

Acidity Regulator Quarterly China Report

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Contents

Headline 1

Editor's Note 2

Market Analysis 3

 Industrial standard for citrate anhydrous drafted for comments 3

 Details of Golden Far East's and Tiger Biotech's LA projects publicised 4

Company Dynamics 7

 RZBC Boyuan proposes two projects 7

 BBCA Biochemical moving forward with two SG projects 8

Price Update 10

 Ex-works prices of acidity regulators in China, Q2 2022 10

 Climbing citric acid price from the already high level in Q2 10

Import and Export 13

 Exports of acidity regulators and raw materials in China, Q1 2022 13

News in Brief 15

 Jilin Union's energy conservation report on 150,000 t/a citric acid project approved 15

 Jiangxi Keyuan obtains approval for 200,000 t/a LA and 130,000 t/a PLA project's EIA document 15

 Bengbu Xinghe gains approval for 15,000 t/a sugar from straw project 16

 Jindan Technology achieves revenue and profit in Q1 with YoY growths 16

 Tongliao Zhongyuan to enlarge SG production scale 17





Headline

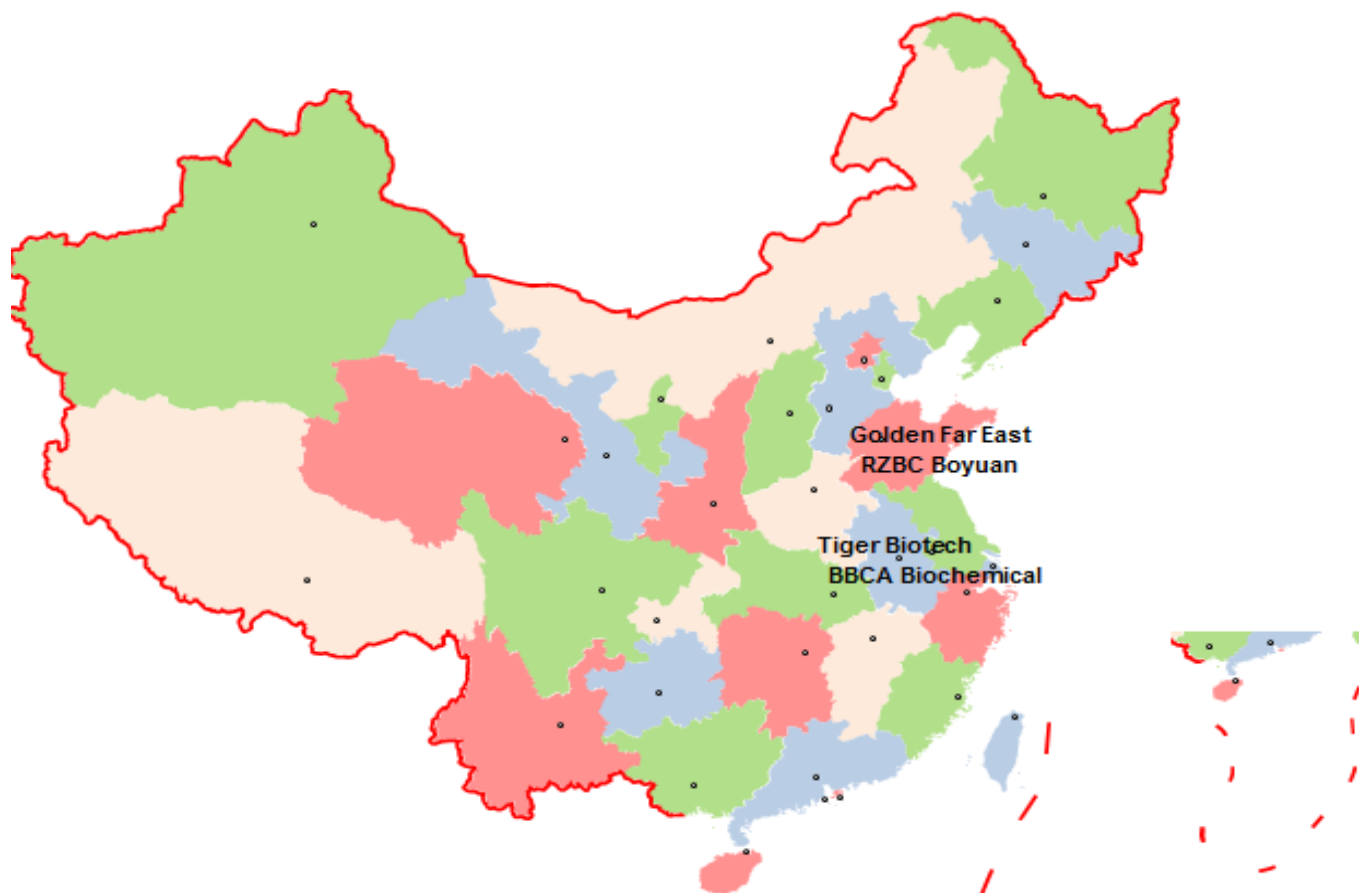
On 21 June, China Biotech Fermentation Industry Association (CBFIA) made public the Industrial Standard for Citrate Anhydrous (Exposure Draft).

