

U.S. International Trade Commission
Persulfates from China
January 16, 2014

Testimony of Amy Warlick, Barnes, Richardson & Colburn,
International Trade Economist

Good morning, Commissioners and Staff, my name is Amy Warlick and I am an International Trade Economist with Barnes, Richardson & Colburn.

Now that you have heard all that Mr. Lerner, Mr. Ball, and Mr. Norton have told you about the U.S. persulfates industry, its employees, and its markets, I would like to ask you to back-up a bit and look at this industry from a more macro, global level. While you have just heard that the U.S. industry has been relatively stable with respect to capacity, production, and demand, the very opposite is true of China.

The Commission has not received many questionnaire responses from Chinese producers, so it is more difficult in this investigation than most to gauge the threat posed by China. To help fill-in some of the blanks, FMC has hired a consulting firm to track the capacity and

production of China's persulfates industry. We have provided their report to the Commission as an attachment to FMC's producers' questionnaire. The report details the truly exceptional growth of the Chinese persulfates industry. From 2006 to 2012, China's persulfates production capacity is estimated to have grown by 79 percent, as seen in EXHIBIT 1. Then, despite a fairly low capacity utilization rate of only 77 percent in 2012, Chinese producers again expanded their capacity in 2013 by 49 percent. Again, that's 49 percent in 1 year. While FMC's Tonawanda plant was the largest persulfates producer in the world during the last sunset review, it has now been surpassed by several Chinese firms.

Admittedly, some of this expanded capacity has been added to serve China's growing demand for persulfates, especially in the printed circuit board manufacturing sector. However, China's economy is not growing fast enough to absorb all of this new capacity. China's printed circuit board production rebounded in 2010 after the recessionary dip in 2009; however, growth has slowed significantly over the past 3 years, as seen in EXHIBIT 2.

China's annual industrial production grew 10 percent in 2013 and its GDP grew less than 8 percent. Relatively speaking, these figures are impressive, but still they do not justify a 49 percent increase in China's persulfates capacity in one year.

At this point in time, China has the capacity to produce a quantity of persulfates which is more than 13 times the size of U.S. persulfates consumption. This is illustrated in EXHIBIT 3. These volumes may seem a bit unbelievable, and they have certainly commanded the attention of FMC executives, but they are real, and they cannot be overlooked. For greater detail on the individual firms that contribute to these capacity figures, please review the consultant's report. In addition, you can research the websites of these companies yourselves to see evidence of the tremendous expansion that is currently taking place in China.

For instance, EXHIBIT 4 shows the advertised production capacity of Hebei Jiheng Goup. These figures represent a doubling of their 2006 capacity. In another example, EXHIBIT 5 details Zhan Hua Chemical Company's expansion plans. Our consultant reports that Zhan Hua has

already expanded its 2013 capacity to 50,000 metric tons. Zhan Hua states here on their website that the second phase of their ongoing construction project will bring their annual production capacity to 75,000 metric tons. For comparison purposes, 75,000 metric tons is equivalent to 165 million pounds, and more than 3 times the weight of annual U.S. consumption of all persulfates.

As illustrated in EXHIBIT 6, the rapidly growing persulfates capacity and production in China have resulted in a tremendous surge in Chinese exports to Asian, Middle Eastern, South American and a wide variety of other world markets, especially during 2011 and 2012 when Chinese economic growth began to slow down.

In a sunset proceeding such as this, it is not often that the Commission has the advantage of observing real life historical experience to learn what would actually happen should the orders be revoked. However, in this case, the Commission can observe the experience of the EU when it revoked its antidumping order on persulfates from China.

The EU issued an ADD order on persulfates from China in 1995, then revoked that order in early 2002. As seen in EXHIBIT 7, following revocation, Chinese persulfates exports to the EU jumped from less than a million pounds in 2001, to 11 million lbs in 2003, and 26 million lbs in 2006. This flood of dumped imports depressed then suppressed EU prices at a time of rising raw material costs, causing material injury to EU manufacturers. So, a new EU antidumping investigation was initiated in June 2006, and a new order was imposed in October 2007.

The reimposition of the EU antidumping order had immediate and dramatic effects. Chinese exports to the EU fell from 26 million lbs in 2006, to 13 million lbs in 2008, then 9 million lbs in 2010 and 2012. The EU initiated a sunset review of this order in October 2012, and determined last month that revocation of the order would likely lead to a continuation or recurrence of injury. The EU order remains in place with a China-wide rate of 72 percent.

When we compare the situation in the United States with that in the EU, it becomes painfully obvious that there is nothing that would prevent the same fate in the United States if the U.S. order is eliminated.

Furthermore, because of all the Chinese persulfates that have now been diverted out of the EU market, as well as those diverted out of India due to their order against Chinese persulfates, there is every reason to believe that the fate of the United States would be far worse than that of the EU.

U.S., German, Japanese, Taiwanese, and Indian persulfates producers compete with each other on a relatively fair playing field in the both United States and abroad. However, FMC simply does not stand a chance when up against the threat of ever-expanding Chinese producers. That is because the Chinese persulfates industry is different from others around the world in that it is not entirely profit-seeking. The astounding growth in the Chinese industry has resulted from forces that extend well beyond the market. In 2013, 5 of the 8 largest producers in China, and 43 percent of China's production capacity was wholly-owned by the Government of China. While the capacity of privately-held producers in China grew 126 percent between 2006 and 2013, the capacity of government-owned Chinese producers grew by a staggering 246 percent, as illustrated in EXHIBIT 8.

