

Tsaker Chemical Group (1986 HK)

Leading Global DSD Acid Company, Seizing The Opportunity To Deploy Battery Materials and Environmental Consultancy: Initiation

Investment Focus

Initiate with BUY

Rating	BUY
Current Price	HK\$1.34
Target Price	HK\$1.75

Market cap	HK\$1.39bn / US\$0.18bn
Daily traded value (3mth)	US\$0.72mn
Shares outstanding	1,038mn
Free float (%)	44%
1 yr high - low	HK\$3.95-HK\$1.18



Source: Factset

	1mth	3mth	12mth
Absolute	-16.9%	-20.2%	-64.5%
Absolute USD	-16.7%	-19.9%	-64.0%
Relative to MSCI China	-9.7%	-10.0%	-54.5%

(Rmb mn)	2018A	2019A	2020E	2021E
Revenue	1,516	1,818	1,685	1,900
(+/-)	21.52%	19.95%	-7.34%	12.78%
Net profit	223.00	518.00	353.00	415.00
(+/-)	63.74%	132.36%	-31.78%	17.50%
Diluted EPS (Rmb)	0.21	0.50	0.34	0.40
GPM	34.57%	57.25%	41.34%	41.83%
ROE	16.90%	29.32%	16.67%	16.38%
P/E	5.78	2.43	3.57	3.03

Source: Company data, HTI

(This note is the English translation of a note that was originally written in Chinese and published on 13 Apr 2020)

- Tsaker Chemicals is the world's leading producer of various fine chemicals such as dyes, pigments and agricultural intermediates.** The company was founded in 2014. In Jul. 2015 and was listed on the main board of HKEx under the stock code: 1986 HK. The company's main production bases are located in Cangzhou, Hebei and Dongying, Shandong. Mr. Ge Yi is the actual controller of the company and his shareholding ratio as of Mar. 2020 was 51.36%. The company's main business is divided into four major segments including dye and agrochemical intermediates, pigment intermediates, battery materials and environmental protection consulting.
- Dye and agrochemical intermediates: The Company is the world's largest producer of DSD acid.** DSD acid is the main dye intermediate for optical brightening agents (OBA). Applications of OBA include dyes for paper and textiles as well as optical brightening agents for plastics and consumer products. In 2016, the company's DSD acid production accounted for 53% of the global market share; the second and third largest producers were Lion Chemicals and India's Deepak Nitrite, with market shares of 13% and 12.5%, respectively. Due to the tightening of environmental protection and the cessation of production by competitors, the supply of DSD acid has been in short supply since 2018, and the price has increased significantly, which has benefited the company.
- The main products of pigment intermediates include DMSS, DMAS, DATA, etc.** DMSS and DATA are used as intermediates in the preparation of quinacridone high-grade organic pigments, mainly used in the production of automotive coatings, high-end architectural coatings, etc. DMAS is mainly used in the production of artificial food color lemon yellow, is one of the most widely used synthetic food coloring, used to produce food, medicine, cosmetics and tobacco. In 2016, the company was the world's largest producer of DMSS and the second largest producer of DMAS. The output of the company's DMSS and DMAS accounted for 42.7% and 19.8% of the global market share, respectively.
- Earnings forecast.** We estimate that the company's EPS will be Rmb0.34, Rmb0.40, and Rmb0.44 in 2020-2022. We apply a PER of 4.7x in FY20 to get our TP of Hkd1.75. We initiate with a "BUY" rating.
- Risks.** Demand for DSD acid and mononitrotoluene falls short of expectations; fluctuations in global oil prices lead to fluctuations in raw material prices; production of battery materials business increases less than expected.

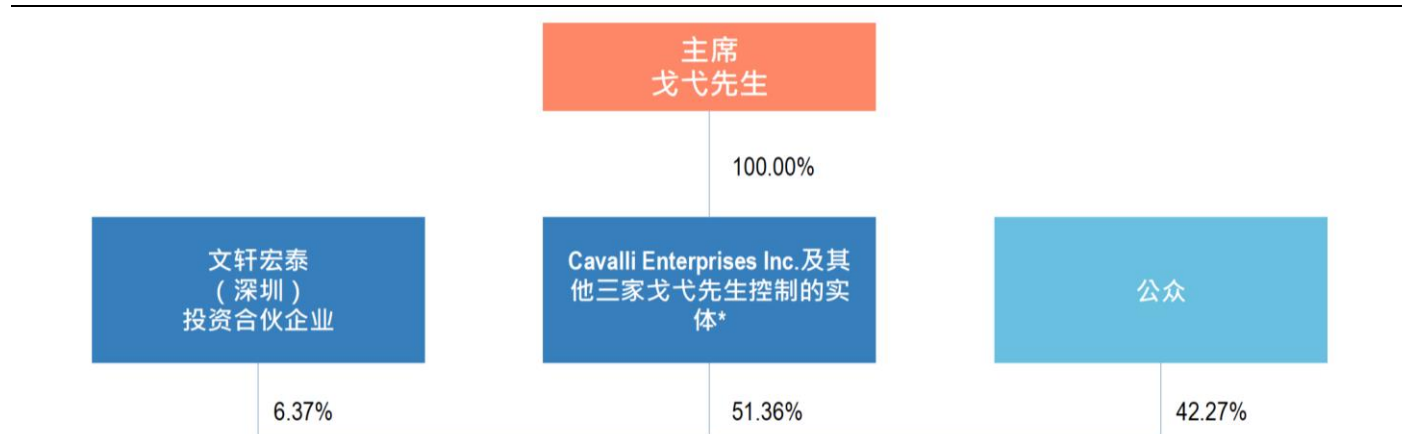
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1. Tsaker Chemicals is the World's Leading Producer of Various Fine Chemicals Such As Dyes, Pigments and Agricultural Intermediates.

Tsaker Chemicals is the world's leading producer of various fine chemicals such as dyes, pigments, agricultural intermediates, and began to enter the field of lithium battery materials and environmental consulting in 2017. The company was founded in 2014. In Jul. 2015 and was listed on the main board of HKEx under the stock code: 1986.HK. The company's main production bases are located in Cangzhou, Hebei and Dongying, Shandong. Mr. Ge Yi is the actual controller of the company and his shareholding ratio as of Mar. 2020 was 51.36%.

