Glyphosate China Monthly Report

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Contents

Editor Note

China's glyphosate industry has undergone the most dreadful market in 2011, and the glyphosate market this year seems stable—glyphosate output hasn't seen a significant growth and the price fluctuates in a small range. Some glyphosate technical manufacturers quit their glyphosate businesses due to the long-term depressed market. Though the total capacity decreased in 2011, the severe overcapacity hasn't vanished. It is predicted that the remaining China's glyphosate technical manufacturers couldn't enjoy favorable market in 2012, but the top glyphosate manufacturers are expected to turn from losses to profits.

Glyphosate technical with glycine route remains the most competitive in 2011, due to its comprehensive cost advantage and easy accessibility to raw materials. Since China is heightening environmental protection criterion, could glyphosate technical adopting glycine route maintain the cost advantage in the future?

Headlines

- Sinochem Corporation plans IPO, and it will become the largest listed company who owns pesticide business including glyphosate.
- Nantong Jiangshan launched its 20,000t/a amide herbicide production lines, abating its reliance on glyphosate business.
- Glyphosate technical adopting glycine route remains the most competitive in 2011.
- 450g/L glyphosate IPA is the most popular glyphosate formulation in Australia.
- China's glyphosate industry of 2011 is briefly reviewed.
- Glyphosate 10% SL to forbidden to be sold in China.
- Long-term depressed IDAN market disappoints IDAN investors.
- China has developed active carbon catalyzed PMIDA oxidation under microwave.
- Glyphosate price keeps stable in December 2011 and is still undervalued.
- Glyphosate export price increased in October 2011.

Main companies mentioned in this issue

■ Company Dynamics

Sinochem Corporation plans IPO

Sinochem Corporation plans to raise up to USD5.5 billion (RMB35 billion) via an initial public offering (IPO), and it will become the largest listed company who owns glyphosate business.

The news was disclosed from Sinochem Corporation's technical report of environmental protection approval check announced on the website of China Environmental Protection Ministry in early November 2011. The companies whose operations impact on the environment first need to obtain clearance from the environment ministry before seeking approvals from the securities regulator for IPOs.

According to the report, Sinochem Corporation plans to sell less than 26.5 billion new shares to raise USD4.0–5.5 billion (RMB20–35 billion) through the IPO, and the raised money will be used to fund a refinery project in Quanzhou City, Fujian Province.

Sinochem Corporation was established on 31 May, 2009 in preparation for a group listing on the domestic stock market. With registered capital of USD5.83 billion (RMB39.8 billion), 98% stake of the total 39.8 billion shares are held by Sinochem Group, and the remainder is held by China Ocean Shipping (Group) Co., Ltd.

Pesticide is one of the major businesses in Sinochem Corporation. Sinochem International Holding Co., Ltd., the largest shareholder of Nantong Jiangshan Agrochemical & Chemicals Co., Ltd., is a subsidiary of Sinochem Corporation. And Shenyang Chemical Research Institute Co., Ltd. which has the top pesticide R&D competence in China is a wholly-owned subsidiary of Sionchem Corporation. Meanwhile, Sinochem Corporation owns a number of international trade companies, which can help pesticide overseas sales.

The group listing could help Sinochem Corporation integrate its pesticide business. And the glyphosate business of its subsidiaries will be greatly benefited.

As to the global glyphosate market, Sinochem Corporation will become a key player by utilizing its integrated production chains and international sales network. Besides Nantong Jiangshan's glyphosate production, Sinochem International Holding Co., Ltd. is the top agent of Monsanto's Roundup® in China.

Moreover, Sinochem Corporation serves as an important glyphosate exporter in China. According to CCM International's analysis, the direct subsidiaries of Sinochem Corporation including Sinochem Shanghai Co., Ltd., Sinochem International Trade Stock Co., Ltd. and Sinochem International Holding Co., Ltd. have exported more than 9,100 tonnes of glyphosate A.I. (glyphosate acid) in the first ten months of 2011.

Nantong Jiangshan abates reliance on glyphosate business

On 25 November, 2011, Nantong Jiangshan Agrochemical & Chemicals Co., Ltd. (Nantong Jiangshan) held a ceremony for the launch of its 20,000t/a amide herbicides. It is expected that these amide herbicides greatly contribute to the company's profit, and the company's reliance on glyphosate business will decrease.

