fast track for development

Summary: Jiangsu Sword's wholly-owned subsidiary Ningxia Surongda has recently completed construction of its 76,000 t/a pesticide intermediate project and put the lines into trial run. Once the new capacity successfully unleashed, Jiangsu Sword's pesticide intermediate business will be greatly boosted.

In late Oct., Jiangsu Sword Agrochemicals Co., Ltd. (Jiangsu Sword) revealed that its wholly-owned subsidiary Ningxia Surongda Chemical Co., Ltd. (Ningxia Surongda) had brought the lines for 76,000 t/a pesticide intermediates in the Ningxia production base into trial run since 30 Sept., 2022. According to its plan, the trial production will last until 29 March, 2023. Intermediate products and their designed capacity planned in this large-scale project are: 20,000 t/a hydrazine hydrate, 10,000 t/a 1,2,4-triazole, 6,000 t/a thiocarbonylhydrazide, 10,000 t/a epoxide, 10,000 t/a pinacolone, 8,000 t/a p-chlorobenzaldehyde, 6,000 t/a triazinone and 6,000 t/a 1,1-dichloropinacol.

Jiangsu Sword is a backbone pesticide manufacturer in China, engaged in R&D, production and sale of pesticides. It established Ningxia Surongda in Feb. 2018 in the New Material Park of Ningdong Energy Chemical Industry Base, Yinchuan City, Ningxia Hui Autonomous Region. It plans to build the new subsidiary into its Ningxia production base.

Before setting up the Ningxia production base, Jiangsu Sword already had two bases in Yancheng City of Jiangsu Province, one in Jianhu County Economic Development Zone and the other in the Yanhai Chemical Industrial Park of Binhai County. The former, Jianhu base, focuses on pesticide formulation production, and the latter, Binhai base, mainly produces pesticide intermediates and pesticide technical products. However, operation in the two bases in Jiangsu has been challenged by workplace safety inspections and environmental protection inspections in recent years. Especially after the severe explosion in Xiangshui County on 21 March, 2019, the Binhai base was then ordered to suspend for rectification by local government.

The Binhai base once had, before the suspension, active production capacity of 1,000 t/a triadimefon TC, 400 t/a triadimenol TC, 2,000 t/a tebuconazole TC, 1,000 t/a propineb TC, 1,000 t/a flutriafol TC, 200 t/a hexaconazole TC, 50 t/a bitertanol TC, 200 t/a diniconazole TC, 500 t/a cyproconazole TC, 200 t/a azoxystrobin TC, 1,000 t/a bentazone TC, 1,800 t/a metribuzin TC, 1,000 t/a nitenpyram TC, 1,000 t/a acetamiprid TC, 500 t/a paclobutrazol TC, 50 t/a uniconazole TC, 2,600 t/a pinacolone, 1,300 t/a 1-chloropinacolone, 2,500 t/a 1,1-dichloropinacol and 3,000 t/a triazinone. After several rounds of rectification, some production lines have resumed production—as of 17 Oct., 2022, the lines for the four intermediates and cyproconazole TC, tebuconazole TC, metribuzin TC, triadimefon TC and triadimenol TC had been approved of resumption. On its way to restart production, the Binhai base also took the opportunity to shed the lines for nitenpyram TC, acetamiprid TC, flutriafol TC and hexaconazole TC. And currently, there is no update on the progress of resumption of the production capacity for the rest products in the Binhai base.





TABLE 1: Current production situation in Jiangsu Sword's Binhai base after rectification

Category	Product	Capacity, t/a	Current status
Pesticide TC	Tebuconazole	2,000	The lines for these products have resumed production.
	Metribuzin	1,800	
	Triadimefon	1,000	
	Cyproconazole	500	
	Triadimenol	400	
	Propineb	1,000	The lines for these products have been brought to a halt.
	Bentazone	1,000	
	Paclobutrazol	500	
	Azoxystrobin	200	
	Diniconazole	200	
	Bitertanol	50	
	Uniconazole	50	The lines for these products were dismantled.
	Nitenpyram	1,000	
	Acetamiprid	1,000	
Flutriafol	1,000		
Hexaconazole	200		
Pesticide intermediate	Triazinone	3,000	The lines for these products have resumed production.
	Pinacolone	2,600	
	1,1-Dichloropinacolin	2,500	
	1-Chloropinacolone	1,300	

Source:CCM

The decision to launch the 76,000 t/a pesticide intermediate project in Ningxia was made based upon Jiangsu Sword's development plan and supply-demand dynamics in the market. The intermediates planned in the project are all upstream materials for the production of its existing fungicides TC and herbicides TC. Some intermediates are even main products with active capacity in the Jiangsu production base.





The other intermediates also help lay the foundation for the company to further extend to manufacturing other pesticides TC. In general, production of and R&D on low-cost, high-quality intermediate products is one of the important guarantees to push pesticide industry forward. And to Jiangsu Sword itself, with the new capacity in the subsidiary successfully unleashed, its pesticide intermediate business will be boosted significantly.

Shangyu Nutrichem successfully expands mesotrione TC capacity

Summary: Shangyu Nutrichem has finished transformation of its old mesotrione production line and expanded its mesotrione TC capacity to 4,000 t/a.

On 15 Nov., Shangyu Nutrichem Co., Ltd. (Shangyu Nutrichem) revealed that the company had finished the expansion and transformation of its mesotrione production line, bringing the total capacity to 4,000 t/a. This expansion will boost Shangyu Nutrichem's competitiveness in the mesotrione market.

Shangyu Nutrichem, established in Nov. 2003, is currently a wholly-owned subsidiary of Nutrichem Co., Ltd. It is located in Hangzhou Bay Shangyu Economic and Technological Development Zone, Shaoxing City, Zhejiang Province. It has grown into one of the key pesticide enterprises in this zone, with two separate factories there. The southern factory mainly produces pesticides TC and pesticide intermediates, while the northern factory mainly engages in the production of safeners and pesticide formulations; the two production bases are about 4.5 km away from each other.

Mesotrione is one of Shangyu Nutrichem's flagship products. With years of experience, the company has built certain influence in the market. Before the expansion, it had only 600 t/a mesotrione production capacity.