Fig. 1 The Company's Shareholding Structure (as of Mar, 2020)



Source: the company's 2019 annual report, HTI

Mr Ge Yi

Wenxuan Hongtai (Shenzhen) Investment Partnership 6.37%, Cavalli Enterprises Inc. and three other entities controlled by Mr. GE Yi, Other Shareholders 42.27%

The company's main business is divided into four major segments including dye and agrochemical intermediates, pigment intermediates, battery materials and environmental protection consulting. Among them, the main products of dyes and agricultural chemicals intermediates include DSD acid, OBA, PNT/ONT/MNT and OT, etc. The main products of pigment intermediates include DMSS, DMAS and DATA. The main products of the battery materials department include NMP and iron phosphate.

Table 1 The Company's Industry Chain

Products Segments	Main Products	Major derivatives	Downstream terminal products
dye and agrochemical intermediates	PNT	DSD acid, OBA	Washing, papermaking, textile dyes
	ONT	OT	herbicide
	MNT		Pesticide intermediates, pharmaceutical intermediates
pigment intermediates	DMAS		Food yellow additives
	DMS	DMSS, DATA	Quinacridone pigments, automotive paints
battery materials	NMP		Polymer materials, lithium battery solvents
	Carbon nanotube conductive paste		Polymer materials, lithium battery solvents
	Ferric phosphate		Lithium battery cathode material precursor
	Ternary material precursor		Lithium battery cathode material precursor
environmental protection consulting	Air pollution treatment		Third-party waste disposal service
	Sewage treatment		Third-party waste disposal service
	Solid waste treatment		Third-party waste disposal service

Source: the company's prospectus, the company's 2018 annual report, HTI

Table 2 The Company's Main Products, Competition Pattern and Capacity Distribution

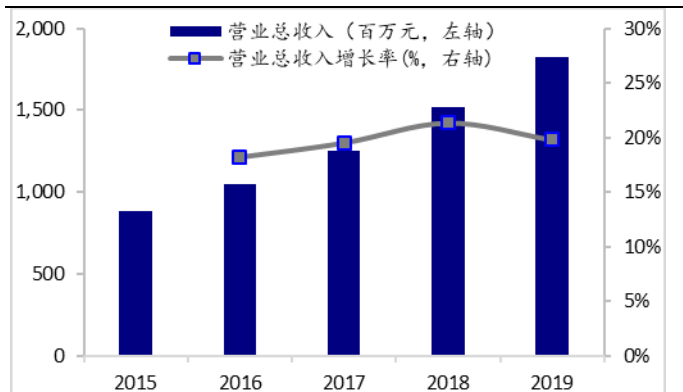
Products Segments	Products Names	Chemical Names	Chemical formula	Functions	Competition Patterns (as of 2016)	Capacity Distribution
dye and agrochemical intermediates	DSD Acid	4,4'-Diaminostilbene-2,2'-disulfonic acid	C ₁₄ H ₁₄ N ₂ O ₆ S ₂	Intermediate for dyes and optical brighteners.	DSD acid has the largest market share in the world.	Production Capacity of Cangzhou (Hebei) Base: 35,000 Tons Production capacity of Dongying Base in Shandong: 20,000 tons (under construction)
	OBA	Fluorescent Brightener		The core component for the production of paper and textile dyes, and optical brighteners for plastics and consumer products. It is most commonly used in paper, textiles, detergents and cosmetics in daily life.		
	PNT	4-nitrotoluene or p-nitrotoluene	C ₇ H ₇ NO ₂	The raw materials for dye intermediates and pigment intermediates are only used as raw materials for the production of DSD acid within the company.	Mononitrotoluene	Production Capacity of Dongying Base in Shandong: 80,000 Tons
	ONT	2-nitrotoluene or o-nitrotoluene	C ₇ H ₇ NO ₂	Pesticide intermediates, pharmaceutical intermediates, dyes and pigment intermediates.	has the third largest market share in the world.	
	MNT	3-nitrotoluene or m-nitrotoluene	C ₇ H ₇ NO ₂	Pesticide intermediates, pharmaceutical intermediates, dyes and pigment intermediates.		
	OT	O-toluidine	C ₇ H ₉ N	Dyes, pigment intermediates and pesticide intermediates are processed by ONT.		
pigment intermediates	DMSS	1,4-cyclohexanedione-2,5-dicarboxylic acid diethyl ester	C ₁₀ H ₁₂ O ₆	Intermediate used to produce quinacridone high-grade organic pigments, mainly used to produce automobile coatings, high-end building coatings, etc.	DMSS has the largest market share in the world.	Production Capacity of Cangzhou (Hebei) Base: 4,500 Tons
	DMAS	1,4-cyclohexanedione-2,5-dicarboxylic acid diethyl ester	C ₈ H ₁₂ O ₅	Food yellow pigment, pesticide, other food additive intermediates, etc.	DMAS has the second largest market share in the world.	
	DATA	2,5-diarylamino-1,4-phthalic acid	C ₂₀ H ₁₆ N ₂ O ₄	The intermediate used for preparing quinacridone high-grade organic pigment is processed by DMSS.		Production Capacity of Cangzhou (Hebei) Base: 1,000 Tons
battery materials	NMP	N-methylpyrrolidone	C ₅ H ₉ NO	Mainly used in lithium battery production and polymer material industry.		
	Ferric phosphate	Ferric phosphate	FePO ₄	Mainly used for manufacturing lithium iron phosphate battery materials; It can also be used as catalyst and ceramic etc.		Production Capacity of Cangzhou (Hebei) Base: 15,000 Tons

Source: the company's prospectus, the company's 2018 annual report, HTI

From 2015 to 2019, the company's operating revenue and NP continued to grow, with CAGRs of 19.71% and 50.02% respectively. According to the company's 2019 annual performance announcement, the company realized a total operating revenue of Rmb1.822bn in 2019, up 19.8% YoY, NP of Rmb518mn, up 132.4% YoY. From 2015 to 2019, the company's operating revenue and NP kept growing, with CAGRs of 19.71% and 50.02% respectively.