These amide herbicides including acetochlor and butachlor adopt the international advanced technology. With the advantages of high yield and low waste, the amide herbicide production lines could produce products with high grade. The technology used in Nantong Jiangshan's amide herbicide production lines is originally developed and patented by Monsanto. Nantong Jiangshan purchased this technology from its largest shareholder—Sinochem International Holding Co., Ltd. (Sinochem International) at the cost of USD9 million (RMB59.64 million) in 2008.

Sinochem International and Monsanto are strategic partners. In 2007, Sinochem International had purchased Monsanto's amide herbicide business in the Southeast Asian countries. Since Sinochem International is Nantong Jiangshan's largest shareholder, Nantong Jiangshan's amide herbicides with high grade could enjoy good sales channel. Some market analysts even predicted that Nantong Jiangshan will become a production base of Monsanto and Sinochem International's amide herbicides.

Glyphosate is Nantong Jiangshan's major business in the past three years and the company's financial performance highly relies on the performance of glyphosate business. According to its annual report of 2010, sales revenue from glyphosate business accounted for 84.94% of the company's pesticide business and 43.59% of the total revenue.

The depressed glyphosate market and undervalued glyphosate price had made Nantong Jiangshan suffer loss in operating profit in 2009 and 2010. The gross profit margin in glyphosate was the lowest one among all its businesses in recent three years.

After amide herbicide business has been enrolled in Nantong Jiangshan's pesticide business, Nantong Jiangshan's pesticides include glyphosate, dichlorvos, aectochlor, butachlor, etc. These amide herbicides in Nantong Jiangshan is predicted to achieve sales revenue of more than USD110 million (RMB700 million) in 2012. These products with high grade are expected to contribute greatly to the company's profit, and the adverse impact of the depressed glyphosate market on the company's whole performance will decrease.

Global Dynamics

Glyphosate registration in Australia

Glyphosate as active constituent

As of 20 December, 2011, 38 registrants have registered glyphosate as an active constituent in Australia, and two Chinese companies have been involved in it, including Jiangsu Good Harvest-Weien Agrochemical Co., Ltd. and Sanonda (Australia) Pty. Ltd.

Glyphosate single formulations

Glyphosate single formulations have been registered in different forms in Australia, and the glyphosate IPA salt is the most popular one, accounting for 74.37% of the total active glyphosate single formulations in Australia.

TABLE 1: Active registrations of single glyphosate formulations in Australia, as of 20 December, 2011

Glyphosate form in formulations	Registration number
Isopropylamine salt	264
Mono-ammonium salt	37
Potassium salt	28
Monoethanolamine salt	15
Isopropylamine and Mono-ammonium	5
Glyphosate-Trimesium	3
Potassium & Mono-ammonium Salt	2
Dimethylammonium Salt	1

Source: CCM International

TABLE 2: Active registrations of single glyphosate IPA formulation in Australia, as of 20 December, 2011

Glyphosate IPA content	Registration number	Share
450g/L	104	39.39%
360g/L	93	35.23%
510g/L	18	6.82%
7.2g/L	17	6.44%
100g/L	11	4.17%
490g/L	8	3.03%
500g/L	4	1.52%
540g/L	4	1.52%
470g/L	2	0.76%
3.6g/L	1	0.38%
480g/L	1	0.38%
50g/L	1	0.38%

Source: CCM International

TABLE 3: Active registration of glyphosate potassium salt in Australia, as of 20 December, 2011

Glyphosate Potassium content	Registration number
540g/L	12
450g/L	5
500g/L	2
517g/L	2
570g/L	2
495g/L	1
510g/L	1
535g/L	1
600g/L	1
625g/L	1

Source: CCM International

TABLE4: Active registrations of glyphosate mono-ammonium salt in Australia, as of 20 December, 2011

Glyphosate Mono-ammonium content	Registration number
70%	19
68%	11
84%	2
69%	2
87.5%	1
99%	1
7.2g/L	1

Source: CCM International

TABLE 5: Active registration of glyphosate monoethanolamine salt in Australia, as of 20 December, 2011

Glyphosate Monoethanolamine	Registration
450g/L	8
510g/L	5
360g/L	2

Source: CCM International

Mixed glyphosate formulations

There have been only eight registrations of glyphosate mixed formulations in Australia as of 20 December, 2011.

