

1 Shine Star (Hubei) Biological Engineering Co., Ltd.

1.1 Basic information

Name: Shine Star (Hubei) Biological Engineering Co., Ltd.

Address: No. 1, Yanjiang Road, Gong An, Jingzhou City, Hubei Province, China

Organization: Producer/manufacturer Industry: Chemicals and materials Website: http://www.shine-star.com.cn

Phone: 86-XXX Fax: 86-XXX Email: XXX

1.2 Company background

Content byte: Background information of Shine Star (Hubei) Biological Engineering Co., Ltd.

Shine Star (Hubei) Biological Engineering Co., Ltd. (Hubei Shine Star) which was established in 2001 in Gong'an County, Hubei Province is a subsidiary company of Fosun Pharmaceutical Group. The company is mainly engaged in the business of extracted amino acids currently. As the largest producer of leucine by extraction method in China, it has a covering area of more than 90,000 square meters and about 1,450 employees.

The company has obtained some certifications such as ISO 9001:2000, ISO 22000:2005, ISO 14001:2004, Kosher, Halal, and GMP.

Hubei Shine Star has established a long-term cooperation relationship with Nanjing University. Now the company also works as an industrial base for post doctor.

In 2012, leucine output in Hubei Shine Star is 1,150 tonnes, with the capacity of 1,500 t/a. There are no potential capacities for leucine in the company currently.

Content byte: Company background of Shine Star (Hubei) Biological Engineering Co., Ltd.

Shine Star (Hubei) Biological Engineering Co., Ltd. (Shine Star), established in 1996, is one of the leading producers of amino acids extracted via hydrolysis method in China. In 2006, it was merged by Shanghai Fosun Pharmaceutical (Group) Co., Ltd. Now it has more than 1,000 employees.

The company's amino acids, especially L-Arginine, L-Arginine hydrochloride monohydrate and L-Cysteine hydrochloride monohydrate, enjoy a good reputation in domestic and overseas market. Its amino acids meet the requirements of Ajinomoto Co., Inc., the United States Pharmacopeia and the European Pharmacopoeia. It has also obtained some certifications such as ISO 9001: 2000, ISO 14001:2004, Kosher, Halal, HACCP and American Institute of



Baking.

Shine Star has established long-term cooperation relationships with Nanjing University and other famous universities and institutes in China. And the company is the postdoctoral industrial base and the enterprise technology center of Hubei Province. All these help strengthen its leading position in hydrolysis amino acid industry.

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1.3 Production information

Table 1.3-1 Production information of Shine Star (Hubei) Biological Engineering Co., Ltd.

Product	Year	Capacity, t/a	Output, tonne
Glucosamine	2002	***	***
Glucosamine	2003	***	***
L-Arginine	2010	***	***
L-Arginine	2011	***	***
L-Arginine	2012	***	***
L-Arginine	2013	***	***
L-Cysteine	2010	***	***
L-Cysteine	2011	***	***
L-Cysteine	2012	***	***
L-Cysteine	2013	***	***
L-Cysteine hydrochloride monohydrate	2006	2,000	***
L-Cysteine hydrochloride monohydrate	2007	2,000	***
L-Cysteine hydrochloride monohydrate	2008	***	***
L-Cysteine hydrochloride monohydrate	2009	***	***
L-Cysteine hydrochloride monohydrate	2010	***	***
L-Cysteine hydrochloride monohydrate	2011	***	***
L-Cysteine hydrochloride monohydrate	2012	***	***
L-Cysteine hydrochloride monohydrate	2013	***	***
Leucine	2010	***	***
Leucine	2011	***	***
Leucine	2012	***	***
L-tert-Leucine	2010	***	***

Source: CCM

Content byte: L-arginine supply and producers in China

In China, the number of L-arginine producers is less than 10 currently. Among these L-Arginine producers, Shine Star Hubei is the largest producer of L-Arginine by output in China at present. Shine Star Hubei focuses on foreign market and most of its L-Arginine is for export. In 2011,



the company's export volume of L-Arginine accounted for over 90% of its total output. However, in 2012, Hubei Shine Star's output of L-Arginine decreased to about XXX tonnes, due to the relocation.

Content byte: L-Arginine business in Shine Star (Hubei) Biological Engineering Co., Ltd.

▶ Production

The L-arginine capacity of Hubei Shine Star reaches about 1,100 t/a in Feb. 2012. Its output is XXX tonnes in 2011, which is lower over 2010 because the company has set its L-arginine production lines idle since late 2011.

▶ Technology

Hubei Shine Star has improved its hydrolysis method and obtained a patent on it (patent number: 200510019915).

▶ Market sales

More than 60% of the L-arginine produced by Hubei Shine Star is exported to America, Europe and so on every year, while there is only a small amount left for its regular downstream users in China.

Content byte: Introduction of key threonine producers in China

Among these L-cysteine producers, Wuhan Grand Hoyo Co., Ltd. and Ningbo Haishuo Biotechnology Co., Ltd. first produced L-Cycsteine in China.

Currently, Shine Star (Hubei) Biological Engineering Co., Ltd. (Shine Star Hubei) is the largest L-Cysteine producer in China, with a capacity of 6,700 t/a. About 60% of the company's L-Cysteine is for export.

Content byte: Major producers of leucine in China

At present, there are about 15 leucine producers in China. The output in these leucine producers is quite small. Most of them produce less than 100 tonnes in 2011.