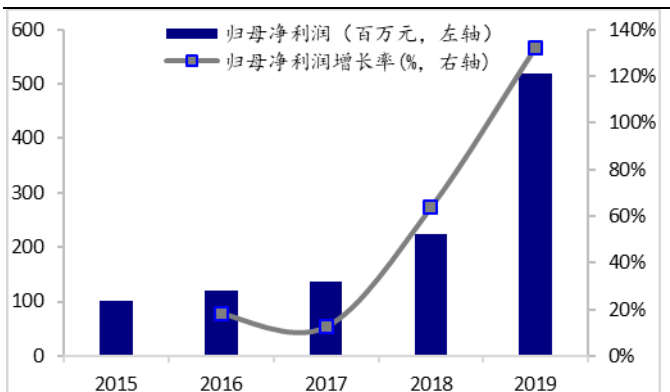
Dyes and agricultural chemical intermediates contributed to the main revenue and profits. In 2018, the revenue of dyes and agricultural chemicals intermediates, pigment intermediates, environmental protection consultation and battery materials accounted for 79.96%, 17.32%, 2.53% and 0.20% respectively. In 2018, the GPs of those above-mentioned products accounted for 81.78%, 16.97%, 1.23% and 0.03% respectively.

Fig. 2 Total Operating Revenue and Growth Rate in 2015-2019



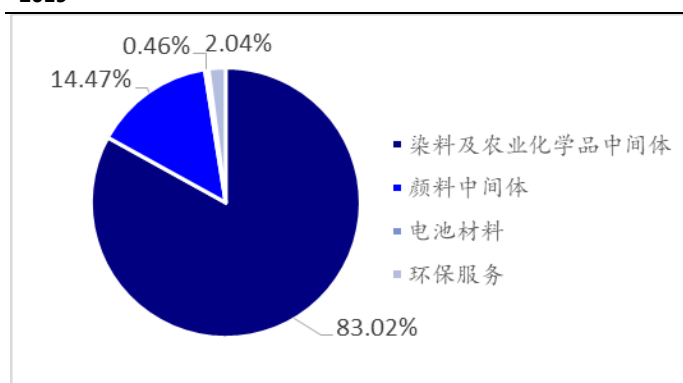
Source: WIND, the company's 2019 annual report, HTI
Total Revenue (Rmb mn, LHS), Growth Rate (% , RHS)

Fig. 3 NP and Growth Rate from 2015 to 2019



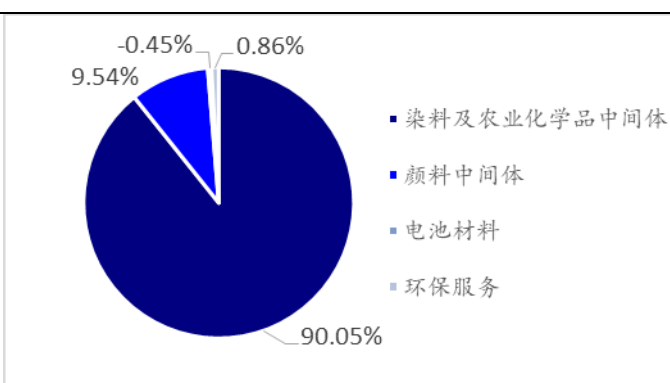
Source: WIND, the company's 2019 annual report, HTI
NP (Rmb mn, LHS), Growth Rate (% , RHS)

Fig. 4 The Proportion of the Company's Main Business Revenue in 2019



Source: the company's 2019 annual report, HTI
Dye and agrochemical intermediates
Pigment intermediates
Battery materials
Environmental protection consulting.

Fig. 5 GP Structure of the Company in 2019

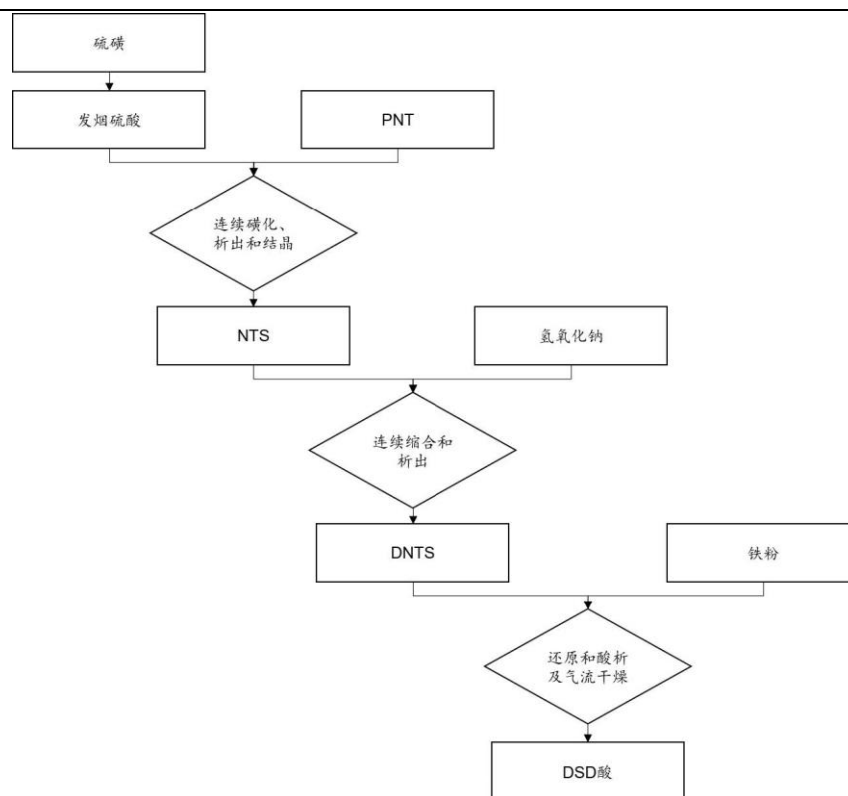


Source: the company's 2019 annual report, HTI
Dye and agrochemical intermediates
Pigment intermediates
Battery materials
Environmental protection consulting.