TABLE 6: Active registrations of mixed glyphosate formulations in Australia, as of 20 December, 2011

Product No.	Product Name	Content	Registrant
53539	Touchdown B-Power Herbicide	22.5% glyphosate IPA+0.5% Butafenacil	Syngenta Crop Protection Pty Limited
55756	Arsenal Xpress Herbicide	15% Imazapyr IPA + 15% glyphosate IPA	Basf Australia Ltd.
55765	Nufarm Illico Non-Selective Herbicide	143g/L Ammonium thiocyanate+ 60g/L glyphosate IPA+ 160g/L AMITROLE	Nufarm Australia Limited
58867	Nufarm Arsenal Xpress Herbicide	15% Imazapyr IPA + 15% glyphosate IPA	Nufarm Australia Limited
60737	Fast Action Roundup Ready To Use Weedkiller	20.5g/L Nonanoic Acid +15.2g/L glyphosate IPA	Monsanto Australia Ltd.
63810	Broadway Herbicide	7.2g/L Carfentrazone-ethyl +432g/L glyphosate IPA	Fmc Australasia Pty. Ltd.
47017	Trounce Brush-Pack Herbicide By Monsanto	83.5% glyphosate mono-ammonium+1% Metsulfuron-methyl	Monsanto Australia Ltd.
50542	Heiniger Bantox DF Driveway & Path Weed Killer	22.5% Glyphosate ammonium+45% Simazine	Heiniger Home & Garden Care Pty. Ltd.

Source: CCM International, Australian Pesticides and Veterinary Medicines Authority

Market Analysis

Competitiveness of China's different glyphosate routes in 2011

The year of 2011 is the hardest one for China's glyphosate industry, and the three glyphosate routes, namely glycine route, IDAN route and DEA route, have represented different competitiveness. Generally speaking, glycine route has the strongest competitiveness and DEA route has the weakest one.

As predicted by CCM International and many other professionals in the past, glycine route has the strongest competitiveness in the short term because of the best accessibility to raw materials and the lowest cost in China.

According to CCM International's investigation, more than 60% of active glyphosate technical capacity in 2011 adopts glycine route. Since the majority of top glyphosate technical manufacturers such as Zhejiang Wynca Chemical Industry Group Co., Ltd., Sichuan Fuhua Tongda Agro-chemical Technology Co., Ltd. and Zhejiang Jinfanda Biochemical Co., Ltd. adopt glycine route, the operating rate in glycine route is relatively higher than those in the other two routes.

The cost of glycine route is the lowest one because the sales or self-use of by-product—chloromethane could offset part of glyphosate production cost. The recovery of chloromethane could save cost of USD190 (RMB1,200) per tonne of glyphosate technical.

DEA route is the weakest one because the comprehensive cost of DEA route is higher than that of IDAN route. IDAN and DEA, both called IDA route, could be exchanged easily by small modification (IDAN route only need to add a set of equipment from DEA route), and many IDA route glyphosate technical manufacturers shift their routes to the lower one according to the market price of IDAN and DEA. Because China's DEA mainly depends on import but domestic IDAN is sufficient and the price is relatively low (IDAN price is lower than its normal value in 2011 because of IDAN's severe overcapacity and complete dependence on glyphosate consumption), most glyphosate technical manufacturers choose IDAN route due to its stable supply in domestic market.

It's hard to give an exact statistical data of the total output of DEA route at present, and it's estimated that the proportion of IDAN route glyphosate is less than 15% in 2011.

Review of China's glyphosate industry in 2011

Production

2011 is the most dreadful year for China's glyphosate industry, as the whole industry and almost all producers suffered profit loss, as the global demand for glyphosate has no significant growth and Chinese glyphosate industry still faces severe overcapacity.

Glyphosate production is concentrated in old and top glyphosate manufacturers located in Jiangsu Province, Zhejiang Province and Anhui Province.

The long-term (nearly three years) dreadful glyphosate market with undervalued price and stagnant demand has forced more and more small and medium-sized glyphosate manufacturers to give up glyphosate business, and these manufacturers who keep their glyphosate production lines also shift their focuses to other products. For example, Anhui Shunong Agrochemicals Co., Ltd. (Anhui Shunong), once a well-known glyphosate technical producer with capacity of 5,000t/a in Anhui Province, was sold to a real estate company in September 2011.