Shangyu Nutrichem will not just stop here. In fact, the mesotrione capacity expansion is only a part of a grand renovation and optimisation project planned in the southern factory. The overall project involves rebuilding some existing workshops, expanding production capacity for existing products, carrying out transformation of and upgrades on old production lines, phasing out backward production equipment and cancelling these products, and setting up new lines for new, promising products. The company is pushing ahead in an orderly manner with other programs planned in the project, such as capacity expansion for the existing products as follows:

- Azoxystrobin TC: expand by 3,400 t/a to a final 4,000 t/a;
- Tebuconazole TC: expand by 2,400 t/a to a final 3,000 t/a;
- Oxyfluorfen TC: expand by 1,800 t/a to a final 3,000 t/a;
- Flumioxazin TC: expand by 900 t/a to a final 1,000 t/a;
- Isoxaflutole TC: expand by 300 t/a to a final 500 t/a.

Returning to mesotrione, the product is a safe, environmental-friendly, broad-spectrum and high-efficacy triketone herbicide with strong herbicidal activity. It has quite good performance in the control of gramineous, broadleaf and sedge weeds. Its application is actively promoted in maize fields.





It is not a surprise that mesotrione has attracted great attentions of Chinese pesticide enterprises in recent years. Indeed, mesotrione TC capacity in China has increased quite obviously; some producers have even extended their reach to the upstream sector—building production capacity for the intermediates 2-nitro-4-methylsulfonylbenzoic acid and 1,3-cyclohexanedione. Incomplete statistics from the China Crop Protection Industry Association (CCPIA) show that, at present, besides Shangyu Nutrichem, major pesticide producers with active mesotrione TC capacity in China are: Jiangsu Youjia Crop Protection Co., Ltd., Shenyang Sciencreat Chemicals Co., Ltd., Inner Mongolia Zhonggao Chemical Co., Ltd., Anhui Zhongshan Chemical Co., Ltd., Zhangye Dagong Pesticide Chemistry Co., Ltd., Limin Chemical Co., Ltd., Liaoning Longtian Chemical Technology Co., Ltd. and Hubei Guangfulin Biological Products Co., Ltd.

Mesotrione TC capacity in China will continue to grow. Aside from capacity expansion plans of existing players, new players will also join the game. Pesticide producers like Jiangsu Fengshan Group Co., Ltd., Jiangsu Changqing Agrochemical Co., Ltd., Yongnong BioSciences Co., Ltd. and Gansu Ruidong Chemical Co., Ltd. have invested or planned to invest in large-scale mesotrione TC projects. With more producers and production capacity coming, stiffer competition is expected in this market.





Market Analysis

Most herbicides TC have stable price in early Nov., some see the price drop

Summary: Into Nov., the majority of herbicides TC have stable ex-works price, but some products see their price decrease.

In early-to-mid Nov., of triazine herbicides, atrazine TC and ametryn TC had stable price. Atrazine TC was still in a slow season. Sulfonyleurea herbicides also experienced stable price. Florasulam TC price edged up 0.59% MoM to USD71,170/t (RMB513,000/t).

Amide herbicides saw mixed trends in their price, mainly decided by demand. Raw material price of herbicides under this category was still at a high level, and production costs remained high. The price of pretilachlor TC continued to decline, at faster pace even, coming to USD4,717/t (RMB34,000/t) with a 12.82% MoM fall, due to shrinking demand. On the contrary, the price of metolachlor TC kept increasing, up by 5.45% MoM to USD8,047/t (RMB58,000/t) amid growing export demand.

As for organophosphorus herbicides, glufosinate-ammonium TC saw its ex-works price decline by 10.45% MoM to USD27,594/t (RMB198,900/t), and glyphosate TC had a 7.97% dive MoM in its price, landing at USD7,533/t (RMB54,300/t), due to shrinking export and small trade in the market.

Ex-works price of diuron TC slipped by 2.13% MoM to USD6,382/t (RMB46,000/t). The price of export-oriented diquat TK went down 1.75% MoM to USD7,769/t (RMB56,000/t).





TABLE 2: Ex-works prices of main herbicides TC in early-to-mid Nov. 2022

Category	Product	Content of active ingredient	Ex-works price in early-to-mid Nov., RMB/t	USD/t	MoM change based on RMB
Triazine herbicides	Atrazine TC	97%	36,000	4,994.38	Basically flat
	Ametryn TC	95%	45,000	6,242.98	Basically flat
Sulfonylurea herbicides	Nicosulfuron TC	95%	265,000	36,764.20	Basically flat
	Quizalofop-P-ethyl TC	95%	235,000	32,602.21	Basically flat
	Bensulfuron-methyl TC	96%	200,000	27,746.56	Basically flat
Amide herbicides	Pretilachlor TC	95%	34,000	4,716.92	Down
	Acetochlor TC	92%	39,500	5,479.95	Basically flat
	Metolachlor TC	97%	58,000	8,046.50	Up
Organophosphorus herbicides	Glufosinate-ammonium TC	95%	198,900	27,593.96	Down
	Glyphosate TC	95%	54,300	7,533.19	Down
Triazolo[1,5-a]pyrimidine-2-sulfonanilide herbicides	Florasulam TC	98%	513,000	71,169.93	Up
Bipyridinium herbicides	Diquat TK	40%	56,000	7,769.04	Down
Substituted phenylurea herbicides	Diuron TC	97%	46,000	6,381.71	Down

Source:CCM

2,4-D price keeps stable

Summary: The ex-works price of 2,4-D technical in China was stable in Nov. Although raw material costs reduced, operation in 2,4-D manufacturers did not improve due to slack demand. It is expected that 2,4-D price would keep stable or decline slightly, and the chance for a plunge is slim in the short term.

Into 2022, the ex-works price of 2,4-D technical in China dropped continuously to May; it recovered bit by bit from June to Aug., and then has stabilised. The Nov. price remained at USD3,330/t (RMB24,000/t); slack downstream demand and inactive operation in the majority of





2,4-D producers led to this stable price.