2. Dye intermediates: the Company is the World's Largest Producer and Distributor of DSD Acid.

The chemical name of DSD acid is 4,4'-diaminodistyrene -2,2'-disulfonic acid, yellow paste or light yellow powder, and its main raw materials are PNT, sodium hydroxide, iron powder and sulfur. DSD acid is the main dye intermediate of optical brightening agents (Optical Brightening Agents, OBA). Applications of OBA include dyes for paper and textiles as well as optical brighteners for plastics and consumer products. OBA is commonly used in daily paper, clothing, detergent and cosmetics. In order to further extend to the downstream industry chain, the company entered into an OBA asset lease agreement with XiaJin Zhenhua Chemical Tech in Dec, 2016, and began production of printing and dyeing OBA and washing OBA from Jan, 2017.

Fig. 6 Main Production Processes of DSD Acid



Source: the company's prospectus, HTI

Sulfur

Fuming sulfuric acid, PNT

Continuous sulfonation, precipitation and crystallization

NTS, sodium hydroxide

Continuous condensation precipitation

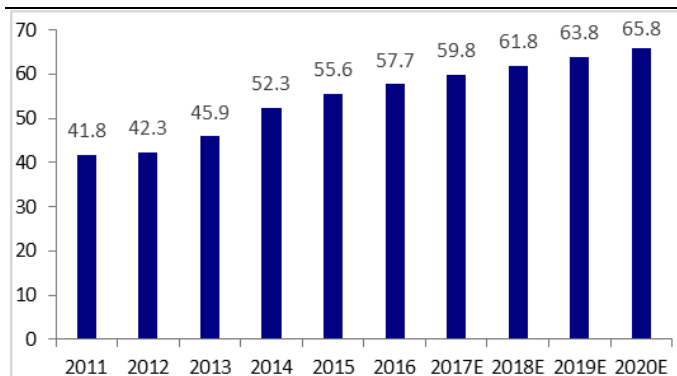
DNTS, iron powder

Reduction and acid precipitation and air drying

DSD acid

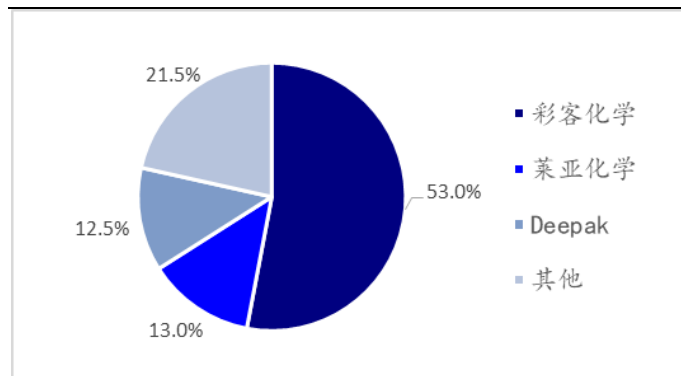
Benefiting from environmental remediation and the shutdown of competitors, the company is the world's largest producer of DSD acid. According to Frost & Sullivan's forecast, the global DSD acid production has steadily increased since 2011 and will reach about 66k tons in 2020. The CAGR from 2011 to 2020 is expected to reach 5.17%. The company is the world's largest producer of DSD acid, accounting for 53% of the global market in 2016. The second and third largest producers are Leia Chemical and Deepak Nitrite of India, with market shares of 13% and 12.5% respectively. The total market share of the world's top three producers is as high as 78.5%, and Tasker Chemical will continue to benefit from the growing demand for DSD acid.

Fig. 7 Global Production Forecast of DSD Acid (1000 Tons)



Source: Frost & Sullivan, HTI

Fig. 8 Global Market Share of DSD Acid in 2016



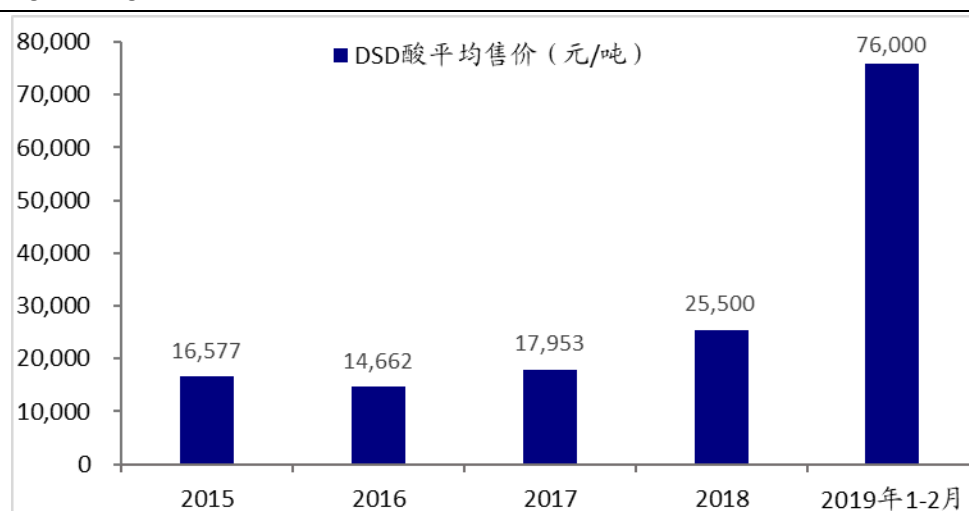
Source: Frost & Sullivan, HTI

Tsaker Chemicals
Lion Chemicals
Deepak
Others

In July 2012, India's Ministry of Industry and Commerce initiated an anti-dumping investigation against DSD acid originating in China in response to the application of India's Deepak Nitrite. In early 2019, the company won the final victory of the Indian government's anti-dumping lawsuit on behalf of its Chinese counterparts. According to the ruling announced by the Indian government, the anti-dumping review investigation on imports of DSD acid from China will be terminated and no anti-dumping duties will be imposed on imports of DSD acid products originating in China. The seven-year-old anti-dumping investigation on DSD acid has officially ended. This victory will help to enhance the competitiveness of DSD acid in the Indian market.

Lion Chemicals, the company's largest competitor for DSD acid, is located in Lingang Industrial Zone, Guanyun County, Lianyungang City, Jiangsu Province. In 2017, due to the major explosion of Lianyungang Juxin Biotechnology Co., Ltd. On 9 Dec, 2018, Jiangsu provincial governments at all levels issued a number of environmental pollution remediation notices to chemical parks, which directly led to the shutdown of Lion Chemicals. As a result, DSD acid supply is in short supply and prices keeps rising.