According to a survey conducted by CCM International in mid-October 2011, more than 20 companies in China have laid aside or dismantled their glyphosate technical production lines, and the total production capacity of glyphosate technical is about 700,000t/a at present, compared with that of about 1,000,000t/a in early 2009 and average 830,000t/a in 2010.

According to CCM International's tracing, about 12-13 glyphosate technical manufacturers have been under normal production in 2011. The average operating rate of glyphosate technical is less than 50% in 2011. Except Zhejiang Wynca, the top glyphosate technical manufacturer in China who could maintain the operating rate of over 85% in the past few years, other listed glyphosate technical manufacturers are operating under low operating rate.

The low operating rate has resulted in the low gross profit margin of glyphosate industry, and almost all technical manufacturers, including listed manufacturers of Zhejiang Wynca, Nantong Jiangshan and Anhui Huaxing, suffered profit loss in glyphosate business this year.

Consumption

Since China has announced the ban of glyphosate 10% SL in early 2009, most domestic manufacturers have exerted much effort on the promotion of high content formulations in 2010 and 2011. Glyphosate 41% IPA which has dominant superiority over other specifications has become the most popular formulation and it is estimated to take up over 70% of the total market in China in 2011.

China's glyphosate A.I. consumption is estimated at over 45,000 tonnes in 2011.

Export

Though the global economy has recovered from the global financial crisis occurred in 2008, China's glyphosate export volume in 2011 has not seen a significant growth compared with that in 2010 and 2009. In the first ten months of 2011, China has exported about 243,000 tonnes of glyphosate A.I.(glyphosate acid), up 1.25% over the corresponding period of last year. However, it's a good news that the proportion of exported formulation among all glyphosate products (PMIDA, glyphosate technical and formulation) has enjoyed a significant increase in 2011, up from 20.69% to 31.48% in terms of A.I. volume.

Price

Because of severe overcapacity and intensive international market competition (low pricing strategy in Monsanto), Chinese glyphosate price has remained undervalued in 2011.

The average price of glyphosate technical in 2011 is USD3,639/t (RMB23,000/t), increasing by 5.22% over 2010, the main reasons for price increase are the increasing raw material cost and the ban of the export tax rebate on glyphosate technical from July 2010.

Glyphosate technical price faces an U-turn in 2011. From February to August, glyphosate technical faced a downtrend to the lowest point of USD3,400t/a (RMB22,000t/a), and then enjoyed an uptrend to the highest point of USD3,863/t (RMB24,500/t) in November and December 2011.

Glyphosate 10% SL to withdraw the market in 2012

Since the Chinese government has announced the forbidden registration of glyphosate 10% SL from 2010, the life of glyphosate 10% SL has been drawn to an end. From 1 January, 2012, glyphosate 10% SL can't be sold and all forms of glyphosate 10% SL will be considered as illegal products.

Glyphosate 10% SL had been the most popular herbicide in China and dominated over 70% of the domestic glyphosate market before 2009. According to the registration data from ICAMA, China had more than 250 registrations of glyphosate 10% SL before 2009. The output of glyphosate 10% SL was estimated to be over 600,000 tonnes and the consumption volume was 400,000 tonnes in China in 2008. Chinese producers usually sell 10% SL in local markets that is close to their production sites to reduce high transportation cost.

Two main reasons have contributed to the popularity of glyphosate 10% SL in the past, the first and the most important one is that glyphosate 10% SL could be produced from glyphosate mother liquid, so glyphosate technical manufacturers could escape from treating glyphosate mother liquid, which required high technology and much cost. The second one is that glyphosate 10% SL is the earliest specification which had been introduced to the market by domestic producers in the 1980s, and Chinese farmers are familiar with this easy-to-use formulation.

However, glyphosate 10% SL produced

from glyphosate mother liquid is harmful to the environment, as it contains some untreated constituents such as formaldehyde and heavy metal. And this is the key reason why the Chinese government decided to ban the registration and use of glyphosate 10% SL in February 2009.

In 2010 and 2011, China has banned the registration 10% SL, so the production of glyphosate 10% is forbidden. Some top glyphosate technical manufacturers have invested much money in glyphosate mother liquid treatment, so they have to stop glyphosate 10% SL production in 2010. However, according to CCM International's investigation, some producers still produced 10% SL from the mother liquid in 2010 or even in 2011. Investigations have shown that glyphosate 10% SL remained well-sold in China in 2010 and 2011.

