

II-1 Current production situation

II-1.1 Summary of manufacturers

There were 24 manufacturers producing L-aspartic acid with the total capacity of 77,700t/a in 2007. When it comes to 2008, two L-aspartic acid producers, namely Shandong Kairui and Shandong Xinfeng, stop their production and are not planning to resume production. Currently, there are 22 active producers of L-aspartic acid in China with the total capacity of 88,900t/a in April 2008. Several producers expanded their capacity in 2007 and put the new capacity into production in 2008.

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Table II-1.1-1 The output and capacity of L-aspartic acid in top 5 and top 12 producers and percentage in these few years (Unit: capacity: t/a, output: tonne)

Top 5						
	2008		2007		2006	
	Volume	Percentage	Volume	Percentage	Volume	Percentage
Total capacity	████	████	████	████	████	████
Total output	██	██	████	████	████	████
Top 12						
	2008		2007		2006	
	Volume	Percentage	Volume	Percentage	Volume	Percentage
Total capacity	████	████	████	████	████	████
Total output	██	██	████	████	████	████

Findings:

Table II-1.1-2 Summary of active producers of L-aspartic acid in 2008 (Capacity:t/a; output: tonne)

No.	English name	Abbreviation	Location	Capacity '08	Capacity '07	Estimate output '07
1	████████████████████	██████████	████	████	████	████
2	████████████████████	██████████	██	████	████	████
3	████████████████████ ████████████████████	██████████ ██████████	████	████	████	████
4	████████████████████	██████████	██	████	████	████
5	████████████████████	██████████	██	████	████	████
6	████████████████████	██████████	████	████	████	████
7	████████████████████ ██████	██████████	████	████	████	████
8	████████████████████ ██	██████████ ████	Guangxi	████	████	████
9	████████████████████	██████████	Shandong	████	████	████
10	████████████████████	██████████	Anhui	████	████	████

11				4,000	4,000	1,400
12				3,000	3,000	1,200
13				2,000	2,000	1,200
14				2,000	1,200	1,000
15						
16						
17						
18						
19						
20						
21			Hubei			
22			Shanxi			
Two stopped producers		\	\	\	1,600	200
Total		-	-			

II-3 Trade analysis of L-aspartic acid in 2004~2007

In the recent three years, the export volume of L-aspartic acid kept increasing rapidly. The export volume was only [redacted] tonnes in 2004, and it increased to [redacted] tonnes in 2007. However, the importance of export in domestic L-aspartic acid industry is declining. The ratio of exported L-aspartic acid against domestic output decreased year by year, and the ratio was [redacted] in 2004, 2005, 2006 and 2007.

Table II-3-1 Destination of L-aspartic acid in 2004~2007 (Quantity: tonne, price: USD/kg)

No.	Country	2007		2006		2005		2004	
		Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price
1			1.49		1.48		1.70		1.29
2			1.83		2.00		2.00		1.24
3			1.40		1.35		1.61		1.24
4			1.59		1.94		1.96		1.16
5			1.41		1.28		1.62		1.45
6			1.45		1.54		1.68		1.23
7			2.04		1.89		2.18		1.67
8			1.28		1.39		-		-
9	Netherlands		1.24		1.49		1.72		1.70
10	Germany		1.57		1.82		1.62		-
11	Canada		1.75		1.73				-
12	India		1.55		1.48		1.79		0.90
13	Poland		3.00		2.13		2.62		
14	Spain		1.38		1.26		-		-

15	Taiwan	█	3.24	█	1.96	█	2.73	█	1.76
16	█	█	1.41	█	1.29	█	2.06	2.100	1.50
17	█	█	-	█	1.73	█	1.86	40.000	1.99
18	█	█	-	█	1.79	█	1.79	12.600	1.87
19	Others	█	1.87	█	1.77	█	1.99	96.870	1.33
	█	█	█	█	█	█	█	█	█

IV Consumption pattern of L-aspartic acid

As an important amino acid, L-aspartic acid is widely consumed in medicine industry, food industry and chemical industry. The consumption of L-aspartic acid can be divided into two parts according to its grade: food grade and pharmaceutical grade

L-aspartic acid of food grade is mainly consumed to produce L-alanine and aspartame in China, both of which are important materials in food industry and medicine industry. Besides, food grade L-aspartic acid can be widely used in many industries such as food additive, aspartame, chemicals including Polyaspartic Acid, synthetic resins, cosmetic and so on.

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Table IV-1-1 Consumption pattern of L-aspartic acid in China in 2006 and 2007

Consumption Fields	Consumption '06 (tonne)	Consumption '07 (tonne)
█	█	█
█	█	█
█	█	█
Others	171	208
█	█	█

V Brief introduction to production technology

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Table V-1 Manufacturing cost of L-aspartic acid in █

Items	Unit (tonne)	2007		2008	
		Price (USD/t)	Cost(USD)	Price (USD/t)	Cost(USD)
Variable cost					
Fumaric acid	█	1,051.65	█	1,228.88	█
Liquid ammonia	█	289.2	█	439.88	█
Active carbon	█	657.28	█	698.23	█
Concentrated sulfuric acid	█	65.73	█	188.52	█
Water	█	0.28	█	0.29	█
Steam	█	13.15	█	20.95	█

	Electricity	█	0.08	█	0.09	█	
	Labor	█	105.16	█	111.72	█	
	Others						█
Fixed cost	Appreciation	█			█		
	Maintenance						█
	Others						█
Total				█		█	