The phenomenon of over-capacity and over-production in China has been witnessed time and time again in other industries, for instance the solar cell and module industry which the Commission continues to investigate. While the motives for this ever-expanding industrial behavior by the Government of China is the subject of much speculation and debate the world over, most experts concur that the Chinese Government directly and indirectly encourages the maximization of jobs, production, and exports, as goals in and of themselves, whether or not they lead to profits. There is often also an incentive in China to maximize consumption of overproduced chemical feed stocks, like sulfuric acid, in industries like persulfates that are backwards integrated with their chemical raw materials.

In the particular situation of persulfates, however, Chinese over-capacity and over-production is even more likely to lead to dumping because of the very nature of persulfates, which have a limited shelf-life. Over time, persulfates crystals “cake” together and begin to decompose. This generally occurs about 6 months after production. When “caking” occurs persulfates become unusable, and can become unstable. Because

they are strong oxidizers, unstable persulfates can ignite if exposed to friction, heat, water or combustible materials. So, all persulfates have a shelf-life that must be respected. Many industries face such inventory issues with perishable products. Dairy comes to mind, as we all know what happens when milk is past its prime. However, milk will simply spoil with age; it will not ignite or explode. If not handled properly, however, aged persulfates can and have caused highly destructive factory and warehouse fires.

FMC, therefore, manages its production, inventories, and storage facilities with utmost caution. Any inventories that come near their expiration dates are generally reworked into other products, as disposal of caked persulfates is subject to regulations which make it cost-prohibitive. However, the process of reworking caked persulfates into other products is also expensive, so all precautions are made by FMC to ensure that persulfates inventories are maintained within stringent guidelines.

In China, however, there appears to be much less concern about over-producing this limited shelf-life product. Certainly, Chinese

producers are aware of the fire risks associated with storing aging persulfates. However, their solution to this problem is very different. Their solution is to offer their oversupplies onto the world market at prices low enough to ensure that a global buyer is found quickly before the persulfates begin to age. Their vast output is priced to sell no matter how low world prices fall. This behavior is necessary and endemic for an industry that consistently over-produces a product that becomes volatile with age.

Since there were few U.S. imports of persulfates from China during the period of review, the Commission has very few Chinese prices on the record upon which to reflect. So, I will point you to the prices Chinese suppliers are advertising on e-Commerce portals such as Alibaba, ChinaChemNet, and TradeKey. Our last query on Alibaba turned-up literally thousands of persulfates offerings from hundreds of Chinese suppliers. While there are always redundancies on sites such as these, it is clear that Chinese suppliers participate heavily in online spot market sales.

EXHIBIT 9 shows persulfates prices offered online by Chinese companies in December 2013. As you can see, several Chinese trading companies were offering ammonium persulfates on Alibaba at prices ranging from 7 to 18 cents per pound. Such prices would not even cover FMC's raw material costs. Other Chinese suppliers, including Zhan Hua whose expansion I just discussed, were offering ammonium persulfates for 29 to 34 cents per pound. These prices do not approach FMC's full costs of production, and likely do not approach China's costs of production either. Still, Chinese suppliers keep increasing their persulfates production to utilize the costly capacity they have built. Then they push these persulfates onto the market at these low prices because they cannot afford the risks of holding them in inventory until a better price can be found. Their persulfates are not priced for profit, they are priced to move fast. They are being dumped.

After a decade of recovery following the initial imposition of the order, FMC had some profitable years during which it was able to achieve "reinvestment economics." FMC used its proceeds wisely to

update and expand its infrastructure to respond to anticipated customer demand, and to invest in its labor force.

However, 2013 has been a sobering year for FMC's persulfates business. In the interim 2013 period, U.S. persulfates consumption is down, as are FMC's prices. FMC's production is down, its shipments are down, its U.S. market share is down, and its ending inventories are up. FMC's costs are up, and its operating margins are down. Its productivity is down and its capacity utilization is down, too. In short, by every standard measure that the Commission employs to assess industry health, the U.S. industry has lost ground. Quite frankly, even the healthiest domestic industry would be vulnerable to recurrence of injury in the face of such extreme overcapacity in China. However, given the recent downturn, FMC would now be particularly vulnerable to material injury in the wake of revocation.

FMC is currently faced with intense price competition, weakening market demand, price erosion, escalating costs, and encroachment by new market entrants, all of which make its market position precarious.

This is an industry where one can never rest. Markets are fickle and can disappear overnight.

As the Staff Report indicates, persulfates sales to the polymer industry represent about half of FMC's total sales volume. Demand in the polymerization market has been stagnant due to the continued downturn in the market for new housing, as seen in EXHIBIT 10. This is because the market for new housing has a heavy influence on demand for adhesives, upholstery, carpeting, paints, and other polymer-containing materials used in new home construction.

While FMC has only recently recovered from the loss of persulfates sales into the nearly extinct U.S. printed circuit board industry, it also suffered the loss of the pool shock chemicals market starting in 2012. This market represented a significant portion of FMC's persulfates sales volume in 2012, but persulfates were abruptly displaced from this market by other chemicals due to a change in pool sanitization technology.

The experience of the lost pool shock market is not uncommon in this industry. Market demands evolve and adapt to ever-changing

technologies and industry migrations. FMC is rightfully concerned about the future prospects for persulfates in the oil and gas recovery market. Horizontal drilling technology is quickly evolving to drive down costs and increase productivity, while responding to the changing hydrogeological needs of various U.S. shale formations.