Investigations have also shown that most active glyphosate technical manufacturers don't have stocks of glyphosate 10% SL at present, and pesticide dealers or retailers are very prudent to stock glyphosate 10% SL in 2011.

Doubtlessly, there are some stocks of glyphosate 10% SL in the market, and part of these products will be illegally used in 2012. A market insider said that the policy implementation of 10% SL in 2012 will not very strict and the final death (no use) of glyphosate 10% SL will be extended to 2013.

■ Raw Material

IDAN market disappoints investors

On 21 November, 2011, Anhui Huaxing Chemical Industry Co., Ltd. (Anhui Huaxing) deregistered its wholly-owned subsidiary—Anhui Huaxing Chemical Chongqing Co., Ltd. which was established in February 2007 and had planned for 50,000t/a IDAN production lines.

Anhui Huaxing, who has run 27,000t/a glyphosate technical production lines with IDA route, had planned to extend its glyphosate industry chain with self-supply of IDAN, the key raw material. Thus, it established Anhui Huaxing Chemical Chongqing Co., Ltd. in Changshou District of Chongqing City where is rich in natural gas, the raw material of IDAN.

Anhui Huaxing's action has represented an IDAN pursuer's final choice. The long-term dreadful glyphosate market has disencouraged many IDAN pursuers' market confidence, and many planned IDAN production lines have suspended or ceased construction.

According to CCM International's investigation, at least six companies have ceased IDAN plan or construction.

These active production lines face profit loss, resulted from the stagnant downstream demand and low operating rate. Five companies maintain their production capacity of IDAN production lines, with total capacity of 260,000t/a in 2011. Thereinto, merely three IDAN manufacturers (including their subsidiaries) are operating currently, namely Chongqing Unisplendour Chemical Co., Ltd., Sichuan Chemical Academy of Natural Gas and Hebei Chengxin Co., Ltd. The average operating rate of IDAN in China is only about 30% at present.

China's IDAN industry is bound to glyphosate market. In the early 2000s, glyphosate once enjoyed a promising prospect in the world because of the high growth expectation of GM crops, which boosted its upstream industries in China. China has adopted IDAN route as a key way for glyphosate production since 2006. In June 2008, glyphosate price skyrocketed to the top of USD13,600/a from USD4,100/t in 2007, and IDAN price also jumped to the top of 4,725/t in June 2008 from USD1,600/t in 2007.

High profit margin drove many Chinese companies positively to join in the rank of IDAN production during H1 2007 to H1 2008. But the global economic recession has caused the plummet of glyphosate price in H2 2008 and slowed

TABLE 7: Suspended construction lines in China, 2011

Company	Location of production base	Stop/Suspend time	Designed capacity, t/a
Anhui Huaxing Chemical Industry Co., Ltd.	Chongqing	2009	50,000
Chongqing Wanlilai Chemical Co., Ltd.	Chongqing	2009	60,000
Chongqing Yihua Chemical Co., Ltd.	Chongqing	Early 2009	80,000
Hebei Sanchuan Chemical Company	Hebei	Early 2009	30,000
Shanghai CAC Chemical Co., Ltd.	Suining City, Sichuan	Early 2009	100,000
Xinjiang Tianshan Environmental Kuche Dimethyl Ether Co., Ltd.	Xinjiang	Late 2008	20,000
Total	/	/	**340,000**

Source: CCM International

TABLE 8: Launched IDAN production lines in China, 2011

Company	Capacity in 2011, t/a	Output in 2010, tonne
Chongqing Unisplendour Chemical Co., Ltd.	140,000	69,500
Guang'an Chengxin Chemical Co., Ltd.	50,000	800
Hebei Chengxin Co., Ltd.	5,000	1,000
Sichuan Chemical Academy of Natural Gas	5,000	3,000
Sichuan Hepu Chemical Co., Ltd.	40,000	500
Sichuan Lantian Chemical Technology Co., Ltd.	20,000	200
Total	260,000	75,000

Source: CCM International

down the global demand for glyphosate. Therefore, IDAN price has also plummeted and hovered at a low level for over two years. Many companies cancelled their IDAN projects, but some companies insisted on IDAN expansion for their incorrect market prospect, resulting in the severe overcapacity in China.