In general, the price of 2,4-D's raw materials dropped this month. The ex-works price of phenol shot from USD1,377/t (RMB9,207/t) in July to USD1,522/t (RMB10,803/t), but dived to USD1,238/t (RMB8,925/t) in Sept, down 17.38% MoM (based on RMB price). In contrast, the ex-works price of chloroacetic acid kept edging up to USD520/t (RMB3,750/t).

Decreased raw material costs may become an incentive to increase operating rate in the 2,4-D manufacturers. Yet they are still challenged by dull demand. It is expected that the ex-works price of 2,4-D technical would keep stable or decline slightly, and the chance for a price plunge is slim in the short term.

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

Month	Phenol		Chloroacetic acid	
	USD/t	RMB/t	USD/t	RMB/t
July	1,377	9,207	579	3,870
Aug.	1,371	9,253	524	3,537
Sept.	1,517	10,444	529	3,640
Oct.	1,522	10,803	525	3,730
Nov.	1,238	8,925	520	3,750

Source:CCM





FIGURE 1: Ex-works price of 96% 2,4-D technical in China, Jan.–Nov. 2022



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





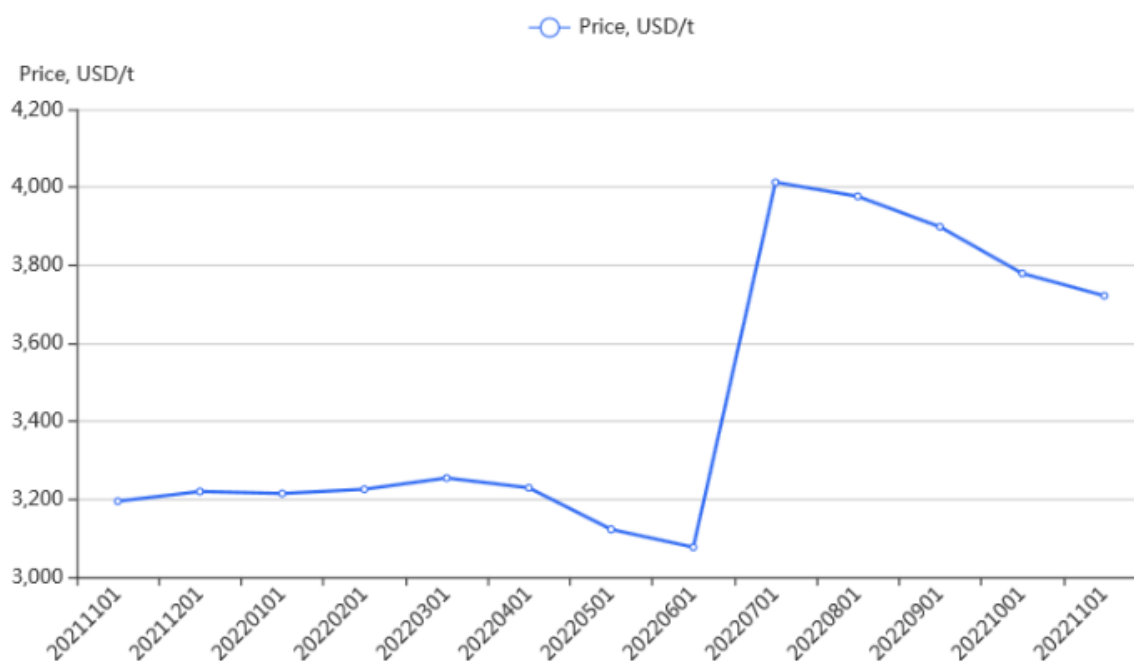
Paraquat and Pyridine

Nov. prices of paraquat and pure pyridine have big YoY increase

Summary: Both the FOB price of paraquat 42% TK and the ex-works price of pure pyridine in China in Nov. saw big YoY increase.

CCM's price monitoring data show that the FOB price of paraquat TK in China slipped by 1.52% MoM to USD3,722/t in Nov., but the price still registered a 16.49% rise on a yearly basis. The ex-works price of pure pyridine was stable this month, at USD5,827/t (RMB42,000/t), which grew by 50% from the level in Nov. 2021.

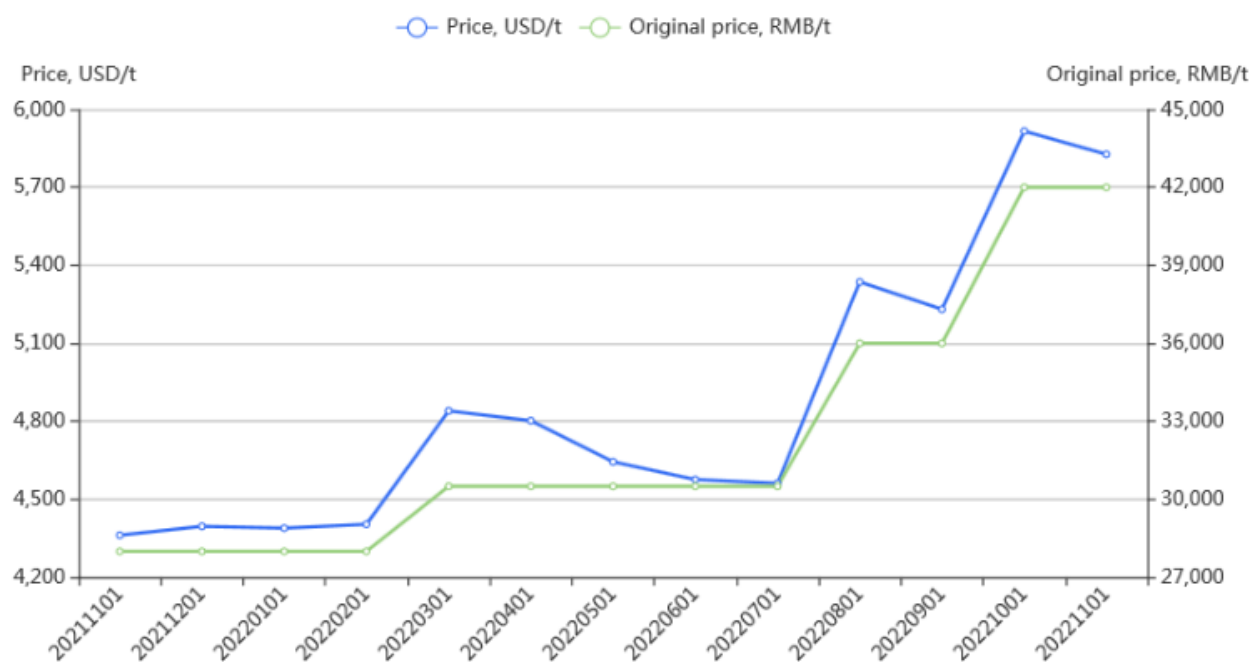
FIGURE 2: FOB price of paraquat 42% TK in China, Nov. 2021–Nov. 2022