The use of persulfates as gel breakers in oil and gas recovery is tied to the use of guar gum to produce the gels. A recent drought in India caused a world-wide shortage of guar gum in 2012, and a surge in guar prices. The drought also caused many end users to question their reliance on guar and switch to “slickwater”/guar hybrid fracturing fluids, which require less guar, hence, fewer persulfates. So, while guar gum production will likely stabilize and grow again over time, some of the damage from this short supply incident is permanent and will suppress demand for persulfates in oil and gas recovery going forward.

FMC has been in this business long enough to know that it must always stay on top of its game and can never relax, because the floor could drop-out of today’s markets at any moment. FMC can never take

its focus off of the research and development that yields future customers, applications, and markets.

After many difficult years, FMC finally had some good years during the period of review; good years that would have never been possible without the relief provided by the antidumping order.

However, FMC has never used the relief that the order has provided as a crutch or shield behind which to become static and uncompetitive. On the contrary, during these good years, FMC reinvested in the future of persulfates by upgrading portions of its Tonawanda plant to improve productivity, safety, capacity, and quality. However, FMC is increasingly concerned about whether their returns on capital will meet the expectations that triggered their decision to invest in the upgrades. At this particular juncture, with the loss of the printed circuit board and pool chemicals markets, disappointing sales in oil and gas recovery, continued slack demand for polymers, and ever-rising costs of raw materials, FMC is, perhaps, more vulnerable than it has been in many years.

The U.S. persulfates industry provides about 100 skilled, high-paying jobs largely in the Buffalo/Tonawanda area, which has experienced an exodus of steel and auto sector jobs in recent decades. FMC is not only the last remaining U.S. persulfates manufacturer, it is a leader in developing new applications and improving the performance of persulfates in existing applications. Persulfates are used in a wide variety of applications that support hundreds of downstream U.S. manufacturers, oil and gas companies, and important environmental remediation projects. It is important for the United States to maintain a domestic supply of persulfates for these important purchasers. Continuation of this order will not only preserve this important U.S. industry, but it will preserve competition in the United States from third-country producers in the EU, Japan, Taiwan, and India, who also stand to be displaced in the U.S. market by China if the antidumping order is revoked.

This order is even more critical to the survival of the U.S. industry now than it was in 1997 because of the vast production capacity expansion that has taken place in China, and the increased foreign

barriers to Chinese persulfates that will divert excess Chinese production volumes into the U.S. market at rock bottom prices designed to achieve rapid sales and reduce the inherent risks of storing aging persulfates.

The Chinese producers are not here for good reason. They know the score. They know to what extent their industry is expanding, they know what they are capable of producing, and they know the fate of the U.S. industry should the order be revoked. They are fully aware of the extent to which they undersell FMC in foreign markets. They also know that they can produce any type of persulfates that FMC can produce. They have acquired the technology to encapsulate persulfates when an application such as oil and gas recovery requires encapsulation.

EXHIBIT 11 shows an online advertisement for encapsulated ammonium persulfate breaker by Qingdao iPolymer Chemicals in Shandong, China. The Chinese also already sell into the environmental remediation markets both in China and abroad.

In short, the Chinese know that any information they provide to the Commission can only hurt their position. Thus, they have decided to

provide almost nothing. We believe that the Commission is fully-justified in making adverse inferences regarding the failure of nearly all foreign producers to respond to information requests from the Commission.

I would be happy to answer any questions the Commissioners or staff may have. Thank you for your attention and the opportunity to explain this global industry and FMC's support for continuation of this order.