Fig. 9 Average Price of DSD Acid from 2013 to Feb, 2019



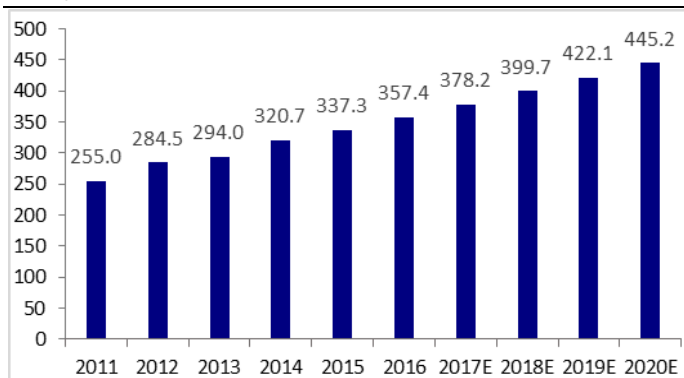
Source: Announcement on Company Performance from 2015 to 2017, Announcement on Company Performance in 2018, the company's 2018 annual report, HTI
ASP of DSD acid (Rmb/ton)

3. Agrochemical Intermediates: the company has a capacity of 80,000 tons of mononitrotoluene, which is mainly used to produce herbicides.

Mononitrotoluene and related products are the main products of the company's agricultural chemical intermediate business. According to the different isomers, mononitrotoluene is divided into o-nitrotoluene (ONT), p-nitrotoluene (PNT) and m-nitrotoluene (MNT). The yield in toluene nitration is about 60%: 35%: 5% respectively. PNT is mainly used for the internal production of DSD acid and p-toluidine (PT). ONT is sold directly or used to produce o-toluidine (OT); MNT and OT are mainly used to produce herbicides and other pesticides and pharmaceutical intermediates. At present, the company's Dongying production base in Shandong has 80,000 tons of mononitrotoluene production capacity, and provides the corresponding OT output per year according to the needs of customers.

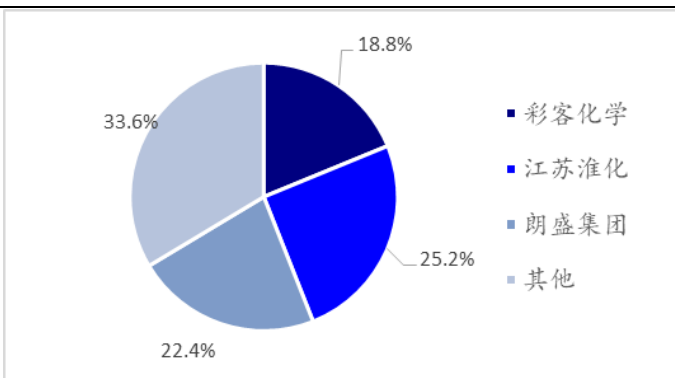
Demand for herbicides increased steadily, driving the overall demand for mononitrotoluene to a better level. According to Frost & Sullivan's forecast, the global production of mononitrotoluene will increase steadily from 2016 to 2020, reaching about 445,200 tons in 2020, and the CAGR from 2011 to 2020 is expected to reach 6.4%. In 2016, the company is the world's third largest producer of mononitrotoluene, with its output accounting for 18.8% of the global market. The top two producers are Jiangsu Huaihe Chemical Group and Lanxess Group, with market shares of 25.2% and 22.4% respectively. The market share of the three major producers is nearly 2/3 of the global total.

Fig. 10 Global Production Forecast of Mononitrotoluene (1000 Tons)



Source: Frost & Sullivan, HTI

Fig. 11 Global Market Share of Mononitrotoluene in 2016

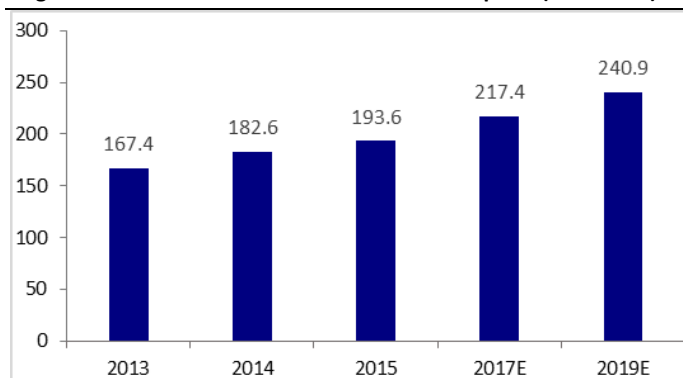


Source: Frost & Sullivan, HTI

Tsaker Chemicals, Jiangsu Huaihe Chemical Group, Lanxess, Others

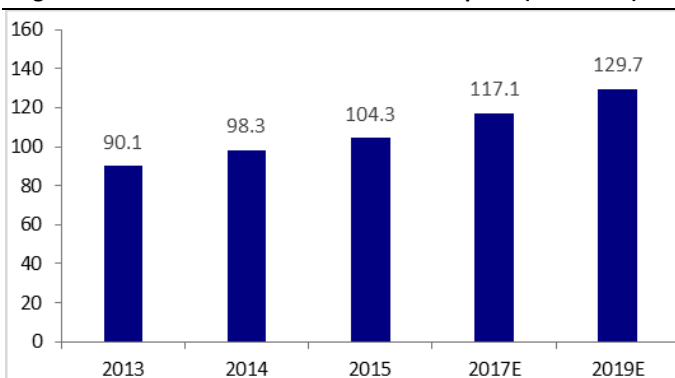
The demand for herbicides and other pesticides has also continuously promoted the demand growth of ONT/OT. According to Frost & Sullivan's forecast, the global consumption of ONT and OT will increase year by year from 2013 to 2019. In 2019, the global consumption of ONT and OT will reach 241,000 tons and 130,000 tons, with CAGRs of 6.25% and 6.26% respectively. ONT/OT can also be applied to other industries, including dye and pigment industries and pharmaceutical industries. With the increase of disposable income and the improvement of public health awareness, the development of drugs will continue to accelerate, and the demand for ONT/OT still has room for sustained growth in the future.