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



FIGURE 3: Ex-works price of pure pyridine in China, Nov. 2021–Nov. 2022



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

Source: CCM

Nanjing Red Sun to go into pre-packaged reorganisation

Summary: The Nanjing Intermediate People's Court has ruled to launch pre-packaged reorganisation in Nanjing Red Sun.

On 8 Nov., 2022, Nanjing Red Sun Co., Ltd. (Nanjing Red Sun) announced that the Nanjing Intermediate People's Court had ruled to launch pre-packaged reorganisation in the company. Previously, Nanjing Red Sun's creditor Nanjing Teva-Chem. Co., Ltd. (Nanjing Teva-Chem) had applied a petition for reorganisation of Nanjing Red Sun at the court since the company could not pay off its debts. The creditor also filed for a start of pre-packaged reorganisation.

Nanjing Teva-Chem once supplied Nanjing Red Sun with emulsifying agents. In 2019, it signed 54 sale contracts with Nanjing Red Sun, the total sum adding up to some USD1.99 million (RMB14.36 million). Thereafter, Nanjing Red Sun only paid a small part of the payment, and as of 15 Jan., 2021, there had been USD1.82 million (RMB13.15 million) overdue.

Nanjing Red Sun's semi-annual report in 2022 shows that the company achieved a revenue of USD482.30 million (RMB3,476.47 million) and a net profit attributable to shareholders of the listed company of SD85.62 million (RMB617.19 million) in H1 2022. Its asset-liability ratio dropped from 93.91% by the end of 2021 to 87.84% by the end of June 2022. Its performance in Q3 2022 continued improving, and the net profit attributable to shareholders of the listed company in the first three quarters added up to USD131.20 million (RMB945.72 million). According to a relevant person in charge of the company, though there is profit generated by its subsidiaries, the money should be spent on maintaining operation in these subsidiaries and paying its debts. As of the end of Sept. 2022, the company's overdue short-term borrowing surpassed USD416 million (RMB3,000 million), and it could not pay off these debts with the profits gained.



The same source also revealed that the company had great difficulties in clearing its debts on its own. As regards the potential reorganisation, the company must confront tough issues such as how to deal with problems carried over from the past like funds occupation by its controlling shareholder and earnings compensation, the protection of rights & interests of minority shareholders, and debt repayment. In formulating the reorganisation plan, the company will try its best to protect the legitimate rights and interests of all parties to the maximum extent, taking into account, in accordance with regulatory requirements, the demands of its creditors and minority shareholders, the recruitment result of reorganisation investors, as well as opinions and suggestions of various regulatory authorities.





Policy

Better understanding of Yellow River Protection Law

Summary: On 30 Oct., 2022, the 37th Session of the Standing Committee of the Thirteenth National People's Congress decided to adopt the *Yellow River Protection Law of the People's Republic of China*, which shall come into force on 1 April, 2023. A government official explained in detail the background and significance of promulgation and implementation of this law, and briefed the highlights and key points of the law.

The *Yellow River Protection Law of the People's Republic of China*, passed at the 37th Session of the Standing Committee of the Thirteenth National People's Congress of the People's Republic of China on 30 Oct., 2022, will come into force on 1 April, 2023. Yuan Jie, an official with the Legislative Affairs Commission of the NPC Standing Committee, explained in detail the background and significance of promulgation and implementation of this law, and briefed the highlights and key points of the law.

According to Mr. Yuan, promulgation of the Yellow River Protection Law is a measure vital to the full understanding of the spirits of President Xi's speeches and orders concerning ecological protection and high-quality development of the Yellow River basin, as well as to the full implementation of the decisions and arrangements of the Party Central Committee. The law timely provides a legal guarantee to ramping up efforts to follow a major national strategy of balancing eco-protection and high-quality development in the Yellow River basin; it helps to deal with problems specific to the basin based on its regional realities; it is a practice to improve legal mechanism necessary to the fulfilment of growing needs for a better life in the people of the Yellow River basin. The law also refines China's socialistic legal system of ecological environmental protection with Chinese characteristics.

The Yellow River Protection Law focuses on the features of the region, as well as the major issues in conflict in the protection work. It draws on previous experience of Yellow River protection and develops comprehensive and concrete regulations. As a landmark piece of legislation in river-basin protection, the new law will provide solid support for promoting the ecological protection and high-quality development of the Yellow River basin. It highlights the following principles:

- Prioritise protection and treatment: Take water resources as the biggest rigid constraint. Put the water at the core, and treat the rivers as a link and the basin as a basis. Seriously stick to the idea that the water resources decide the size of cities and their population, decide land use planning, and decide industry scale and structure.
- Take a problem-oriented attitude: Ease the most important conflict in the basin—between water and sand. Take region-specific measures and measures targeting particular problems.
- Treat the basin as a whole: Try best to balance the interests of all parties in this basin. Balance ecological protection and economic development. Make the legal system for the protection of the Yellow River more systemic, holistic, synergistic and up-to-date; make the new law go hand in hand with the relevant laws and foster a better synergy.

The law has clear provisions on strengthening ecological protection and restoration, carrying forward conservation and intensive utilisation of water resources, controlling floods, stimulating high-quality development, as well as protecting, inheriting, and promoting the Yellow River culture. In terms of ecological protection and restoration, the law specifies the following aspects to enhance pollution prevention and control:

- The central government will intensify comprehensive, systemic and source management of pollution in the Yellow River basin, and





push forward with comprehensive environmental improvement in major rivers and lakes in the basin.