In Q2, the EIAs of Golden Far East's 100,000 t/a lactide / PLA and 200,000 t/a LA project and Tiger Biotech's 25,000 t/a recycled LA project were posted.

On 19 May, the EIA report of 1,000 t/a potassium citrate and sodium citrate (for IMF use) technology transformation project of RZBC Boyuan was approved.

In Q2 2022, the EIA reports of BBCA Biochemical's two projects with SG capacity totalling 60,000 t/a were publicised.

In Q2, the citric acid price continued going up from the already high level, despite by a smaller margin. The monthly average prices of monohydrate citric acid and anhydrous citric acid were USD2,299/t and USD2,467/t respectively, from which the profitability has remained high.





Editor's Note

Welcome to Acidity Regulator Quarterly China Report-Q2 2022.

Lactic acid (LA) industry:

The EIA of Golden Far East's 100,000 t/a lactide / PLA and 200,000 t/a LA project and the EIA statement (resubmission) of Tiger Biotech's 25,000 t/a recycled LA project were publicised.

Citric acid industry:

CBFIA made public the Industrial Standard for Citrate Anhydrous (Exposure Draft).

The EIA documents of 1,000 t/a potassium citrate and sodium citrate (for IMF use) project of RZBC Boyuan were approved by local government.

Sodium gluconate (SG) industry:

The EIA reports of BBKA Biochemical's 50,000 t/a SG project and another project of 10,000 t/a SG and 20,000 t/a L-alanine were released to the public.

In Q2 2022, the prices of citric acids remained high, the quarterly average ex-works prices of monohydrate citric acid and anhydrous citric acid were USD2,299/t (RMB15,373/t) and USD2,467 t/a (RMB16,498 t/a), respectively.

The USD/CNY exchange rate in this period is 6.6863, sourced from the People's Bank of China on 1 July, 2022. Except for special instructions, all prices involved in this period include VAT.





Market Analysis

Industrial standard for citrate anhydrous drafted for comments

Summary: On 21 June, China Biotech Fermentation Industry Association (CBFIA) made public the *Industrial Standard for Citrate Anhydrous (Exposure Draft)*.

On 21 June, the China Biotech Fermentation Industry Association (CBFIA) released the *Industrial Standard for Citrate Anhydrous (Exposure Draft)* for peer review.

Key takeaway:

- Leading drafting organisation: China Biotech Fermentation Industry Association and Dazzles Biological Group
- Application scope & content: This standard is applicable to the production, inspection and sale of citrate anhydrous and encompasses requirements for production techniques, testing and inspection methods attached with detailed examples, label and package, transport and storage of citrate anhydrous including sodium citrate anhydrous, tripotassium citrate anhydrous, monosodium citrate anhydrous.
- Background: At present, the China's *National Standard for Monosodium Citrate Anhydrous* lags behind the development of the industry and there are no implementing national standards or industry standards for sodium citrate anhydrous and tripotassium citrate anhydrous.
- General goal: The push of this standard helps promote the technological development and exchanges across industries and speed up the innovation of leading technologies in the citrate anhydrous industry, and guides the citrate anhydrous producers in continuously improving their product quality, which will facilitate the development of the citrate anhydrous industry in China as a whole.
- Specific targets: to standardise the ways of enterprises in spreading the industrial knowledge and reserving their technologies and to lay a solid foundation for the future economic growth, and optimisation and upgrade of the citrate anhydrous industry at home.



TABLE 1: Indicators stipulated in the Industry Standard for Citrate Anhydrous

Item	Physicochemical indicator		
	Sodium citrate anhydrous	Tripotassium citrate anhydrous	Monosodium citrate anhydrous
Content (dry basis), %	99.0–100.5	99.0–100.5	99.0–101.0
Light transmittance, %	≥95	≥95	≥95
Acidity and alkalinity	Pass test	Pass test	/
Chloride (in the form of Cl), %	≤0.005	≤0.005	≤0.005
Sulfate (in the form of SO ₄), %	≤0.01	≤0.01	≤0.01
Ferric salt (in the form of Fe), mg/kg	≤5	≤5	/
Loss on drying, %	≤1	≤1	≤0.4
Oxalate (in the form of C ₂ O ₄), %	≤0.01	≤0.01	≤0.01
Calcium salt (in the form of Ca), %	≤0.02	≤0.02	/
Readily carbonisable substance	≤1	≤1	/
pH (10% aqueous solution)	/	/	3.4–3.8
Lead (in the form of Pb), mg/kg	≤2	≤2	≤2
Total arsenic content (in the form of As), mg/kg	≤1	≤1	≤1