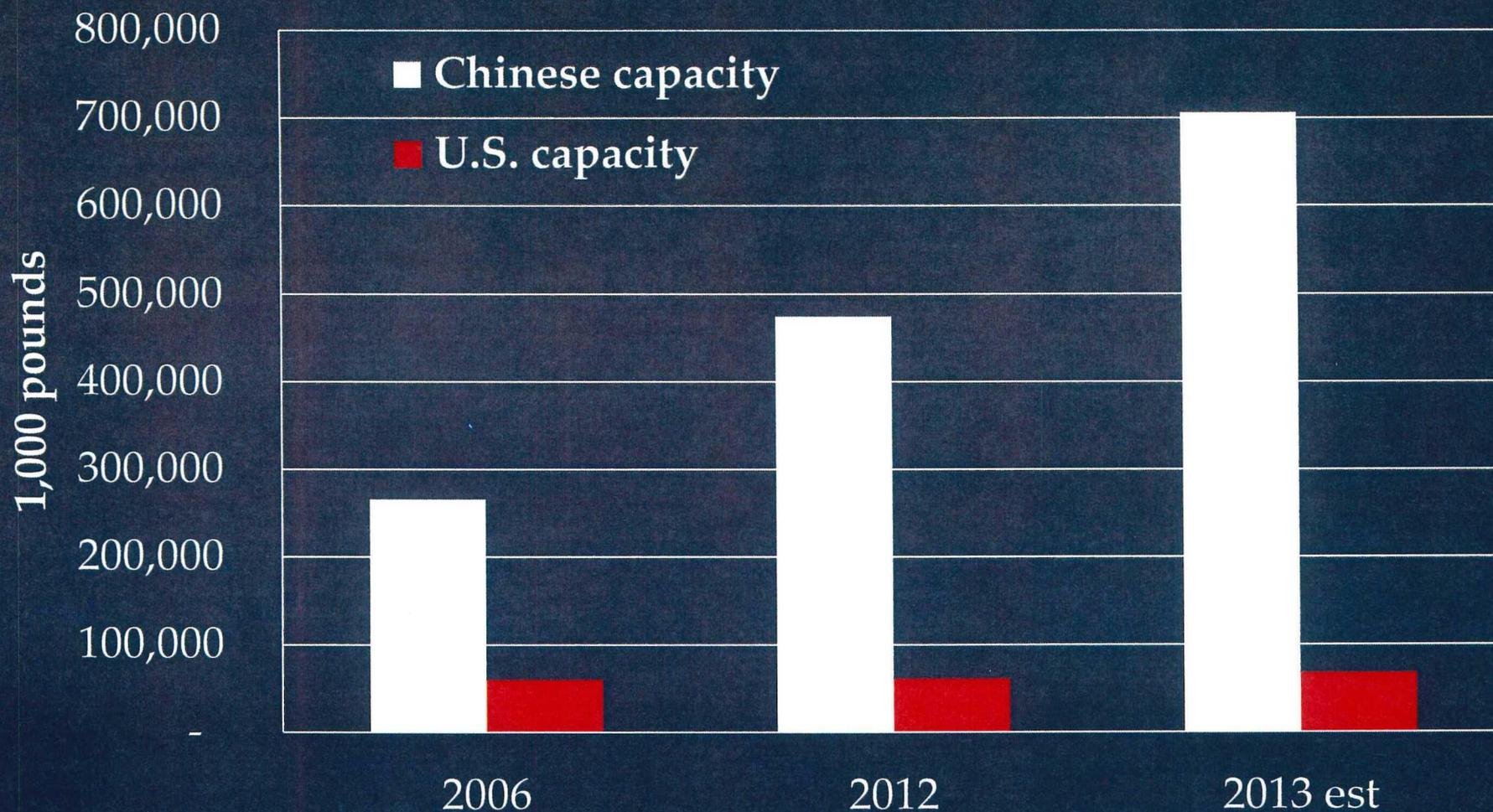
PERSULFATES FROM CHINA

{ Testimony of Amy Warlick
{ Before the U.S. International Trade Commission

January 16, 2014

EXHIBIT 1

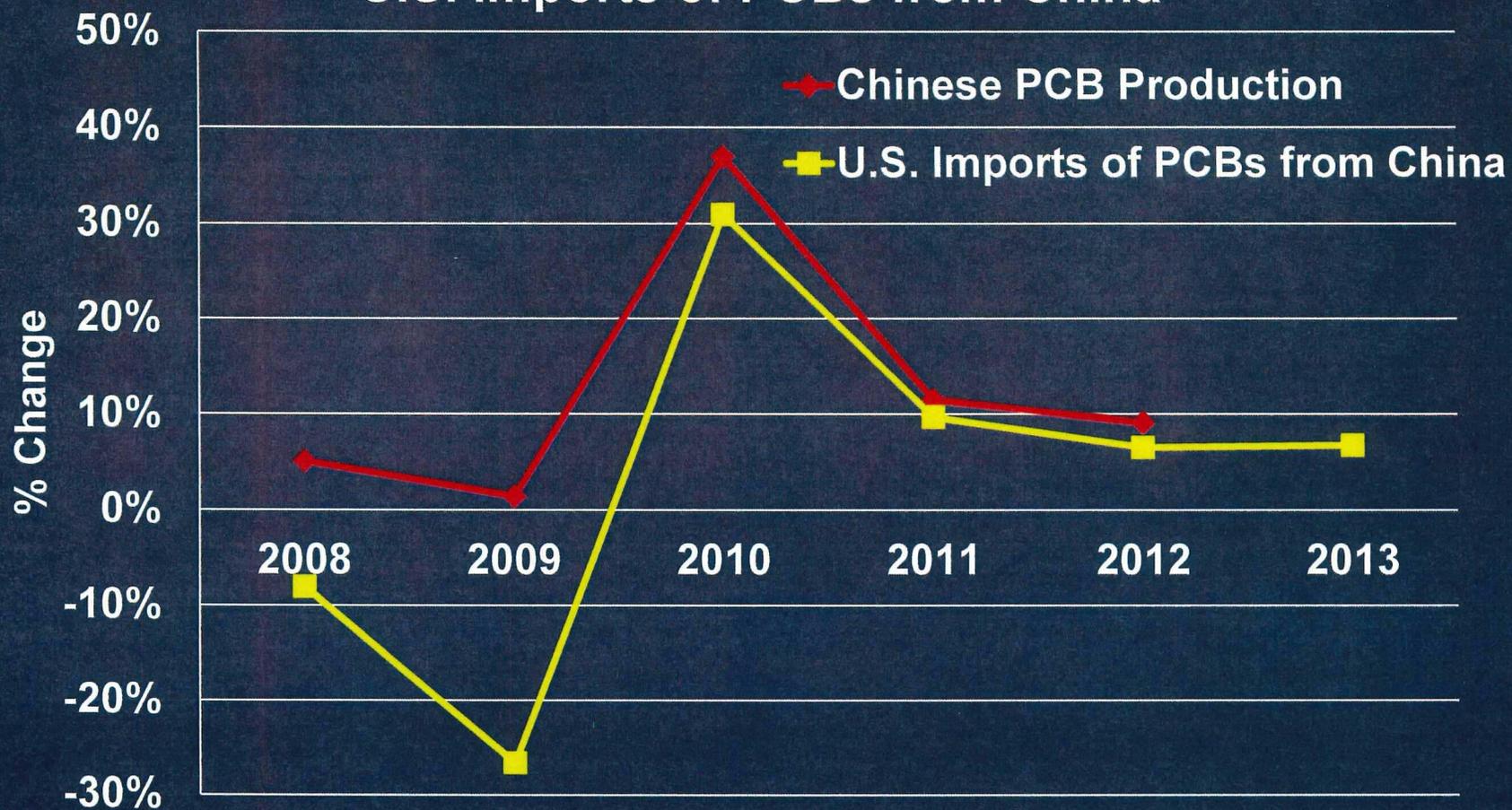
Persulfates Production Capacity Comparison



Source: Consulting firm report, and FMC.