- Investigation and monitoring of toxic and hazardous chemical substances, and environmental risk assessment and management shall be carried out in the Yellow River basin. Management and treatment of new pollutants shall be intensified.
- New standards shall be introduced for water environmental quality, water pollutant discharging, and new regulations drafted on total discharging amount control of water pollutants, supervision and control of sewage outlets, prevention and control of soil and groundwater pollution, prevention and control of solid waste pollution, management of agricultural non-point source pollution, etc.





Registration

Over 400 herbicide products get registration renewed in Nov.

Summary: In Nov. 2022, there are 435 herbicide products that get their pesticide registration renewed in China.

In Nov. 2022, the Ministry of Agriculture and Rural Affairs of the People's Republic of China approved pesticide registration renewal of 435 herbicide products, consisting of 56 TC products, one TK products and 378 formulation products mainly in the form of OD, AS, EC and WP. Main control targets are annual weeds, weeds, annual broadleaf weeds and annual gramineous weeds. The majority of these products are of low toxicity.



TABLE 4: Form of herbicide products renewed registration in China, Nov. 2022

No.	Form	Number
1	OD	92
2	AS	77
3	EC	65
4	TC	56
5	WP	50
6	SC	31
7	WG	17
8	SG	10
9	EW	8
10	SE	7
11	SP	6
12	ME	6
13	CS	3
14	GR	2
15	GG	2
16	TK	1
17	EB	1
18	OF	1
Total		435

Source: Ministry of Agriculture and Rural Affairs

TABLE 5: Toxicity of herbicide products renewed registration in China, Nov. 2022

No.	Toxicity	Number
1	Low	380
2	Mild	53
3	Moderate	2
Total		435

Source: Ministry of Agriculture and Rural Affairs

TABLE 6: Control target of herbicide products renewed registration in China, Oct. 2022

No.	Control target	Number
1	Annual weeds	184
2	Weeds	78
3	Annual broadleaf weeds	46
4	Annual gramineous weeds	41
5	Broadleaf weeds	23
6	Barnyard grass	22
7	Perennial weeds	8
8	Some broadleaf weeds	7
9	Sedge	6
10	Some gramineous weeds	3
11	<i>Leptochloa chinensis</i>	1
12	Alligator weed	1
13	<i>Mikania micrantha</i>	1
Total		421

Note: 1. 58 Products are registered without info on the item of control target.

2. Some products are registered with multiple control targets.

Source: Ministry of Agriculture and Rural Affairs



Trade Analysis

The US, largest export destination of China's glufosinate-ammonium products in Q3 2022

Summary: In Q3 2022, China mainly exported glufosinate-ammonium products to nine countries. The biggest export destination was the US; the volume exported to the US grew by nearly 20% YoY.

According to export data from Tranalysis, in Q3 2022, China mainly exported 4,586.71 tonnes (100% AI volume, the same hereafter) of glufosinate-ammonium products to nine countries, including the US, Vietnam, Argentina, Thailand and Paraguay. Export to the US, the largest export destination, reached 3,466.65 tonnes, up by 562.32 tonnes compared with the volume in Q3 2021.

Details of China's glufosinate-ammonium exports in Q3 2022 are as follows:

Glufosinate-ammonium TC

Specification for export: 95% TC, 96% TC, 98% TC

Major destination: China exported 2,029.99 tonnes of glufosinate-ammonium TC to major destinations, at an average price (based on 100% AI) of USD17.57/kg. The US was the largest export destination with a volume of 1,380.12 tonnes, taking up 67.99% of China's total glufosinate-ammonium TC exports during this period.

Compared with Q3 2021, Q3 2022 saw glufosinate-ammonium TC export to major destinations decrease by 2,916.33 tonnes. The export to the US dropped by 518.42 tonnes, but its share to the total TC export jumped by 29.61 percentage points.

Glufosinate-ammonium formulation

Specification for export: 10% SL, 150g/L AS, 150g/L SL, 200g/L SL, 50% TK

Major destination: China exported 2,556.72 tonnes of glufosinate-ammonium formulations to major destinations, at an average price (based on 100% AI) of USD20.74/kg. The US also ranked the first as the biggest glufosinate-ammonium formulation export destination with 2,086.53 tonnes, which accounts for 81.61% of China's total glufosinate-ammonium formulation exports during this period.

Compared with Q3 2021, Q3 2022 saw glufosinate-ammonium formulation export to major destinations grow by 202.25 tonnes. In particular, the export to the US doubled, up by 1,080.74 tonnes, and its share to the total formulation export jumped by 38.89 percentage points.





TABLE 7: Exports of glufosinate-ammonium TC products to major destinations from China, Q3 2022

No.	Destination	Volume (100% AI), kg	Value, USD	Average price (based on 100% AI), USD/kg
1	The US	1,380,115.37	15,540,398.54	11.26
2	Argentina	292,125.00	9,362,971.36	32.05
3	Paraguay	159,132.00	4,252,769.94	26.72
4	Vietnam	106,400.00	3,480,250.00	32.71
5	Mexico	37,050.00	1,334,533.31	36.02
6	Thailand	32,228.75	1,072,250.00	33.27
7	Costa Rica	15,200.00	370,563.00	24.38
8	Turkey	7,720.00	243,200.00	31.50
9	India	23.75	2,250.00	94.74
Total		2,029,994.87	35,659,186.15	17.57

Note: The data, sourced from Tranalysis, were updated on 3 Nov., 2022.

Source: Tranalysis

TABLE 8: Exports of glufosinate-ammonium formulation products to major destinations from China, Q3 2022

No.	Destination	Volume (100% AI), kg	Value, USD	Average price (based on 100% AI), USD/kg
1	The US	2,086,534.88	37,559,807.92	18.00
2	Vietnam	265,641.00	8,385,195.00	31.57
3	Thailand	147,177.00	5,179,040.00	35.19
4	Ecuador	27,464.37	907,645.65	33.05
5	The Philippines	19,507.20	662,928.59	33.98
6	Paraguay	6,060.00	184,300.00	30.41
7	Peru	4,334.00	156,610.11	36.14
8	Mexico	0.35	2.04	5.83
Total		2,556,718.80	53,035,529.31	20.74

Note: The data, sourced from Tranalysis, were updated on 3 Nov., 2022.