Source:CBFIA

In addition, earlier on 17 May, the Fermentation Technical Committee of the National Food Industry Standardization Technical Committee of China posted *the Notice No.5 (2022) of Organising the Drafting Work Groups of Voluntary National Standard and the Foreign Language Versions of the Quality Requirements for organic acids (Part 1): Citric Acid*. China National Research Institute of Food & Fermentation Industries Co., Ltd. was appointed to organise the drafting work and recruit members of standard drafting unit according to the notice.

Details of Golden Far East's and Tiger Biotech's LA projects publicised

Summary: In Q2, the EIAs of Golden Far East's 100,000 t/a lactide / PLA and 200,000 t/a LA project and Tiger Biotech's 25,000 t/a recycled LA project were posted.

On 30 May, the environment impact assessment (EIA) of Shouguang Golden Far East Modified Starch Co., Ltd. (Golden Far East)'s 100,000 t/a lactide / polylactic acid (PLA) and 200,000 t/a lactic acid (LA) project was posted on the official website of Shouguang Municipal Government of Shandong Province for public review and comments.

**Overview of the 100,000 t/a lactide / PLA and 200,000 t/a LA project**

- Construction type: Expansion
- Location: Shouguang City, Weifang City, Shandong Province
- Total investment: USD224.34 million (RMB1.5 billion), USD0.30 million (RMB2 million) of which are for environmental protection
- Working system: 110 currently employed personnel working three 8-hour shifts for 330 days per year
- Construction period: 24 months
- Construction content:
 - New structure: three workshops, one warehouse, one utility facility leveraging the existing workshop;
 - New equipment: 1,068 sets of production equipment, such as fermentation tank, ceramic membrane device, LA evaporator, molecular distillation machine, and reaction kettle;
 - All these form the capacities of 100,000 t/a lactide / PLA and 200,000 t/a LA.
- Process route:
 1. Produce 34% glucose solution from liquefaction and saccharification of starch emulsion;
 2. Produce 80% LA from 34% glucose solution;
 3. Produce 100% LA from molecular distillation of 80% LA and synthesise lactide and PLA.

TABLE 2: Key products of the 100,000 t/a lactide / PLA and 200,000 t/a LA project

No.	Product	Production, t/a	Standard	Note
1	80% LA	75,009	<i>Food Additive—Lactic Acid (GB 2023-2003)</i>	For sale
2	80% LA (low grade)	4,012		By-product, for sale
3	100% LA	140,000	<i>Food Additive—Lactic Acid (GB 1886.173-2016)</i>	For sale and for self-production of lactide
4	Lactide	100,000	<i>Lactide (Q/370783JYM010-2020)</i>	For sale and for self-production of PLA
5	PLA	100,000	<i>Poly (lactic acid) (GB/T 29284-2012)</i>	For sale

Source:Golden Far East

Golden Far East was established in Dec. 2004 and is owned by Shandong Shouguang Juneng Golden Corn Co., Ltd. Currently, the company is building the 5,000 t/a lactide / PLA and 20,000 t/a LA project at the same plant.

On 2 June, the Ecology and Environment Bureau of Guzhen County of Anhui Province accepted and disclosed Anhui Tiger Biotech Co., Ltd. (Tiger Biotech)'s resubmitted statement on environment impact of the 25,000 t/a recycled LA project, whose EIA report was accepted in June 2020 and approved in Sept. of the same year. This two-phased project has completed the 1st phase construction (12,500 t/a of LA) in July 2020 and has it running trail production for the time being. The final acceptance check has yet been conducted.

In the actual production, Tiger Biotech found that the product LA's concentration of around 75% and optical purity of 85% failed to meet the expecting levels of 95% and 99% required by the recipient Anhui BBKA Biochemical & Futerro Lactic Acid Co., Ltd. for the PLA synthesis. In this context, Tiger Biotech proposed new add-on to the project scheme. That is to introduce a new set of evaporation and





concentration device to boost the LA condensation up to 95%—though it will not change the optical purity level—and to start to sell the product as food additive once its production meets the national standard of *Food Additive—Lactic Acid (GB 1886.173-2016)*.