Fig. 12 Forecast of ONT Global Market Consumption (1000 Tons)



Source: Frost & Sullivan, HTI

Fig. 13 Forecast of OT Global Market Consumption (1000 Tons)



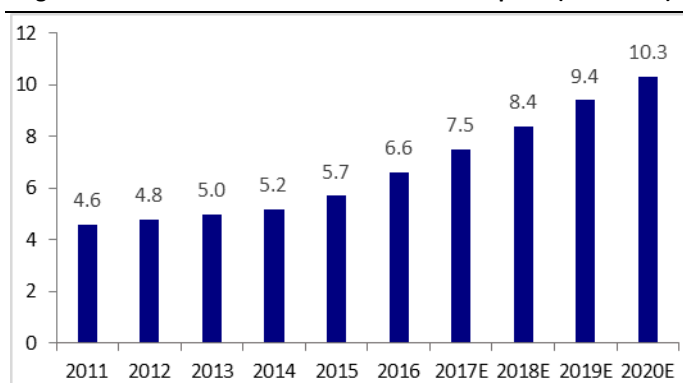
Source: Frost & Sullivan, HTI

4. Pigment Intermediate: Production of DMSS, DMAS and DATA

The main products of the company's pigment intermediate business include DMSS, DMAS, DATA, etc. Among them, DMSS can further generate DATA through condensation and oxidation reaction with raw materials such as p-toluidine, aniline, sodium hydroxide, etc. DMSS and DATA are used as intermediates for preparing quinacridone high-grade organic pigments, and are mainly used for producing automobile coatings, high-end building coatings and the like. DMAS, mainly used to produce artificial food pigment lemon yellow, is one of the most widely used synthetic food pigments, used to produce food, medicine, cosmetics and tobacco. At present, the company's Cangzhou (Hebei) production base has DMAS capacity of 4,500 tons, DMAS capacity of 4,500 tons, and DATA capacity of 2,000 tons.

In recent years, the global consumption of DMSS and DMAS has increased steadily. According to Frost & Sullivan's forecast, the global consumption of DMSS and DMAS will reach 10,300 tons and 5,600 tons in 2019, and the CAGR of global consumption of DMSS and DMAS from 2011 to 2019 will be 9.37% and 4.10% respectively. In 2016, the company is the world's largest producer of DMSS and the second largest producer of DMAS, with the production of DMSS and DMAS accounting for 42.7% and 19.8% of the global market share respectively.

Fig. 14 Forecast of DMSS Global Market Consumption (1000 Tons)



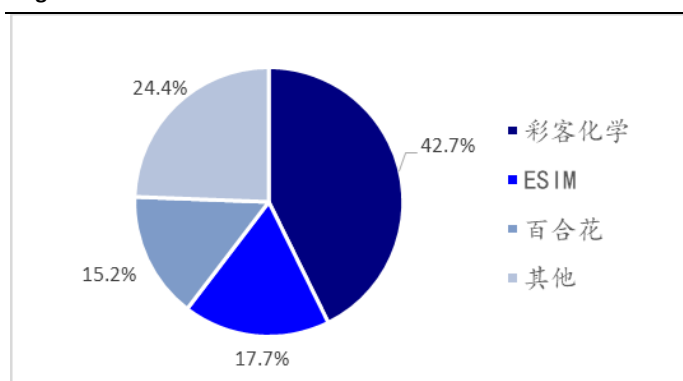
Source: Frost & Sullivan, HTI

Fig. 15 Forecast of DMAS Global Market Consumption (1000 Tons)