Source:Tranalysis

TABLE 9: Export of glufosinate-ammonium TC products to major destinations from China, Q3 2022 vs Q3 2021

No.	Destination	Q3 2022		Q3 2021	
		Volume (100% AI), kg	Share	Volume (100% AI), kg	Share
1	The US	1,380,115.37	67.99%	1,898,536.01	38.38%
2	Argentina	292,125.00	14.39%	487,350.00	9.85%
3	Paraguay	159,132.00	7.84%	306,740.00	6.20%
4	Vietnam	106,400.00	5.24%	176,800.00	3.57%
5	Mexico	37,050.00	1.83%	/	/
6	Thailand	32,228.75	1.59%	2,850.00	0.06%
7	Costa Rica	15,200.00	0.75%	17,100.00	0.35%
8	Turkey	7,720.00	0.38%	/	/
9	India	23.75	<0.01%	172,600.00	3.49%
Total/Sub-total		2,029,994.87	100.00%	3,061,976.01	61.90%

Note:1. The data, sourced from Tranalysis, were updated on 3 Nov., 2022.

2. According to Tranalysis, there were no data for glufosinate-ammonium TC export from China to Mexico and Turkey in Q3 2021.

Source:Tranalysis





TABLE 10: Export of glufosinate-ammonium formulation products to major destinations from China, Q3 2022 vs Q3 2021

No.	Destination	Q3 2022		Q3 2021	
		Volume (100% AI), kg	Share	Volume (100% AI), kg	Share
1	The US	2,086,534.88	81.61%	1,005,799.20	42.72%
2	Vietnam	265,641.00	10.39%	302,416.00	12.84%
3	Thailand	147,177.00	5.76%	327,942.16	13.93%
4	Ecuador	27,464.37	1.07%	/	/
5	The Philippines	19,507.20	0.76%	26,407.96	1.12%
6	Paraguay	6,060.00	0.24%	61,440.00	2.61%
7	Peru	4,334.00	0.17%	11,256.00	0.48%
8	Mexico	0.35	<0.01%	/	/
Total/Sub-total		2,556,718.80	100.00%	1,735,261.32	73.70%

Note:1. The data, sourced from Tranalysis, were updated on 3 Nov., 2022.

2. According to Tranalysis, there were no data for glufosinate-ammonium formulation export from China to Ecuador and Mexico in Q3 2021.

Source:Tranalysis



**Brief News****Sichuan Hebang starts construction of 500kt/a PMIDA project**

On 28 Oct., construction of the 500,000 t/a PMIDA project of Sichuan Hebang Biotechnology Co., Ltd. (Sichuan Hebang) kicked off in the Guang'an Xinqiao Chemical Industrial Park, Guang'an City, Sichuan Province. The project will lead the Xinqiao Park to become the world-largest PMIDA production base.

Currently, Sichuan Hebang is the largest PMIDA supplier worldwide, capturing 70% share of the global market. PMIDA is a vital intermediate widely used in industries like pesticide, pharmaceutical, rubber, electroplating and dye.

Zhejiang to approve expansion of three chemical parks

On 2 Nov., the Economy and Information Technology Department of Zhejiang Province issued the first-batch list of chemical parks to be approved of expansion, with three parks on the list.

TABLE 11: Chemical park expansion to be approved in Zhejiang Province (first batch)

No.	Chemical park	Location
1	Sanmen County Coastal Industrial City Chemical Industry Cluster Area	Sanmen County, Taizhou City
2	Zhejiang Xianju Economic Development Zone	Xianju County, Taizhou City
3	Suichang County Chemical Industrial Park	Suichang County, Lishui City

Source: Economy and Information Technology Department of Zhejiang Province

FLAGCHEM starts trial production of some lines planned in 15.5kt/a pesticide project

On 1 Nov., Jiangsu Flag Chemical Industry Co., Ltd. (FLAGCHEM)'s holding subsidiary Anhui Neotec Co., Ltd. held a ceremony in the Anhui Huaibei New Coal Chemical Synthetic Material Base for putting into trial operation of some production lines of the 15,500 t/a pesticide TC and related product project.

The project, covering some 27.8 ha of land, has planned to build production lines of 3,000 t/a fluroxypyr-methyl TC, 1,000 t/a flumioxazin TC, 3,000 t/a lufenuron TC, 1,000 t/a spirotetramat TC, 1,000 t/a isoxaflutole TC, 3,000 t/a clothianidin TC, 500 t/a carfentrazone-ethyl TC, 1,500 t/a Jing'ecuogancaoan (glyamifop) TC, 500 t/a topramezone TC and 1,000 t/a saflufenacil TC.

Jiangsu Corechem plans to build 1kt/a flufenacet capacity

On 31 Oct., the Ecology and Environment Bureau of Huai'an City approved Jiangsu Corechem Co., Ltd. (Jiangsu Corechem)'s 1,000 t/a trifloxystrobin and 1,000 t/a flufenacet technological transformation project. The company will invest USD23.62 million (RMB170.29 million) in this project and build 1,000 t/a trifloxystrobin TC and 1,000 t/a flufenacet TC production capacity in its existing factory at No.18 Shilian Avenue, southern region of Jiangsu Huai'an Industrial Park in Jiangsu Province.



Liaoning unveils second batch approved chemical parks

On 9 Nov., the Liaoning Provincial Industry and Informatization Department issued the second-batch list of approved chemical parks, with nine parks on the list.