Overview of the 25,000 t/a recycled LA project

- Construction nature: Expansion
- Location: Tiger Biotech's plant located in Guzhen County, Bengbu City, Anhui Province
- Total investment: USD4.49 million (RMB30 million), USD0.38 million (RMB2.51 million) of which are for environmental protection
- Product scheme: 25,000 t/a LA over two phases (12,500 t/a for each)
- Raw material and supplies:
 - LAC as starting material, composed of 32% LA and 51% LA oligomers and 17% others;
 - The 1st phase production will source from the 70,000 t/a PLA and 30,000 t/a PLA fibre project of Anhui BBCA Biochemical & Futero PLA Co., Ltd. and the 1 million t/a PLA project of Anhui BBCA Biochemistry Co., Ltd.;
 - The 2nd phase production will source from the currently planning project of Anhui BBCA Biochemistry Co., Ltd.
- Working system: 18 new employees (to be introduced in the 1st phase) and currently employed personnel working three 12-hour shifts totalling 7,200 hours per year

Tiger Biotech was set up in 2002 and has a calcium pantothenate capacity of 6,000 t/a. China BBCA Group Corporation owns about 66.13% stake in Tiger Biotech.





Company Dynamics

RZBC Boyuan proposes two projects

Summary: On 19 May, the EIA report of 1,000 t/a potassium citrate and sodium citrate (for IMF use) technology transformation project of RZBC Boyuan was approved.

On 19 May, the Administrative Examination and Approval Bureau of Ju County approved and publicised the environmental impact assessment (EIA) document of the 1,000 t/a potassium citrate and sodium citrate (for infant milk formula or IMF use) technology transformation project of RZBC (Boyuan) Biochemical Co., Ltd. (RZBC Boyuan) on the local government's official website. Prior to that, the project's EIA statement was first disclosed by the authority on 12 Jan. and then on 26 April, 2022.

Basic background

RZBC Boyuan has production lines of food-grade potassium citrate and sodium citrate produced with potassium hydroxide or sodium hydroxide as raw materials that are purchased from the market—but the content levels of perchlorate and chlorate in these two materials are higher than the corresponding EU standards for IMF. Therefore, the company proposed to transform and upgrade the current processes for a high-quality production of potassium citrate and sodium citrate with lower contents of perchlorate and chlorate, applicable for IMF use. The project is expected to expand company's product portfolio and sales distribution.

Overview of 1,000 t/a potassium and sodium citrates (for IMF use) technology transformation project

- Construction nature: Technology transformation
- Location: the operational factories of RZBC Boyuan in Juxian County, Rizhao City, Shandong Province
- Floor area: 280 m²
- Total investment USD1.33 million (RMB8.5 million)
- Construction content: Separation processes and production equipment to separate perchlorate, chlorate, heavy metals from raw materials (potassium hydroxide or sodium hydroxide) along with auxiliary equipment for pure-water preparation, etc., are to be introduced to the operational production lines.
- Production process: add sodium hydroxide or potassium hydroxide in citric acid purified liquid to produce sodium citrate for IMF use (500 t/a) and potassium citrate for IMF use (500 t/a)

Working system: rearrange the currently employed staff to work for 330 day per year

Construction period: 2 months



**TABLE 3:** Product scheme of 1,000 t/a potassium and sodium citrates (for IMF use) technology transformation project

No.	Product	Capacity, t/a	
		Before	After
1	Sodium citrate	80,000	79,500
2	Potassium citrate	20,000	19,500
3	Sodium citrate (raw material of IMF manufactured in Europe)	0	500
4	Potassium citrate (raw material of IMF manufactured in Europe)	0	500
	Total	100,000	100,000

Source: RZBC Boyuan

On top of that project, RZBC Boyuan also posted online the EIA information of its 200,000 t/a citric acid green and automatic manufacturing project for public review for the first time on 30 May.

Overview of the 200,000 t/a citric acid project

- Construction nature: Transformation and expansion
- Total investment (estimated): USD263.22 million (RMB1.76 billion)
- Location: the established plant area in Ju County, Rizhao City, Shandong Province
- Main construction content:
 - upgrade and transform the original production processes and equipment;
 - expand the original raw material crushing workshop;
 - build new fermentation workshop, extraction workshop of crude materials, ion-exchange workshop, refining workshop, workshop for environmental protection and other supporting facilities and equipment, such as 110 kV distribution substation
- Product and capacity: Citric acid—new capacity of 200,000 t/a

BBCA Biochemical moving forward with two SG projects

Summary: In Q2 2022, the EIA reports of BBCA Biochemical's two projects with SG capacity totalling 60,000 t/a were publicised.

On 29 April, the environmental impact assessment (EIA) report of BBCA Biochemical Co., Ltd. (BBCA Biochemical)'s technical renovation project of 50,000 t/a sodium gluconate (SG) was issued for soliciting public opinions; later on 6 July, the EIA report of the company's another project of 10,000 t/a SG and 20,000 t/a L-alanine was also released to the public.