EXHIBIT 2

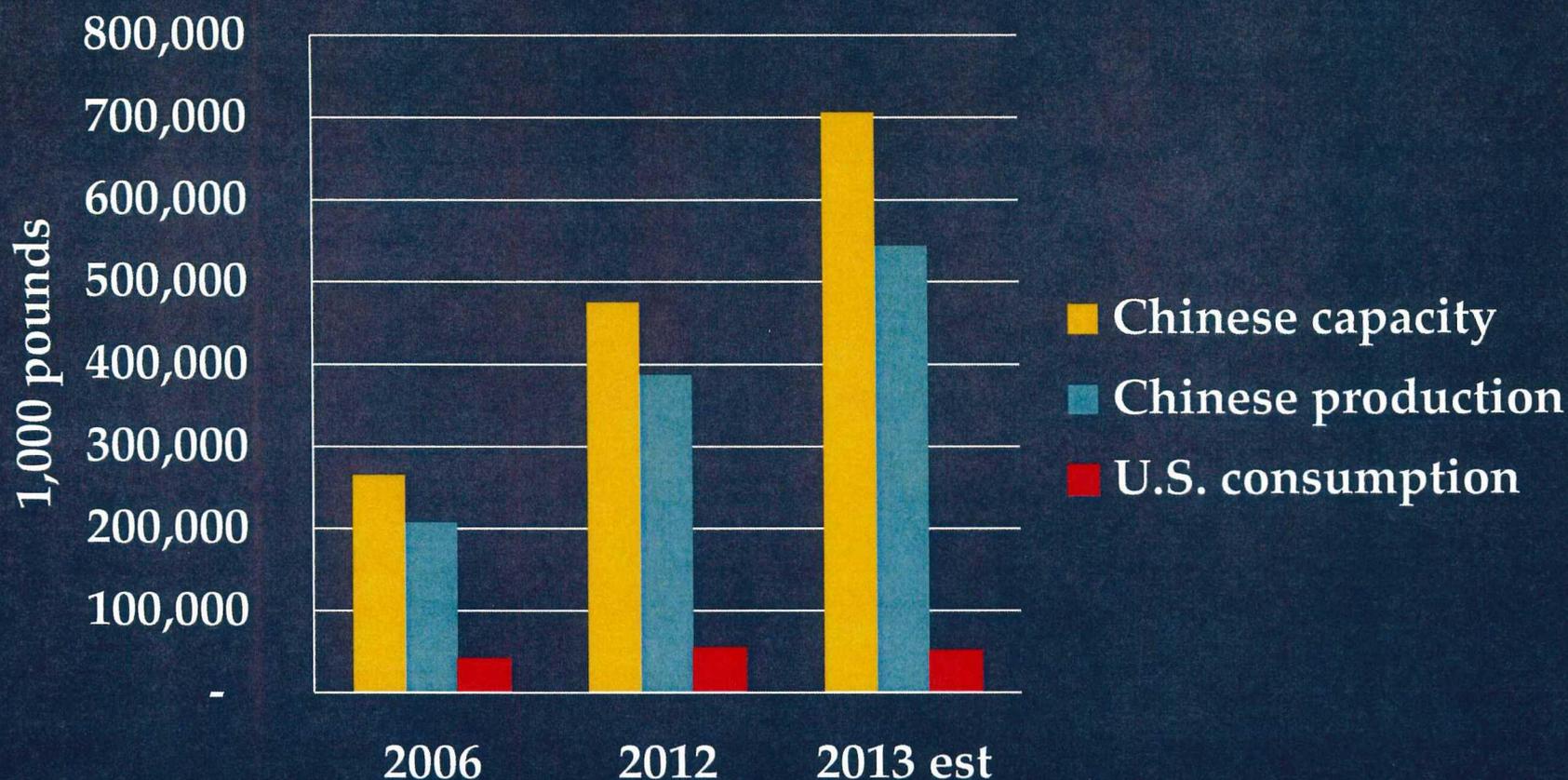
Annual Percentage Change in the Value of Chinese PCB Production and U.S. Imports of PCBs from China



Source: N.T. Information Ltd. and official U.S. import data from the U.S. Department of Commerce under subheading 8534.00.

EXHIBIT 3

The Chinese Persulfates Industry Compared With U.S. Persulfates Consumption



Source: Chinese data from consulting firm report (2013 production figure estimated based on assumption of 77% capacity utilization); U.S. consumption based on FMC shipments in U.S. and official U.S. imports under 2833.40 from China, Germany, India, Japan, Taiwan, and Turkey (2013 figures estimated based on interim period changes).

EXHIBIT 4

Hebei Jiheng Group Co. advertising their annual capacity to produce:

- 20,000 mts Ammonium Persulfates
- 16,000 mts Sodium Persulfates
- 8,000 mts Potassium Persulfates.