TABLE 12: List of approved chemical parks in Liaoning Province (second batch)

No.	Chemical park	Location
1	Shenyang Chemical Industrial Park	Shenyang City
2	Dalian Dagushan Chemical Industrial Park	Dalian City
3	Fushun High-tech Industrial Development Zone Chemical & Fine Chemical Industrial Park	Fushun City
4	Anshan Fine Organic New Material Chemical Industrial Park	Anshan City
5	Liaoning (Yingkou) Coastal Industrial Base Chemical Industry Zone	Yingkou City
6	Donggang Qianyang Fine Chemical Industrial Park	Dandong City
7	Jinzhou Binhai Chemical Industrial Park	Jinzhou City
8	Chaoyang Liucheng Economic Development Zone Chemical Industrial Park	Chaoyang City
9	Panjin Shuaixiang Industrial Park	Panjin City

Source: Liaoning Provincial Industry and Informatization Department

Shanxi releases first-batch list of approved chemical parks

On 17 Nov., the People's Government of Shanxi Province issued the first-batch list of approved chemical parks, with eight parks on the list.

**TABLE 13:** First-batch list of approved chemical parks in Shanxi Province

No.	Chemical park	Location
1	Yanggao County Longquan Chemical Industrial Park	Yanggao County, Datong City
2	Pingding County Longchuan Chemical Industrial Park	Pingding County, Yangquan City
3	Xiangyuan County Chemical Industrial Park Wangqiao Area and Fuyang Area	Xiangyuan County, Changzhi City
4	Lucheng District Chemical Industrial Park East Area and West Area	Lucheng District, Changzhi City
5	Yangcheng County Taitou Chemical Industrial Park	Yangcheng County, Jincheng City
6	Lingchuan County Pingcheng Chemical Industrial Park	Lingchuan County, Jincheng City
7	Guxian County Jianhe Chemical Industrial Park	Guxian County, Linfen City
8	Wanrong County Huangfu Chemical Industrial Park	Wanrong County, Yuncheng City

Source: People's Government of Shanxi Province

Anhui Kangmu plans 12kt/a PMIDA project

On 14 Nov., the environmental impact report of Anhui Kangmu International Fertilizer Co., Ltd. (Anhui Kangmu)'s 12,000 t/a PMIDA project was accepted by Bengbu government. The company plans to build up 12,000 t/a PMIDA production capacity in its existing factory on Kaiyuan Avenue, Mohekou Town, Huaishang District, Bengbu City, Anhui Province. Along with the new PMIDA lines, sewage treatment, environmental protection and some other supporting facilities will also be constructed.

Jingzhou Sancaitang plans 52kt/a pesticide TC project

On 21 Nov., the environmental impact report of the 52,000 t/a pesticide TC project of Jingzhou Sancaitang Chemical Technology Co., Ltd. (Jingzhou Sancaitang) was publicised on the website of the Jingzhou Municipal Ecology and Environmental Bureau. The company plans to construct production lines of 20,000 t/a diquat TK, 10,000 t/a picloram TC, 5,000 t/a aminopyralid TC, 5,000 t/a clopyralid TC, 3,000 t/a fluroxypyr-mepthyl TC, 5,000 t/a triclopyr TC, 2,000 t/a clodinafop-propargyl TC and 2,000 t/a cloquintocet-mexyl in the factory on the Huangqiao Road, north of Guanzhong Avenue, Tanqiao Town, Jingzhou Development Zone, Hubei Province.

Jingzhou Sancaitang is a wholly-owned subsidiary of Lier Chemical Co., Ltd.

Lier Chemical plans to build capacity for chemical intermediates

On 21 Nov., the board of Lier Chemical Co., Ltd. (Lier Chemical) decided to adopt the proposal to launch a chemical intermediate project, which will be undertaken by its wholly-owned subsidiary Guang'an Lier Chemical Co., Ltd. A major intermediate product covered in the project in the Guang'an production base is 3,4,5,6-tetrachloropyridine-2-carboxylic acid sodium, which is a vital intermediate for the synthesis of pyridine herbicides like clopyralid and picloram.





Jiangxi releases new policy for chemical park management

On 18 Nov., the Department of Industry and Information Technology of Jiangxi Province issued the *Detailed Rules for the Implementation of Construction Standards of Chemical Parks, and Measures for Accreditation and Management of Chemical Parks (Trial)*, which will take effect on 22 Dec., 2022. The new policy rules that chemical parks that have not been accredited are banned from launching new construction or expansion projects for chemical products (safety improvement, environmental protection, energy conservation, and intellectual transformation projects excluded). Meanwhile, efforts should be made to carry out self-assessment and review oriented toward the recognised chemical parks on a five-year basis. Chemical parks failed to pass the review, or having major or even more severe workplace accidents or environmental emergencies, shall be urged to carry out rectification in accordance with related laws and regulations within certain period of time. During the rectification, formalities for construction and expansion of chemical projects (safety improvement, environmental protection, energy conservation, and intellectual transformation projects excluded) shall be halted. Once parks could not meet the requirements after rectification, local governments shall disqualify such parks for accreditation.





Price Update

Ex-works prices of key herbicide raw materials in China, 8 Nov., 2022

TABLE 14: Ex-works prices of key herbicide raw materials in China, 8 Nov., 2022

Raw Materials	20221008		20221108	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	14,000	1,972.05	14,500	2,012
92% Iminodiacetonitrile	9,300	1,310.01	9,300	1,290
99% Isopropylamine	9,550	1,345.22	9,550	1,325
98% N-(Phosphonmethyl) Iminodiacetic acid	35,500	5,000.56	35,000	4,856
99% Phosphorus trichloride	9,640	1,357.9	8,410	1,167
99.9% Pyridine	42,000	5,916.16	42,000	5,827

Note: Ex-works price includes VAT.