BBCA Biochemical thought highly of SG's market potential in the next few years, saying that the demand in the concrete market would grow even stronger along with the rising domestic economy and exploiting these two projects helps meet the market demand and build a more holistic industrial chain.

Overview of the technical renovation project of 50,000 t/a SG





- Construction type: Technological upgrading and transformation
- Location: BBCA Biochemical's plant
- Total investment: USD0.3 million (RMB2.016 million)
- Production process:
 - Adopt double-enzymatic method to fermentation step using the established fermentation tank and supporting equipment of the lysine line;
 - Separate fermentation broth via filter press after using activated carbon; condense, separate and dry the clear liquor in the developed extraction section for lysine hydrochloride;
 - All processes, supported by new public and auxiliary utilities, are designed to form a 50,000 t/a capacity of SG.
- Source of production techniques: Self development
- Working system: The current employees are rescheduled for this project working in three eight-hour shifts for 330 days per year.
- Economic benefits: Once completed for construction, the project is expected to bring in USD33.65 million (RMB225 million) of sales revenue and USD1.54 million (RMB10.31 million) of total profit.

Overview of the technical renovation project of 10,000 t/a SG and 20,000 t/a L-alanine

- Construction type: Technological upgrading and transformation
- Location: BBCA Biochemical's plant
- Total investment: USD0.3 million (RMB2 million);
- Construction content: Technically transform the original 30,000 t/a L-alanine production line to a flexible one that can produce 10,000 t/a SG and 20,000 t/a L-alanine.
- Source of production techniques: Self development
- Working system: The current employees are rescheduled for this project working in three eight-hour shifts for 330 days per year.
- Economic benefits: Once completed for construction, the project is expected to bring USD4.52 million (RMB30.25 million) in sales revenue and USD0.37 million (RMB2.45 million) in total profit.

The raw material glucose for the two projects mentioned in this article will be supplied by China BBCA Group Corporation's affiliate which runs a 200,000 t/a starch sugar that plays out the value of raw material to embody the idea of circular economy and aligns with the requirements for clean production.

Founded in Oct. 2016, BBCA Biochemical is a subsidiary of China BBCA Group Corporation and has the capacities of 100,000 t/a lysine (36,000 t/a lysine hydrochloride and 64,000 t/a lysine sulphate) and 30,000 t/a alanine.



Price Update

Ex-works prices of acidity regulators in China, Q2 2022

TABLE 4: Monthly ex-works prices of selected acidity regulators in China, Apr.–Jun. 2022

Product	April		May		June	
	USD/t	RMB/t	USD/t	RMB/t	USD/t	RMB/t
Monohydrate citric acid	2,285	15,280	2,302	15,390	2,311	15,450
Anhydrous citric acid	2,456	16,420	2,470	16,513	2,477	16,560
Lactic acid	1,944	13,000	1,944	13,000	1,944	13,000
Crystalline sodium gluconate (Food grade)	703	4,700	695	4,650	692	4,625
Crystalline sodium gluconate (Industrial grade)	583	3,900	576	3,850	572	3,825
Phosphoric acid (Food grade)	1,795	12,000	1,869	12,500	1,848	12,355
L-Malic acid	3,141	21,000	3,141	21,000	3,141	21,000
DL-Malic acid	2,243	15,000	2,243	15,000	2,243	15,000
L-Tartaric acid	4,262	28,500	4,233	28,300	4,218	28,200
DL-Tartaric acid	2,311	15,450	2,258	15,100	2,228	14,900

Source:CCM

Climbing citric acid price from the already high level in Q2

Summary: In Q2, the citric acid price continued going up from the already high level, despite by a smaller margin. The monthly average prices of monohydrate citric acid and anhydrous citric acid were USD2,299/t and USD2,467/t respectively, from which the profitability has remained high.

Citric acids' average prices have been rising from the boosted points of last quarter, driven mainly by the increasing overseas demand along with the positive sentiment of the manufacturers.

Average ex-works prices of citric acid in Q2 2022:

- Monohydrate citric acid: USD2,299/t (RMB15,373/t), up 3.75% QoQ and 120.56% YoY;
- Anhydrous citric acid: USD2,467/t (RMB16,498/t), up 3.48% QoQ and 123.41% YoY

April

The citric acid market remained strong in April. The MoM increase of manufacturers' quotation prices amounted roughly to USD20/t



(RMB135/t).

On supply side, the domestic operation of citric acids stayed at relatively high rate; but the inventory of the upstream manufacturers turned heavier due to the restrictions on public traffic and logistics.

In terms of export, the citric acid sector was doing well over the period. The upstream manufacturers retained bullish sentiment toward the market, encouraged by strong overseas demand.