Glyphosate is almost the only one downstream product for IDAN at present, which is the reason why IDAN price is still highly tied with glyphosate price. Theoretically, there are many IDAN downstream products in other fields, but owing to limited market expansion for downstream products, IDAN applications in other areas are narrow currently. Some experts suggest that the key solution to cope with the overcapacity of IDAN and its high dependence on glyphosate market is to develop IDAN's applications in other downstream products or industries.

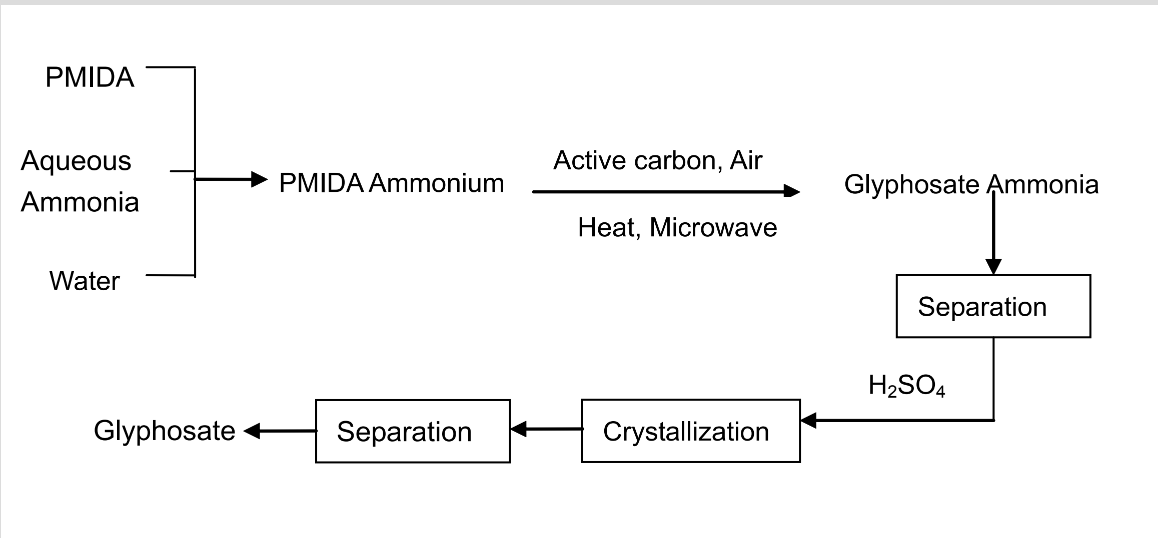
■ Technology

Active carbon catalyzed PMIDA oxidation under microwave

On 16 November, 2011, the State Intellectual Property Office of China (SIPO) disclosed an innovative technology for PMIDA oxidation. The newly patented technology which is named as "A Method of Preparing Glyphosate from PMIDA Catalyzed Oxidation under Microwave Effect " is invented by Anhui Guoxing Bio-Chemical Co., Ltd., a wholly-owned subsidiary of listed Nanjing Redsun Co., Ltd.

The new technology introduces microwave to shorten reaction time and reduce waste in the process of PMIDA oxidation. The key steps of the working procedures are described as follows:

FIGURE 1: Process of active carbon catalyzed PMIDA oxidation under microwave effect



Source: CCM International's abstract from patent CN201110117202.0

Key points in the working procedure:

1) Optimized molar ratio of PMIDA and Ammonia (mol:mol) is 1:(1.1-1.2).
2. Content of PMIDA in PMIDA ammonium solution is 20-35%;
3. Weight ratio of PMIDA ammonium solution and active carbon is (80-100): (2-5).
4. Microwave frequency: 1GHZ-10GHZ; PMIDA oxidation pressure: 0.6-0.8 MPa; Oxidation temperature: 70-75℃ ; Oxidation duration: 4-5 hours.
5. Oxidation end point: PMIDA content lower than 1.0%; Solution temperature should be controlled to be less than 40 ℃ in the process of adding concentrated sulfuric acid for glyphosate acidification, and the end of acidification is pH=1.0-1.8.
6. Crystallization process is divided into two phases. The first phase is stirring crystallization under normal temperature for 5-7 hours (use condensed water to decrease temperature), and the second phase is stirring crystallization under the temperature of 2-5℃ for 5-7 hours.

The new technology has advantages of high yield (approaching 96%), high grade of glyphosate (96%-98%), short oxidation duration and low waste (formaldehyde and formic acid that could be decompounded into water and carbon dioxide by microwave.