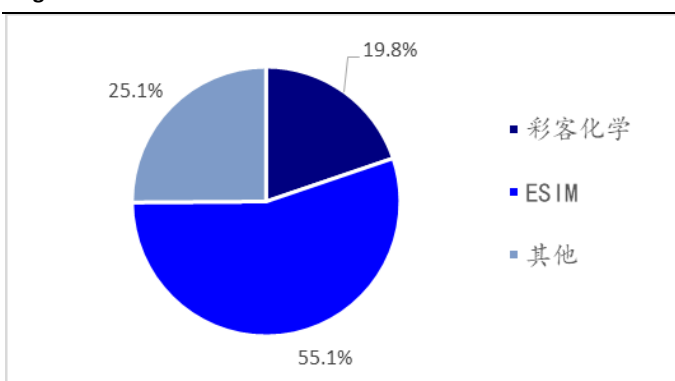
Source: Frost & Sullivan, HTI

Fig. 16 DMSS Global Market Share in 2016



Source: Frost & Sullivan, HTI
Tsaker Chemicals
Esim
Lily Chemicals
Others

Fig. 17 DMAS Global Market Share in 2016

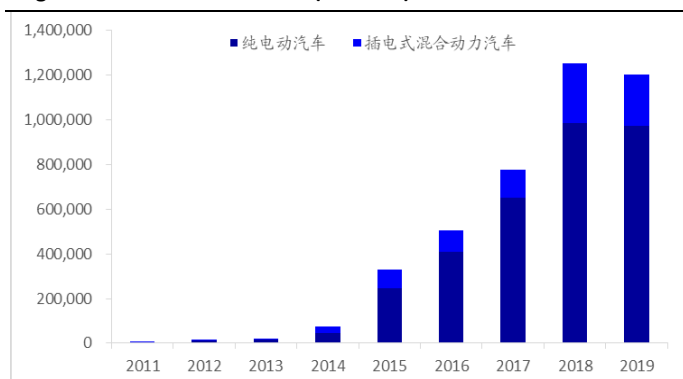


Source: Frost & Sullivan, HTI
Tsaker Chemicals
Esim
Others

5. Battery Material Business: Will Be an Important Business Segment of the Company in the Future

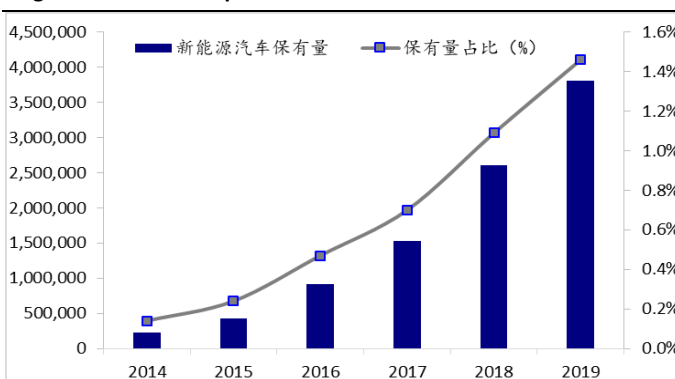
In recent years, under the dual promotion of China's policies and market, the innovation of NEVs has always been the theme of the automobile market. NEVs account for a large proportion of the starting products of various car companies, and the overall number of NEVs is also increasing year by year. According to WIND, China's NEV sales in 2018 exceeded 1.256mn units, up 61.7% from 777,000 in 2017. In 2019, the sales volume of NEVs in China was about 1.206mn units, a slight decrease of 4% YoY. As the end of 2019, China's NEV population and penetration rate reached 3.81mn units and 1.46%, up 46% and 36% respectively YoY.

Fig. 18 Sales of NEVs in China (Vehicles)



Source: wind, HTI
Pure electric vehicles, plug-in hybrid electric vehicles

Fig. 19 The Ownership of NEVs in China



Source: wind, HTI
The Ownership of NEVs, Proportion of Ownership

Battery material business will become an important business segment in the future. In terms of new business, the company began to lay out the R&D and production of iron phosphate, the precursor of new energy anode materials, in early 2017, and expanded the new energy products to carbon nanotube conductive paste and ternary anode material precursor products. The 15,000-ton iron phosphate product line built by the company in Cangzhou (Hebei) base has been put into production and supplied to downstream customers. As the iron phosphate industry is affected by the national NEV policy and downstream customers, the market sales price of iron phosphate products will continue to decline in 2018, and the industry is sluggish as a whole. The company

adjusted its strategy appropriately according to the market situation, and will focus on improving the internal competitiveness of core products in the next stage, waiting for the market to recover.

The production process of iron phosphate mainly includes synthesis, aging and sintering. The main raw material of iron phosphate is FeSO_4 , which is synthesized with phosphorus, ammonium and H_2O_2 , washed and filtered, and then enters the sintering section after subsequent dispersion, aging and drying, and then is packaged and sold in stages. The product process realizes zero emission of the three wastes, has stable process and stable product performance.

6. Environmental Protection Consulting Business: the Company Took Advantage of the Integration of the Chemical Industry to Speed up the Layout of Environmental Protection Consulting Fields.

With the increasingly severe environmental protection policies of the state and local governments, the speed of integration of the chemical industry has intensified, backward production capacity and enterprises that fail to meet environmental protection standards have been closed one after another, and the concentration of the industry has become higher and higher, benefiting leading enterprises. The company has benefited from this round of industry integration by virtue of its first-mover advantage in the field of environmental protection and has stabilized its position as a leading enterprise in the market. At the same time, based on many years of environmental protection experience in fine chemical industry, the company started environmental protection consulting services at the end of 2017, providing consulting services for air treatment, wastewater treatment and soil treatment to the outside world, and made rapid business breakthroughs, contributing revenue in 2018. The main technologies of the environmental protection consulting department include high-efficiency VOCs recovery technology, four-effect wastewater treatment, ecological energy wastewater treatment technology, etc.

7. Earnings Forecast and Rating

Profit forecast hypothesis: due to the global spread of the new crown virus, the company's profit in 2020 is expected to be affected to some extent. The price of DSD acid will remain at a relatively high level from 2020 to 2021. At present, the company still has some room for improvement in the utilization rate of mononitrotoluene. According to the progress of the company's construction project, we expect the 15,000-ton iron phosphate product line to be put into production around June this year, so the company's operating income will pick up in 2020, with a growth rate of 12.8%. In addition, the company's product price and GPM remained stable.

We expect the NPATs of the company from 2020 to 2022 to be Rmb353.31mn, Rmb415.14mn and Rmb454.98mn respectively, corresponding EPS to be Rmb0.34, Rmb0.40 and Rmb0.44. We give the company 4.7x target PE applied to FY20 EPS, corresponding to a reasonable target price of HK\$1.75, which, given the upside causes us to initiate with a "BUY" rating.

Table 3 Earnings Forecast

	2018	2019	2020E	2021E	2022E
Dye and agrochemical intermediates					
Revenue (Rmb mn)	1212.08	1509.63	1364.00	1520.00	1637.50
Cost (Rmb mn)	783.50	572.23	750.20	820.80	884.25
GPM (%)	35.36%	62.09%	45.00%	46.00%	46.00%
Pigment intermediates					
Revenue (Rmb mn)	262.48	263.19	240.00	255.00	270.00
Cost (Rmb mn)	173.56	163.87	168.00	173.40	183.60
GPM (%)	33.88%	37.74%	30.00%	32.00%	32.00%
Environmental protection consulting					
Revenue (Rmb mn)	38.32	37.09	38.95	41.28	44.17
Cost (Rmb mn)	31.87	28.14	31.16	33.03	35.34
GPM (%)	16.81%	24.14%	20.00%	20.00%	20.00%
Battery materials					
Revenue (Rmb mn)	3.01	8.44	42.00	84.00	87.50
Cost (Rmb mn)	2.86	13.16	39.06	78.12	81.38
GPM (%)	4.92%	-55.97%	7.00%	7.00%	7.00%
Total					
Revenue (Rmb mn)	1515.88	1818.35	1684.95	1900.28	2039.17
Cost (Rmb mn)	991.78	777.39	988.42	1105.35	1184.56
GPM (%)	34.57%	57.25%	41.34%	41.83%	41.91%

Source: the company's 2019 annual report, WIND, HTI

Table 4 Peers' Valuations

Tickers	Companies	Price (Rmb)	EPS (Rmb/share)			PE (x)		
			2019A	2020E	2021E	2019A	2020E	2021E
1907.HK	China Risun Group Ltd.	2.25	0.34	0.36	0.45	6.99	5.70	4.59
0546.HK	Fufeng Group	2.61	0.45	0.36	0.47	6.85	6.36	4.88
	AVG					6.68	6.03	4.74

Note: The closing price is 9 Apr, 2020, and EPS is from WIND.