In cost term, the purchasing price of corn of citric acid firms based in Shandong Province averaged at USD453/t (RMB3,030/t) in April, up 1.2% MoM; the monthly average price of sulfuric acid referred to USD133/t (RMB887/t) in April, up 51.5% MoM. The April production cost of the citric acid industry increased around 4.7% MoM.

Profit-wise, this sector's profitability space was compacted in April with the monthly profit down 2% MoM to USD1,282/t or RMB8,570/t (by-products are included and calculated).

May

The average price kept heading upward in May. The MoM increase of manufacturers' quotation prices amounted roughly to USD16/t (RMB110/t).

On supply side, the domestic operation rate of citric acid manufacturers remained high. The shipment goods of orders settled in the earlier period arrived gradually benefited from the easing of logistics restrictions.

In terms of export, the well performing citric acid sector advanced with rising prices, plus the strong overseas demand and positive upstream manufacturers.

In cost term, the purchasing price of corn of citric acid firms based in Shandong Province averaged at USD447/t (RMB3,031/t) in May, nearly unchanged from last month; the monthly average price of sulfuric acid referred to USD143/t (RMB955/t) in May, up 7.7% MoM. The May production cost of the citric acid industry increased around 0.5% MoM.

Profit-wise, this sector's profitability improved in May with the monthly profit up 0.6% MoM to USD1,290/t or RMB8,625/t (by-products are included and calculated).

June

The manufacturers made slightest changes to their offerings to ensure the focus on producing and delivering by order in June. The MoM increase of manufacturers' quotation prices amounted roughly to USD9/t (RMB60/t).

On supply side, the June market marked sustained high domestic operation rate of citric acid manufacturers.



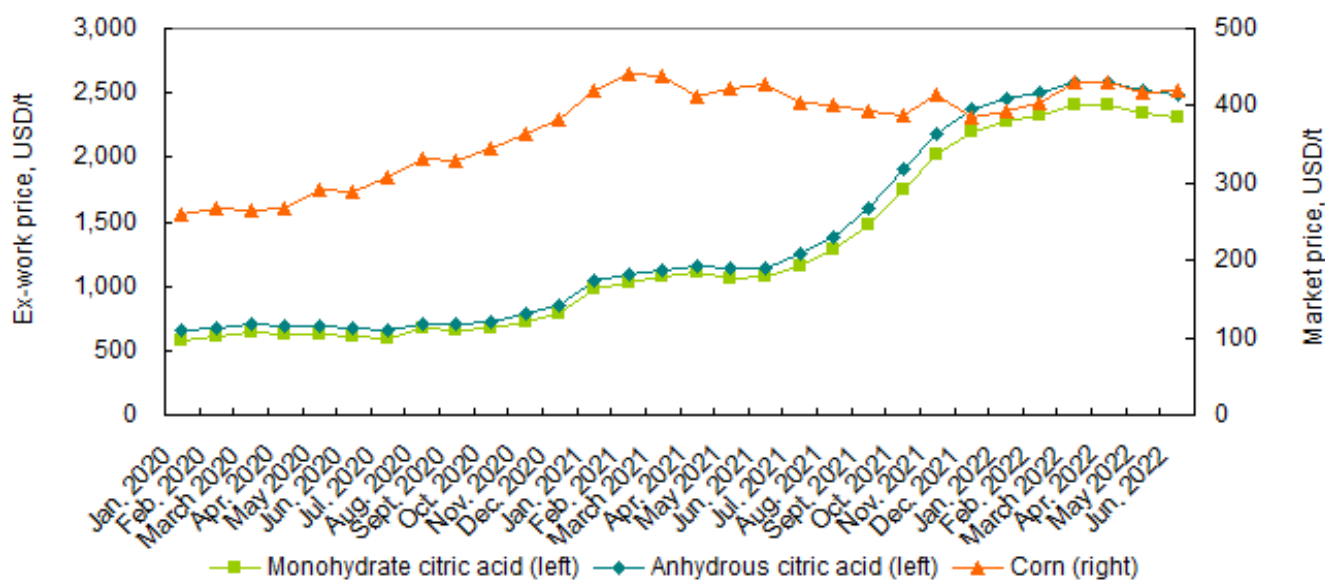


In terms of export, the citric acid sector in H1 continued performing in a desired state, which were spurred by strong overseas demand and optimism of the manufacturers.

In cost terms, raw material prices rose. The purchasing price of corn of citric acid firms based in Shandong Province averaged at USD459/t (RMB3,072/t) in June, up 1.5% MoM; the monthly average price of sulfuric acid referred to USD144/t (RMB960/t) in June, up 0.5% MoM. The June production cost of the citric acid industry increased around 1.0% MoM.