PMIDA oxidation is a key step in glyphosate technical production adopting IDA route. There are many oxidation methods such as concentrated sulfuric acid oxidation, hydrogen peroxide oxidation and catalyzed air (or oxygen) oxidation. Now more and more Chinese glyphosate manufacturers have mastered the air oxidation technology.

Anhui Guoxing Bio-Chemical Co., Ltd. has a 20,000t/a PMIDA production line and a 20,000t/a glyphosate technical line, but its operating rates of these two production lines are relatively low, due to few overseas sales channels and cost problem. Apart from microwave's high efficiency in heating, microwave could selectively break chemical bond of a chemical compound by its specific energy (microwave frequency). Microwave is used by more and more researchers for waste treatment and chemical synthesis.

■ Price Analysis

Glyphosate price keep stable in Dec. 2011

In December 2011, glyphosate market kept stable and the prices of all glyphosate products have kept at the same level as that in November 2011, which will not change much in the following two months.

In mid-December 2011, the quotations of Chinese glyphosate technical and PMIDA are the same as that in November 2011, while that of glyphosate formulations has fluctuated in a small range. And the prices of glyphosate's key raw materials, namely glycine, IDAN and DEA, also kept stable, as their markets are subjected to that of glyphosate.

The stable glyphosate price is mainly due to the stagnant demand from overseas markets and little room for the drop in glyphosate price in China. The main reason of the stagnant overseas demand is that the Christmas Festival is approaching now and overseas buyers reduce their inquiries.

Though glyphosate technical price in December 2011 has increased by 5% over December 2010 and 11% compared with the record low in July 2011. The price level of glyphosate technical remains undervalued, and most glyphosate technical manufacturers are surviving on the edge of breaking even. Thus, there is no room for decrease in glyphosate price.

The price level of glyphosate products will be kept in the following two months, because the Chinese Spring Festival (22-28 January, 2012) is coming and the transaction will be greatly affected as usual.

TABLE 9: Prices of glyphosate products and key raw materials, December 2011

Products		Dec. 2011		Nov. 2011		Price change MoM
		USD/t	RMB/t	USD/t	RMB/t	
Yellow phosphorus		2,724	17,300	2,680	17,000	1.76%
DEA		1,890	12,000	1,970	12,500	-4.00%
Glycine		1,695	10,750	1,781	11,300	-4.87%
IDAN		1,711	10,850	1,750	11,100	-2.25%
Glyphosate formulation	10% SL	583	3,700	593	3,760	-1.60%
	41% IPA	1,955	12,400	1,923	12,200	1.64%
	62% IPA	2,412	15,300	2,443	15,500	-1.29%
	50% SP	2,412	15,300	2,412	15,300	0%
	75.7% WSG	3,753	23,800	3,768	23,900	-0.42%
Glyphosate technical (95%)		3,863	24,500	3,862	24,500	0%
PMIDA		2,176	13,800	2,175	13,800	0%

Note: 1. Price change is computed by RMB quotation.
2. Prices are monitored in 14-15 December 2011.
Source: CCM International

Export Analysis

Glyphosate export in October 2011

Export Volume

In October 2011, China has exported about 23,040 tonnes of glyphosate A.I., including 15,369 tonnes of glyphosate technical, 21,477 tonnes of glyphosate formulations and 1,422 tonnes of PMIDA. Glyphosate A.I. export volume increased by 4.97% over the previous month, due to the significant growth in glyphosate formulation export.

Both of the export volume of glyphosate technical and that of formulations in October 2011 enjoyed a high growth compared with that in October 2010, up 9.87% of the total A.I. volume compared with that in October 2010.

TABLE 10: Export volume of glyphosate products, October 2011

Product	Export Volume, tonne			Change	
	Oct. 2011	Sept. 2011	Oct. 2010	MoM	YoY
Technical	15,369	16,125	13,351	-4.69%	15.11%
PMIDA	1,422	3,939	3,294	-63.90%	-56.83%
Formulation	21,477	18,083	17,636	18.77%	21.78%

Source: CCM International

Export Price

Driven by the increasing cost, especially raw material cost such as yellow phosphorus cost, all the export prices of glyphosate products enjoyed growth MoM and YoY. Glyphosate technical export price increased by 20.58% YoY, but it is estimated that the increased price has little contribution to glyphosate technical manufacturers for getting profit from glyphosate business.