Source: CCM

Ex-works prices of main herbicides in China, 8 Nov., 2022





TABLE 15: Ex-works prices of main herbicides in China, 8 Nov., 2022

Product	20221008		20221108	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
96% 2,4-D technical	24,000	3,380.66	24,000	3,330
92% Acetochlor technical	39,500	5,564.01	39,500	5,480
97% Atrazine technical	36,000	5,070.99	36,000	4,994
96% Bensulfuron-methyl technical	200,000	28,172.19	200,000	27,747
92% Butachlor technical	26,500	3,732.81	26,500	3,676
95% Clomazone technical	118,000	16,621.59	118,000	16,370
95% Cyhalofop-butyl technical	188,000	26,481.86	188,000	26,082
97% Diuron technical	47,000	6,620.46	46,000	6,382
98% Fenclorim technical	140,000	19,720.53	130,000	18,035
95% Fenoxaprop-P-ethyl technical	182,000	25,636.69	182,000	25,249
96% Fluroxypyr technical	174,000	24,509.8	172,000	23,862
95% Fomesafen technical	139,000	19,579.67	139,000	19,284
95% Glufosinate ammonium technical	222,100	31,285.22	198,900	27,594
95% Glyphosate technical	59,000	8,310.8	54,300	7,533
95% Haloxyfop-P-methyl technical	222,000	31,271.13	220,000	30,521
97% Metolachlor technical	55,000	7,747.35	58,000	8,047
95% Metsulfuron-methyl technical	135,000	19,016.23	135,000	18,729
95% Nicosulfuron technical	265,000	37,328.15	265,000	36,764
97% Oxyfluorfen technical	227,000	31,975.43	225,000	31,215
95% Pendimethalin technical	63,500	8,944.67	63,500	8,810
95% Pretilachlor technical	39,000	5,493.58	34,000	4,717
97% Pyrazosulfuron-ethyl technical	300,000	42,258.28	300,000	41,620





80% Quinclorac technical	147,100	20,720.64	147,100	20,408
95% Quizalofop-P-ethyl technical	235,000	33,102.32	235,000	32,602
95% Tribenuron-methyl technical	145,000	20,424.84	145,000	20,116
95% Trifluralin technical	38,000	5,352.72	38,000	5,272

Note: Ex-works price includes VAT.

Source: CCM

Shanghai port prices of main herbicides in China, 8 Nov., 2022





TABLE 16: Shanghai port prices of main herbicides in China, 8 Nov., 2022

Product	20221008		20221108	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
96% 2,4-D technical	24,500	3,451.09	24,500	3,399
92% Acetochlor technical	40,000	5,634.44	40,000	5,549
97% Atrazine technical	36,500	5,141.42	36,500	5,064
96% Bensulfuron-methyl technical	200,500	28,242.62	200,500	27,816
92% Butachlor technical	27,000	3,803.25	27,000	3,746
95% Clomazone technical	118,500	16,692.02	118,500	16,440
95% Cyhalofop-butyl technical	188,500	26,552.29	188,500	26,151
97% Diuron technical	47,500	6,690.89	46,500	6,451
98% Fenclorim technical	140,500	19,790.96	130,500	18,105
95% Fenoxaprop-P-ethyl technical	182,500	25,707.12	182,500	25,319
96% Fluroxypyr technical	174,500	24,580.23	172,500	23,931
95% Fomesafen technical	139,500	19,650.1	139,500	19,353
95% Glufosinate ammonium technical	222,600	31,355.65	199,400	27,663
95% Glyphosate technical	59,500	8,381.23	54,800	7,603
95% Haloxyfop-P-methyl technical	222,500	31,341.56	220,500	30,591
97% Metolachlor technical	55,500	7,817.78	58,500	8,116
95% Metsulfuron-methyl technical	135,500	19,086.66	135,500	18,798
95% Nicosulfuron technical	265,500	37,398.58	265,500	36,834
97% Oxyfluorfen technical	227,500	32,045.86	225,500	31,284
95% Pendimethalin technical	64,000	9,015.1	64,000	8,879
95% Pretilachlor technical	39,500	5,564.01	34,500	4,786
97% Pyrazosulfuron-ethyl technical	300,500	42,328.71	300,500	41,689





80% Quinclorac technical	147,600	20,791.08	147,600	20,477
95% Quizalofop-P-ethyl technical	235,500	33,172.75	235,500	32,672
95% Tribenuron-methyl technical	145,500	20,495.27	145,500	20,186
95% Trifluralin technical	38,500	5,423.15	38,500	5,341

*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 Nov., 2022





TABLE 17: FOB Shanghai prices of main herbicides in China, 8 Nov., 2022, USD/t

Product	20221008	20221108
96% 2,4-D technical	3,436.93	3,385
92% Acetochlor technical	5,560.18	5,476
97% Atrazine technical	4,906.17	4,832
96% Bensulfuron-methyl technical	27,546.12	27,130
92% Butachlor technical	3,779.39	3,722
95% Clomazone technical	16,313.43	16,067
95% Cyhalofop-butyl technical	24,990.7	24,613
97% Diuron technical	6,587.56	6,353
98% Fenclorim technical	19,327.08	17,686
95% Fenoxaprop-P-ethyl technical	25,080.41	24,701
96% Fluroxypyr technical	23,984.53	23,352
95% Fomesafen technical	19,190.09	18,900
95% Glufosinate ammonium technical	29,496.51	26,032
95% Glyphosate technical	8,958.76	8,132
95% Haloxyfop-P-methyl technical	30,559.77	29,828
97% Metolachlor technical	7,683.43	7,972
95% Metsulfuron-methyl technical	18,642.16	18,361
95% Nicosulfuron technical	36,450.08	35,899
97% Oxyfluorfen technical	30,143.97	29,428
Paraquat 42% TK	3,779.39	3,722
95% Pendimethalin technical	8,847.8	8,714
95% Pretilachlor technical	5,491.69	4,734
97% Pyrazosulfuron-ethyl technical	41,244.52	40,621





80% Quinclorac technical	20,299.66	19,993
95% Quizalofop-P-ethyl technical	32,340.56	31,852
95% Tribenuron-methyl technical	20,012	19,710
95% Trifluralin technical	5,170.44	5,092

Note: FOB Shanghai price considers factors of Shanghai port price, port sur-charges, loading charges, traders' profits and export tax refund. And the shipment cost shall be paid by the buyer. This FOB price is the average of quotations offered by enterprises and it may be lower than the one reported in customs data which is the actual purchase price.

Source: CCM



Correction

Concerning Herbicides China Monthly Report 202210, the article Acephate TC market remains gloomy in Oct. was aromatically and mistakenly added into the monthly report by our system. Acephate is an insecticide, which should not be included in the Herbicides China Monthly Report, so hereby we sincerely apologise for this error.



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