Hebei Jiheng Group CO. LTD - About US Page 1 of 1

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Company picture

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Country: China (Mainland)
Business Type: Manufacturers
Inquiry: 800
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Ms Sophia Liu
Tel: 86-310-2147365 / 31032486
Fax: 86-310-2147365
URL: <http://www.jihenggroup.com>
Phone Number: 7946
City: hengshui
Street: Zhonghua Street180-299
MapCard



E-Mail Supplier
Click Search to send inquiry

CAS No: 1 2 3 4 5 6 7 8 9 50-00-8 To: 1540426-95-6
Chemicals: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9
Hot product: 1 2 3 4 5 6 7 8 9

About us

Welcome To Our Site!

This is Hebei Jiheng Group CO.LTD, the largest manufacturer in China for the AMMONIUM PERSULFATE, SODIUM PERSULFATE AND POTASSIUM PERSULFATE. Widely used as initiator for the polymerization of monomers and as strong oxidizing agent in many applications.
Have the annual production capacity is as follows:
Ammonium persulfate is 20,000 mt.
Sodium persulfate is 16,000 mt.
Potassium persulfate is 8,000 mt.
and have been exported to European union, Southeast Asia, South of America and over 40 countries and areas and get good reputation.

Hebei Jiheng Group CO. LTD.
Tel: 86-310-2147365 / 31032486 / 31032487
Address: Zhonghua Street 180-299 Hengshui

<http://www.jihengsophia.lookchem.com/About.html> 12/18/2013

EXHIBIT 5

“After the completion of the second phase of the ongoing construction project, the company will achieve annual production capacities of over 75,000 tons of Ammonium Persulfate, 50,000 tons of Sodium Persulfate, and 12,000 tons of Potassium Persulfate.”

ZhanHua Chemical Co.



Zhan Hua 展华化工
Fujian ZhanHua Chemical

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Company

Fujian ZhanHua Chemical Co., Ltd. was established in 2004, with a registered capital of 30 million yuan. Being a key enterprise of Fujian Province, the company specializes in manufacturing a series of potassium products. It has the largest specialized industrial park of potassium in China, covering an area of 800,000 square meters, including the first and second stages of project. The company's production capacity of Ammonium Persulfate (APS) is 30,000 tons per year, and 20,000 tons annually for Sodium Persulfate (SPS).

The company is located in the scenic east part of China, Dinglu County, Shennong City, which enjoys superior natural conditions and rich resources. The above supply of electricity and the pure water resources provide unique favorable conditions for the company to produce high quality potassium fertilizers. The superior geographical location ensures the timely delivery of products.

The company has a professional technical team and management talents. Taking advantage of its experience with international standards and Chinese regulations, the company has established and executed a highly strict quality management system. The company has passed the certification of ISO9001:2008 Quality Management System and obtained Quality Management System certificate in multiple times. It also has the Agrifood Advanced Unit of both provincial and municipal levels for of Tianshan in Shennong and the Local Administration of Tianshan. Equipped with advanced technology and production equipment as well as high-recovery laboratory instruments, every production process is under well control from the raw materials supply qualification until products delivery.

The Company supplies to our customers in Chinese and international market with stable high quality products and advanced system solutions for a wide variety of sectors including polymers, PCB, textiles and color, pharmaceuticals, water treatment, etc.

Sticking to its business philosophy of "Honest Operation, Top Quality, Safety and Environment Protection and Continuous Innovation", the company focuses its efforts on creating a first-class brand. After the completion of the second phase of the ongoing construction project, the company will achieve annual production capacities of over 75,000 tons of Ammonium Persulfate, 50,000 tons of Sodium Persulfate, and 12,000 tons of Potassium Persulfate.