Among these leucine producers, Shine Star (Hubei) Biological Engineering Co., Ltd. (Hubei Shine Star) is the largest supplier in China at present. Its output in 2011 is about XXX tonnes, accounting for 44% of the total leucine output in China in 2011. Ningbo Haishuo Biotechnology Co., Ltd. (Ningbo Haishuo) with the output of 530 tonnes, is the second largest supplier of leucine in China in 2011.

Many producers adopted hydrolysis technology in leucine production, because of the lower



cost compared with the fermentation technology.

Only a few producers such as Shanghai Ajinomoto Amino Acid Co., Ltd. (Shanghai Ajinomoto) take fermentation as their major leucine production method. Their products are especially exported to Central and West Asia, where the people have special request on leucine production attributed to their religion, because these people considered the hydrolysis production environment may offend their god—raw materials in leucine hydrolysis production may include pig hair, which is abandoned to be used in Islam world.

Content byte: Hubei Shine Star stopped the glucosamine production in 2005

Hubei Shine Star disclosed that this company has stopped the GAH production only for several months while in 2003 the company still produced GAH. They reveal the unstable supply of raw material is the major reason for the change. They disclose that the company will probably not produce GAH in future.

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1.4 Import & Export

Table 1.4-1 Import & export situation of Shine Star (Hubei) Biological Engineering Co., Ltd.

Imp/Exp	Year	Volume, t	Value, USD	Price, USD/kg
Import	2005	***	***	***
Export	2009	***	***	***

Source: China Customs

1.5 Production registration

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1.6 Production cost

Content byte: Estimated manufacturing cost of Shine Star (Hubei) Biological Engineering Co., Ltd.



Table 1.6-1 Estimated manufacturing cost of Hubei Shine Star, May 2012

Item	Unit price, USD/t (USD/kWh)	Unit consumption, t/t (kWh/t)	Unit cost, USD/t	Share, %
Hair and feather	***	***	***	***
Main raw materials for purification	/	/	***	***
Other raw materials	/	/	***	***
Water	0.26	***	156.00	2.02
Electricity, kWh	***	***	***	***
Labor	/	/	***	2.41
Salary of management staff and other auxiliary staff	/	/	67.00	0.87
Amortisation of fixed assets	/	/	***	2.87
Treatment of waste gas, wastewater and waste residue	/	/	***	***
Other costs	1	/	148.00	1.91
Total cost, USD/t				100.00
	Hair and feather Main raw materials for purification Other raw materials Water Electricity, kWh Labor Salary of management staff and other auxiliary staff Amortisation of fixed assets Treatment of waste gas, wastewater and waste residue Other costs	Hair and feather Main raw materials for purification Other raw materials Water Labor Salary of management staff and other auxiliary staff Amortisation of fixed assets Treatment of waste gas, wastewater and waste residue Other costs (USD/kWh) *** // // // // // // // //	Hair and feather *** *** Main raw materials for purification / Cother raw materials / / / / / / / / / / / / / / / / / / /	Hair and feather *** *** *** Main raw materials for purification Other raw materials *** *** Water 0.26 *** 156.00 Electricity, kWh *** *** Labor / / / *** Salary of management staff and other auxiliary staff Amortisation of fixed assets / / / *** Treatment of waste gas, wastewater and waste residue Other costs / / 148.00

Source: CCM

Content byte: Estimated leucine production cost of Shine Star (Hubei) Biological Engineering Co., Ltd., 2012

Table 1.6-2 Estimated leucine production cost of Hubei Shine Star, 2012

Category	Item	Unit price, USD/t	Unit consumption,	Unit cost,	Share, %
		(USD/kWh)	t/t (kWh/t)	USD/t	,
	Hair and feather	***	***	***	***
	Main raw materials for	/	/	***	19.07
Direct	purification				
Direct	Other raw materials	1	1	***	***
cost	Water	***	***	156.00	1.95
	Electricity	***	***	***	***
	Labor	1	1	118.43	1.48
	Salary of management staff	1	1	***	4.97
	and other auxiliary staff				4.97
Indirect cost	Amortisation of fixed assets	1	1	***	2.78
	Treatment of waste gas,				
	waste water and waste	1	1	***	***
	residue				
	Other costs	1	1	148.00	1.85
Total cost, U	JSD/t	***			100



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1.7 Financial information

Content byte: Financial situation of Shine Star (Hubei) Biological Engineering Co., Ltd., 2012, USD

Table 1.7-1 Financial situation of Hubei Shine Star, 2012, USD

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Revenue	***		
Cost of sales	***		
Distribution expenses	***		
Administrative expenses	***		
Financial costs	***		
Business taxes and surcharges	***		
Non-operating income	***		
Non-operating expense	***		
Total income	***		
Total profit	***		
Income tax expense	***		
Net profit	***		

Source: Hubei Shine Star

Content byte: Financial situation of leucine in Shine Star (Hubei) Biological Engineering Co., Ltd., 2012, USD

Table 1.7-2 Financial situation of leucine in Hubei Shine Star, 2012, USD

Revenue	***
Cost of sales	***
Distribution expenses	***
Administrative expenses	***
Financial costs	***
Business taxes and surcharges	***
Total profit	***
Income tax expense	***
Net profit	***

Source: Hubei Shine Star

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1.8 Competitiveness analysis

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1.9 Marketing and sale mode

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1.10 R&D

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1.11 Procurement

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1.12 Company dynamics

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1.13 Site visit

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