TABLE 11: Export price of glyphosate products, October 2011

Product	Export Price, USD/kg			Change	
	Oct. 2011	Sept. 2011	Oct. 2010	MoM	YoY
Technical	3.75	3.49	3.11	7.45%	20.58%
PMIDA	2.06	1.89	1.89	8.99%	8.99%
Formulation	1.92	1.90	1.85	1.05%	3.78%

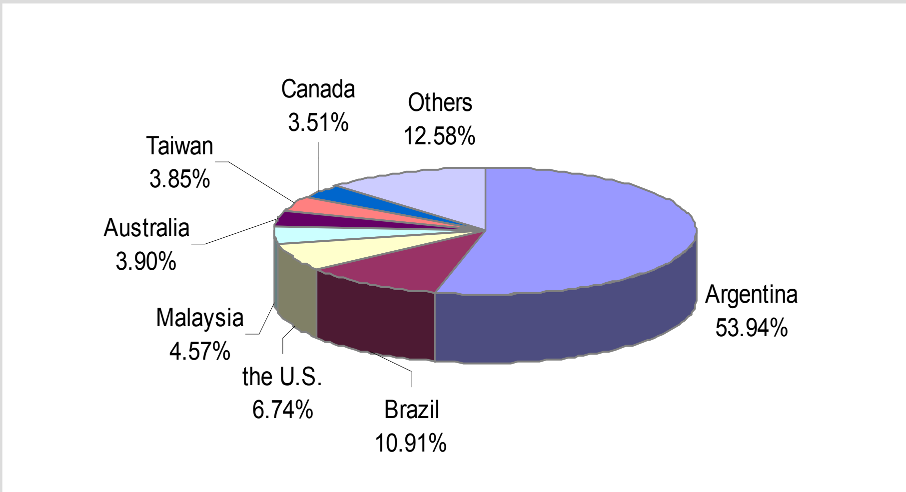
Source: CCM International

Export Destination

China's glyphosate products have been exported to over 67 countries or regions in October 2011, and American countries and Southeast Asian countries are still the main destinations.

26 countries have imported Chinese glyphosate technical in October 2011, and the top four countries, namely Argentina, Brazil, the U.S. and Malaysia, have imported 11,704 tonnes of glyphosate technical in October 2011, accounting for 76.16% of China's total export volume in this period.

FIGURE 2: China's glyphosate technical export by destination, October 2011



Source: CCM International

PMIDA has been exported to Argentina and India with volume of 1,170 tonnes and 252 tonnes respectively.

Glyphosate 41% IPA, accounting for 51.95% of the total formulation export as per A.I. volume in October 2011, has been exported to 53 countries (or regions). The top four destinations of glyphosate 41% IPA are Ghana, Vietnam, Nigeria and Colombia, with the total volume taking up 48.42% of China's total 41% IPA export volume in October 2011.

Glyphosate 62% IPA has been exported to 22 countries in October 2011, and the top four destinations are Brazil, Singapore, Indonesia and South Korea.

Glyphosate 51% IPA has only been exported to Australia in October 2011. Glyphosate 75.7% WSG has been exported to six countries, with volume to Argentina and Uruguay taking up 63.63% and 21.76% of the total respectively.

Manufacturer

According to CCM International's in-depth analysis, these glyphosate technical exported in October 2011 are manufactured by 15 Chinese companies. Zhejiang Wynca Chemical Industry Group Co., Ltd., Nantong Jiangshan Agrochemical & Chemicals Co., Ltd., Jiangsu Yangnong Chemical Group Co., Ltd., Sichuan Fuhua Tongda Agro-chemical Technology Co., Ltd. and Zhejiang Jinfanda Biochemical Co., Ltd. are still the top five manufacturers, with total volume of over 13,400 tonnes.

TABLE 12: Major manufacturers of exported glyphosate technical, October 2011

Glyphosate technical manufacturer	Market share
Zhejiang Wynca Chemical Group Co., Ltd.	41%
Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	20%
Jiangsu Yangnong Chemical Group Co., Ltd.	14%
Sichuan Fuhua Tongda Agro-chemical Technology Co., Ltd.	8%
Zhejiang Jinfanda Biochemical Co., Ltd.	7%
Anhui Huaxing Chemical Industry Co., Ltd.	3%
Hubei Sanonda Co., Ltd.	2%
Others	3%

Source: CCM International

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