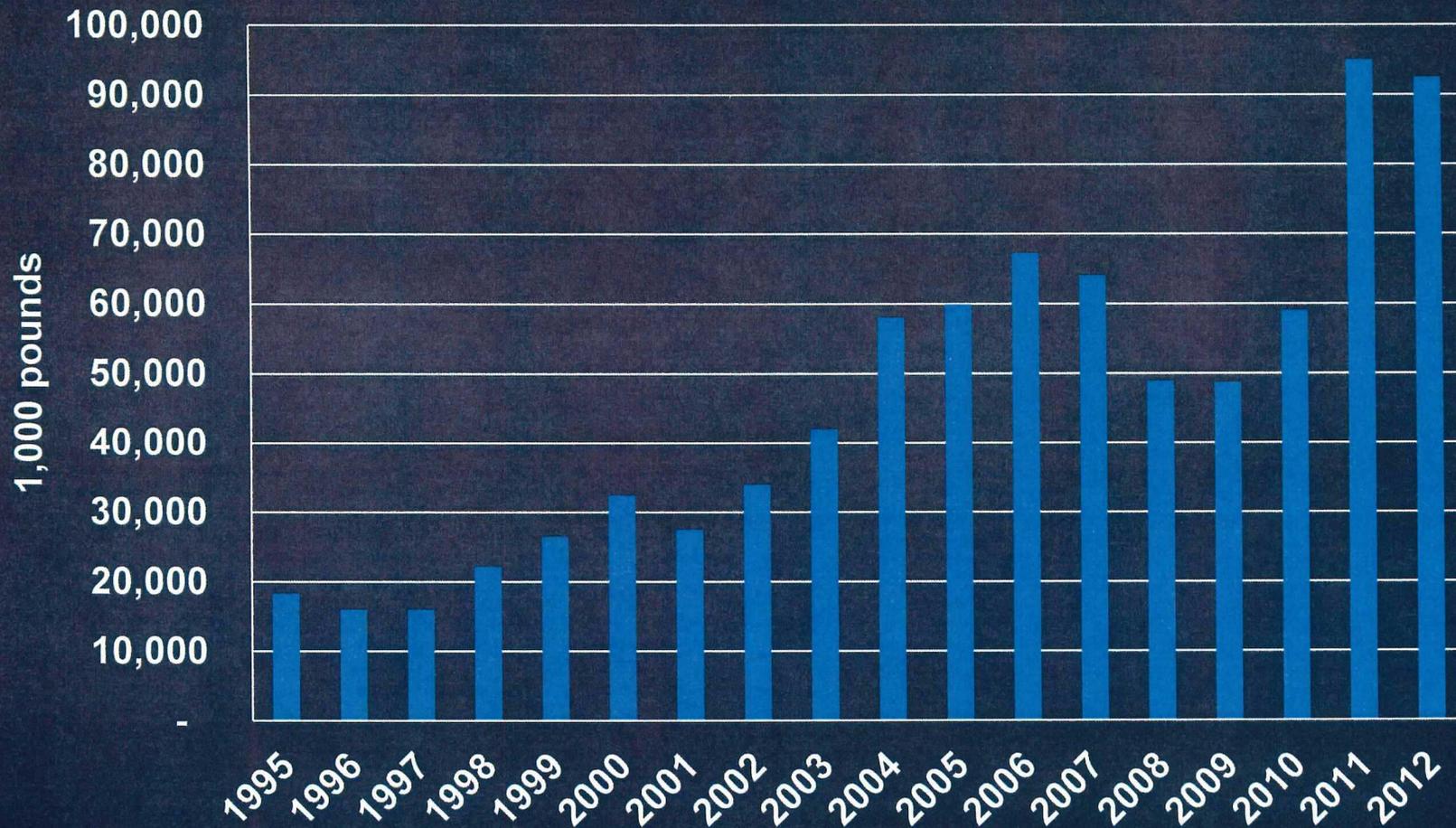
As a responsible enterprise, ZHAN HUA has consistently focused its attention on the development of process technology, products and service quality. We sincerely expect to assist you to improve work efficiency and reduce costs. Our innovation products help and maintain our customers' leading edge in their own markets.

Mission and Objectives

- Committed to become the industry leader of Potassium.
- Committed to maximize values for our customers and help them to build competitive advantage.
- Committed to grow together with employees and create a good development environment for them.
- Committed to improve the environment, health, quality and safety conditions on a long-term basis.