Profit-wise, this sector was still playing out fairly profitable scenario in June, though with the monthly profit down slightly by 0.5% MoM to USD1,284/t or RMB8,585/t (by-products are included and calculated).

FIGURE 1: Prices of citric acid products and corn in China, Jan. 2020–Jun. 2022



Source:CCM



Import and Export

Exports of acidity regulators and raw materials in China, Q1 2022

TABLE 5: Exports of acidity regulators and their raw materials (with independent HS codes) in China, Q1 2022

Product	Q1 2022		Q4 2021		QoQ change of volume	QoQ change of value
	Volume, tonne	Value, USD	Volume, tonne	Value, USD		
Citric acid	352,998	610,142,422	321,190	418,443,266	9.90%	45.81%
Lactic acid and its salts and esters	26,542	43,423,135	24,474	40,061,323	8.45%	8.39%
Tartaric acid	12,844	38,606,041	12,786	33,753,708	0.45%	14.38%
Tartrate and tartaric ester	460	1,701,735	598	1,941,973	-23.12%	-12.37%
Citrate and citric ester	75,387	138,788,736	68,241	98,603,332	10.47%	40.75%

Source:China Customs

TABLE 6: Top 3 export destinations of acidity regulators and their raw materials (with independent HS codes) in China, Q1 2022

Product	1		2		3		Others, tonne	Total, tonne
	Destination	Volume, tonne	Destination	Volume, tonne	Destination	Volume, tonne		
Citric acid	India	28,007	Russia	23,949	Mexico	18,018	283,025	352,998
Lactic acid and its salts and esters	Thailand	3,440	South Korea	2,347	Japan	2,177	18,578	26,542
Tartaric acid	India	2,366	Russia	2,186	The US	1,092	7,200	12,844
Tartrate and tartaric ester	South Korea	82	Taiwan of China	63	Thailand	60	255	460
Citrate and citric ester	The Netherlands	7,126	Germany	6,877	Canada	4,841	56,543	75,387

Source:China Customs

**TABLE 7:** Top 5 export European destinations of citric acid, citrate and citrate ester (with independent HS codes) in China, Q1 2022

Product	1		2		3		4		5	
	Destination	Volume, tonne	Destination	Volume, tonne	Destination	Volume, tonne	Destination	Volume, tonne	Destination	Volume, tonne
Citric acid	Russia	23,949	Poland	15,199	Germany	12,904	The Netherlands	12,593	Italy	9,491
Citrate and citric ester	The Netherlands	7,126	Germany	6,877	Belgium	4,443	Russia	4,279	Poland	3,606

Source: China Customs





News in Brief

Jilin Union's energy conservation report on 150,000 t/a citric acid project approved

On 18 May, the Development and Reform Commission of Jilin Province approved the Energy Conservation Report on the 150,000 t/a Innovative Green and Smart Citric Acid Project of Jilin Union Biotechnology Co., Ltd. (Jilin Union). Prior to that, the project's environment impact assessment (EIA) document was approved and made public by the Zhenlai County Branch of the Baicheng Municipal Ecological Environment Bureau on 25 Feb.

Key takeaways of the project's report:

- Integrated annual energy consumption: approx. 59,078 tonnes of standard coals, converted from 115.54 MW·h of electric power, 170,280 tonnes of steam (8.83 MPa), 263,472 tonnes of steam (0.7 MPa), 184 tonnes of diesel oil, and 8 tonnes of liquefied petroleum gas (LGP)
- Selection of equipment:
 - select products and equipment whose performance meets the national energy efficiency standard (level 1);
 - list the energy efficiency index in the equipment tender documents and procurement contracts as one of the key technical specifications
- Project's consumption: 255,000 t/a corn
- Project's capacity:
 - Main product: 150,000 t/a citric acid, 32,400 t/a sodium citrate
 - Sideline product: 63,000 t/a concentrated solution, 1,650 t/a crude corn oil, and 63,300 t/a protein feed

Jiangxi Keyuan obtains approval for 200,000 t/a LA and 130,000 t/a PLA project's EIA document

On 14 July, the Ecology and Environment Bureau of Jiujiang City approved the environmental impact assessment (EIA) document of the 200,000 t/a lactic acid (LA) and 130,000 t/a polylactic acid (PLA) project of Jiangxi Keyuan Bio-Material Co., Ltd. (Jiangxi Keyuan). Before that, the project's EIA had been publicised on the government website of Lianxi District of Jiujiang City for three times during Oct. 2021–Jun. 2022, and the EIA report was accepted and disclosed by the Ecology and Environment Bureau of Jiujiang City on 18 May, 2022.