Source: WIND, HTI

8. Risks

Demand for DSD acid and mononitrotoluene falls short of expectations; fluctuations in global oil prices lead to fluctuations in raw material prices; production of battery materials business increases less than expected.

Financial Statement Analysis and Earnings Forecast

Key Financial Indicators	2019	2020E	2021E	2022E	P&L (Rmb mn)	2019	2020E	2021E	2022E
Revenue	1,818.35	1,684.95	1,900.28	2,039.17	Revenue	1,818.35	1,684.95	1,900.28	2,039.17
Revenue growth (%)	19.95%	-7.34%	12.78%	7.31%	COGS	777.39	988.42	1,105.35	1,184.56
Total share capital (million shares)	1,038.40	1,038.40	1,038.40	1,038.40	Gross Profit	1,040.96	696.53	794.94	854.61
Attributable net profit	517.93	353.31	415.14	454.98	Other income – net	3.26	0.00	0.00	0.00
Growth (%)	132.36%	-31.78%	17.50%	9.60%	Operating expenses	248.74	210.62	237.54	254.90
EPS	0.50	0.34	0.40	0.44	Sales Expenses	44.91	42.12	47.51	50.98
P/E	2.69	3.94	3.35	3.06	Administration expense	188.36	168.49	190.03	203.92
P/B	0.54	0.49	0.41	0.35	R&D expense	0.00	0.00	0.00	0.00
Latest stock price (Rmb)	1.34	1.34	1.34	1.34	Other Expenses	15.47	0.00	0.00	0.00
BVPS	2.49	2.72	3.28	3.86	Operating profit	795.48	485.91	557.40	599.71
					Financing income	0.41	7.60	20.44	37.79
					Financing expenses	22.27	9.52	9.15	14.24
					Gain on equity investment	0.00	0.00	0.00	0.00
					Other non-operating G/L	-63.97	0.00	0.00	0.00
					Profit before income tax	709.64	483.99	568.68	623.26
					Taxation	191.36	130.68	153.54	168.28
					Consolidated statement net profit	518.28	353.31	415.14	454.98
					Net profit attributable to shareholders	518.28	353.31	415.14	454.98

Cash flow (Rmb mn)	2019	2020E	2021E	2022E
Net profit	517.93	353.31	415.14	454.98
Minority interests	0.36	0.00	0.00	0.00
Non-cash expenses	70.63	79.26	75.37	71.80
Non-operating income	36.76	9.52	9.15	14.24
Change in working capital	-60.40	48.00	-31.17	-19.98
Operating cash flow	564.92	490.09	468.48	521.03
Assets	-174.18	0.00	0.00	-9.16
Investment	-46.66	0.00	0.00	0.00
Others	7.12	0.00	0.00	0.00
Investing cash flow	-213.72	0.00	0.00	-9.16
Proceeds from debt issuance	-323.03	100.00	100.00	100.00
Proceeds from equity issuance	-7.88	0.00	0.00	0.00
Others	-38.73	-293.44	-9.15	-14.24
Financing cash flow	-369.64	-193.44	90.85	85.76
Net cash flow	-19.43	296.66	559.33	597.63

Balance sheet (Rmb mn)	2019	2020E	2021E	2022E
Cash	104.84	401.50	960.83	1,558.47
Accounts and notes receivable	473.48	443.41	500.07	536.62
Inventory	274.21	329.47	368.45	394.85
Other current assets	3.90	4.94	5.53	5.92
Total current assets	856.42	1,179.32	1,834.89	2,495.87
Long-term equity investment	51.23	51.23	51.23	51.23
Fixed-assets	1521.32	1445.25	1372.99	1304.34
Construction in process	106.63	103.43	100.33	106.34
Intangible assets	10794.11	10600.96	10467.26	10425.13
Total non-current assets	12,473.29	12,200.88	11,991.81	11,887.05
Total assets	2,581.40	2,825.04	3,405.23	4,003.58
Short-term borrowings	283.92	0.00	0.00	0.00
Accounts and notes payable	283.27	366.08	409.39	438.73
Advance from customers	42.85	43.81	49.41	53.02
Other current liabilities	135.90	126.37	142.52	152.94
Total current liabilities	745.94	536.26	601.32	644.68
Long-term borrowing	29.89	129.89	229.89	329.89
Other long-term debts	39.14	39.14	39.14	39.14
Total non-current liabilities	69.02	169.02	269.02	369.02
Total liabilities	814.96	705.28	870.34	1,013.71
Paid-in capital	67.09	67.09	67.09	67.09
Equity to common shareholders	1,766.17	2,119.48	2,534.62	2,989.60
Equity to minority shareholders	0.28	0.28	0.28	0.28
Total liabilities and shareholders' equity	2,581.40	2,825.04	3,405.23	4,003.58

Note: The closing price date for calculating the valuation index in the table is 09 Apr.
Source: the company's annual report, HTI

APPENDIX

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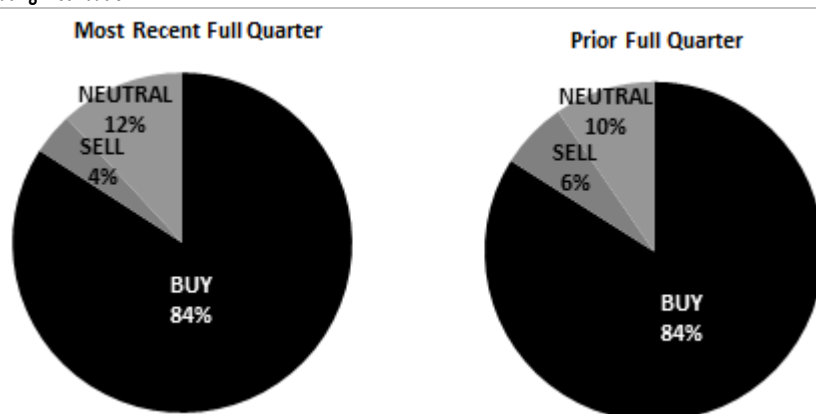
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