Overview of the 200,000 t/a LA and 130,000 t/a PLA project

- Construction type: New construction
- Location: Chemical Fibre Industrial Base of Lianxi District, Jiujiang City, Jiangxi Province
- Total investment: USD446.03 million (RMB2.98 billion), 3.5% (USD15.59 million or RMB104.25 million) of which are for environmental protection
- Total designed capacity: 200,000 t/a LA, 130,000 t/a PLA (100,000 t/a high-gloss pure PLA + 30,000 t/a low-gloss pure PLA), and 200,000 t/a gypsum plaster
- Construction content and schedule over two phases:
 - Phase I:
 - Production and supporting equipment and facilities for 100,000 t/a of LA, 40,000 t/a of PLA (one 30,000 t/a high-gloss pure PLA production line + one 10,000 t/a low-gloss pure PLA line), and 100,000 t/a gypsum plaster;
 - This construction is expected to be completed and enter operation in Dec. 2023.
 - Phase II:





- Additional production and supporting equipment and facilities for 100,000 t/a LA and 10,000 t/a PLA (two 50,000 t/a high-gloss pure PLA lines), and 100,000 t/a gypsum plaster;
- Meanwhile, transforming the 30,000 t/a high-gloss pure PLA line formed in phase I to a 20,000 t/a low-gloss pure PLA line;
- This construction is expected to be completed and enter operation in Dec. 2025;

Bengbu Xinghe gains approval for 15,000 t/a sugar from straw project

On 28 June, the Guzhen branch of the Ecology and Environment Bureau approved and publicised the environment impact statement of Bengbu Xinghe Straw Biotechnology Co., Ltd. (Bengbu Xinghe)'s 15,000 t/a sugar from straw and comprehensive utilisation project.

Project overview:

- Construction nature: New construction
- Location: Guzhen County, Bengbu City, Anhui Province
- Area: 11,400 m²
- Total investment: USD19.44 million (RMB130.00 million), 1.18% (=USD0.23 million or RMB1.54 million) of which are for environmental protection
- Production process: With straw as the raw material, produce mixed sugar and highly efficient organic fertiliser after saccharification and enzymolysis.
- Designed capacity:
 - 6,000 t/a of mixed sugar (C5 & C6 sugars—non-straw sugars; with sugar content above 50%–60%; liquid), to be used by China BBKA Group Corp. as raw material in the initial stage of the straw-derived lactic acid (LA) and polylactic acid (PLA) production, including fermentation and polymerisation processes;
 - 9,000 t/a of highly efficient organic fertiliser (solid), applicable to the production of organic fertilisers as raw material

Bengbu Xinghe was founded in Nov. 2011, with a registered capital of USD1.50 million (RMB10 million).

Jindan Technology achieves revenue and profit in Q1 with YoY growths

On 26 April, Henan Jindan Lactic Acid Technology Co., Ltd. (Jindan Technology) unveiled its quarterly report for Q1 2022 detailing earnings results and the contributing factors.

Jindan Technology's revenue was down 11.14% QoQ in Q1 2022, due to:

- less deliverables during the Chinese Spring Festive period;
- impact of pandemic-induced logistical disruption in the quarter.

Net profit attributable to equity shareholders of the listed company surged 54.75% YoY, due to:

- surges in sales volumes and prices of lactic acid series products and by-products of corn compared with the records of the same period last year;
- prices of raw material corn in Q1 2022 remained much the same level as Q1 last year.



TABLE 8: Financial performance of Jindan Technology, Q1 2022

Item	Q1 2022	Q1 2021	YoY Change
Revenue, million USD	56.47	47.78	18.18%
Net profit attributable to equity shareholders of the listed company, million USD	6.46	4.17	54.75%
Net profit attributable to equity shareholders of the listed company excl. extraordinary gains/losses, million USD	6.01	3.80	58.01%
Net cash flows from operating activities, million USD	3.10	3.92	-20.84%

Source: Jindan Technology

Tongliao Zhongyuan to enlarge SG production scale

On 8 June, the environmental impact assessment (EIA) information of Tongliao Zhongyuan Biological Development Co., Ltd. (Tongliao Zhongyuan)'s technology upgrading and expansion project of starch sugar production line was publicised for public participation.

Project overview:

- Construction nature: Technological upgrading and expansion
- Location: Kailu County, Tongliao City, Inner Mongolia Autonomous Region
- Production capacity:
 - Currently, Tongliao Zhongyuan has production lines totalling 30,000 t/a sodium gluconate (SG), 40,000 t/a glucose syrup, 40,000 t/a high fructose corn syrup (HFCS) and 40,000 t/a maltose;
 - Upon completion of this project, the company's capacities of SG, glucose syrup and maltose will increase to 60,000 t/a, 72,000 t/a and 48,000 t/a, respectively.

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