EXHIBIT 6

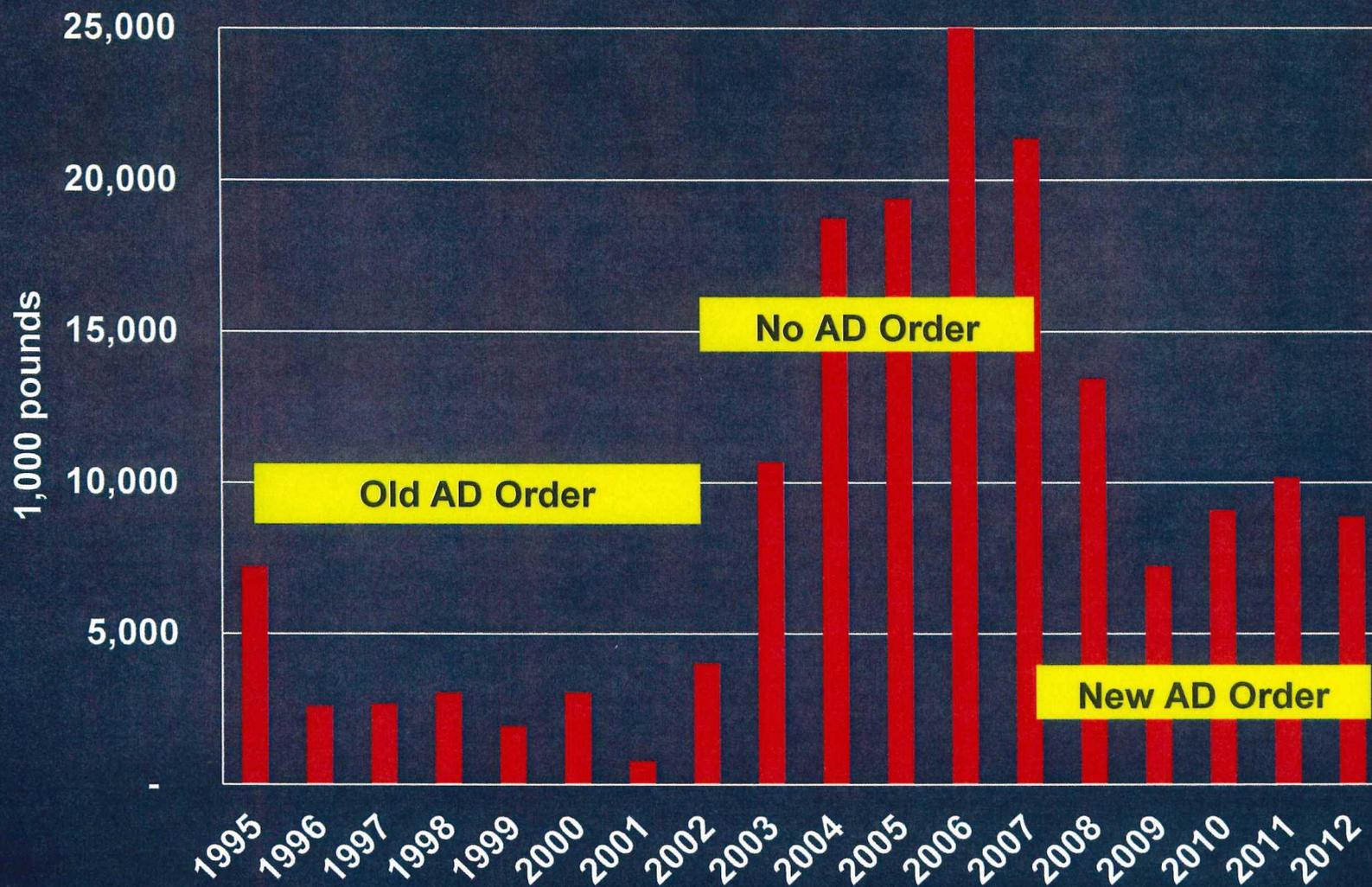
Chinese Persulfates Exports to World



Source: Official export statistics of China, from Global Trade Information Services.

EXHIBIT 7

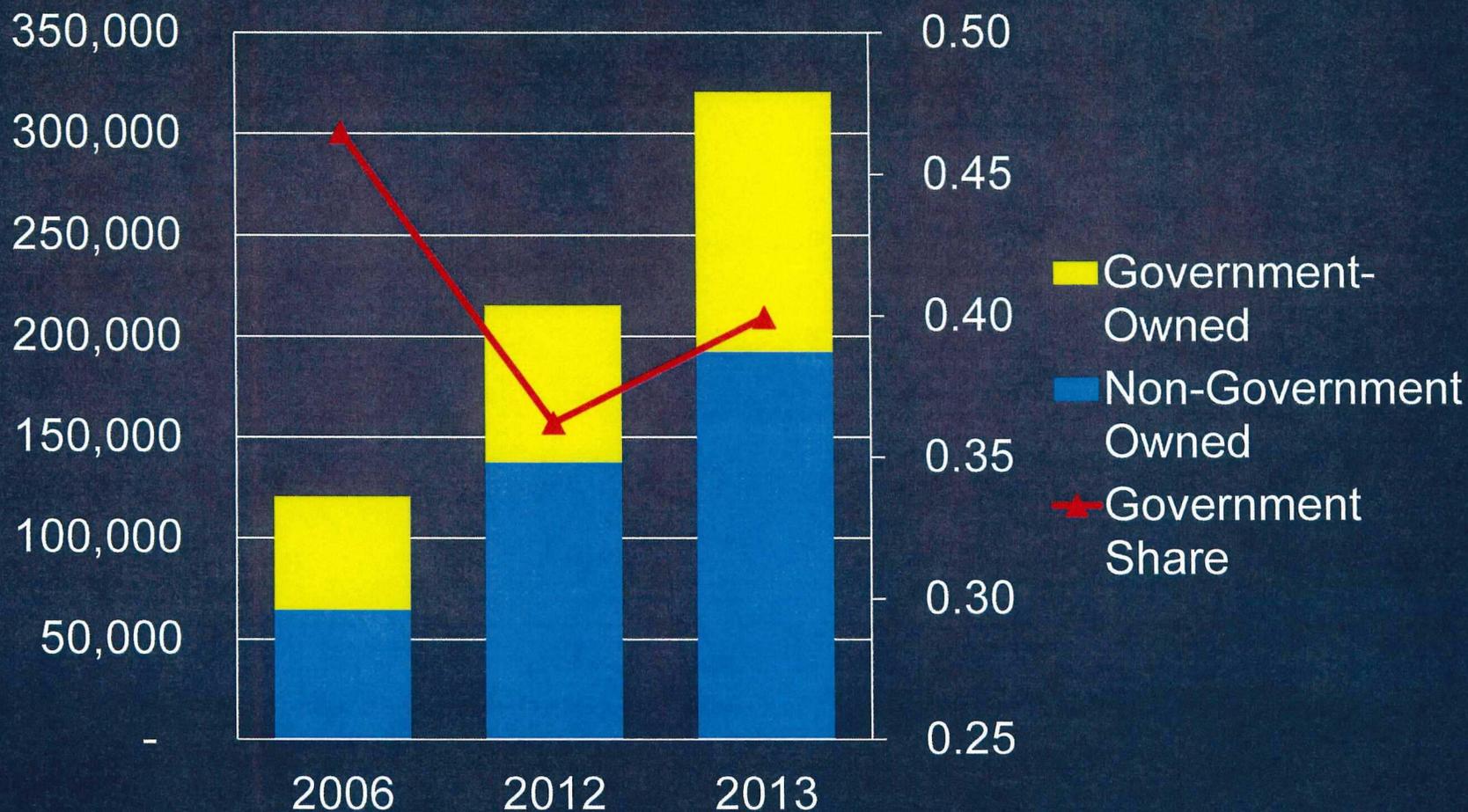
Chinese Persulfate Exports to the EU



Source: Official export statistics of China, from Global Trade Information Services.

EXHIBIT 8

Chinese Government Role in Persulfates Production Capacity Expansion



Source: Consulting firm report.

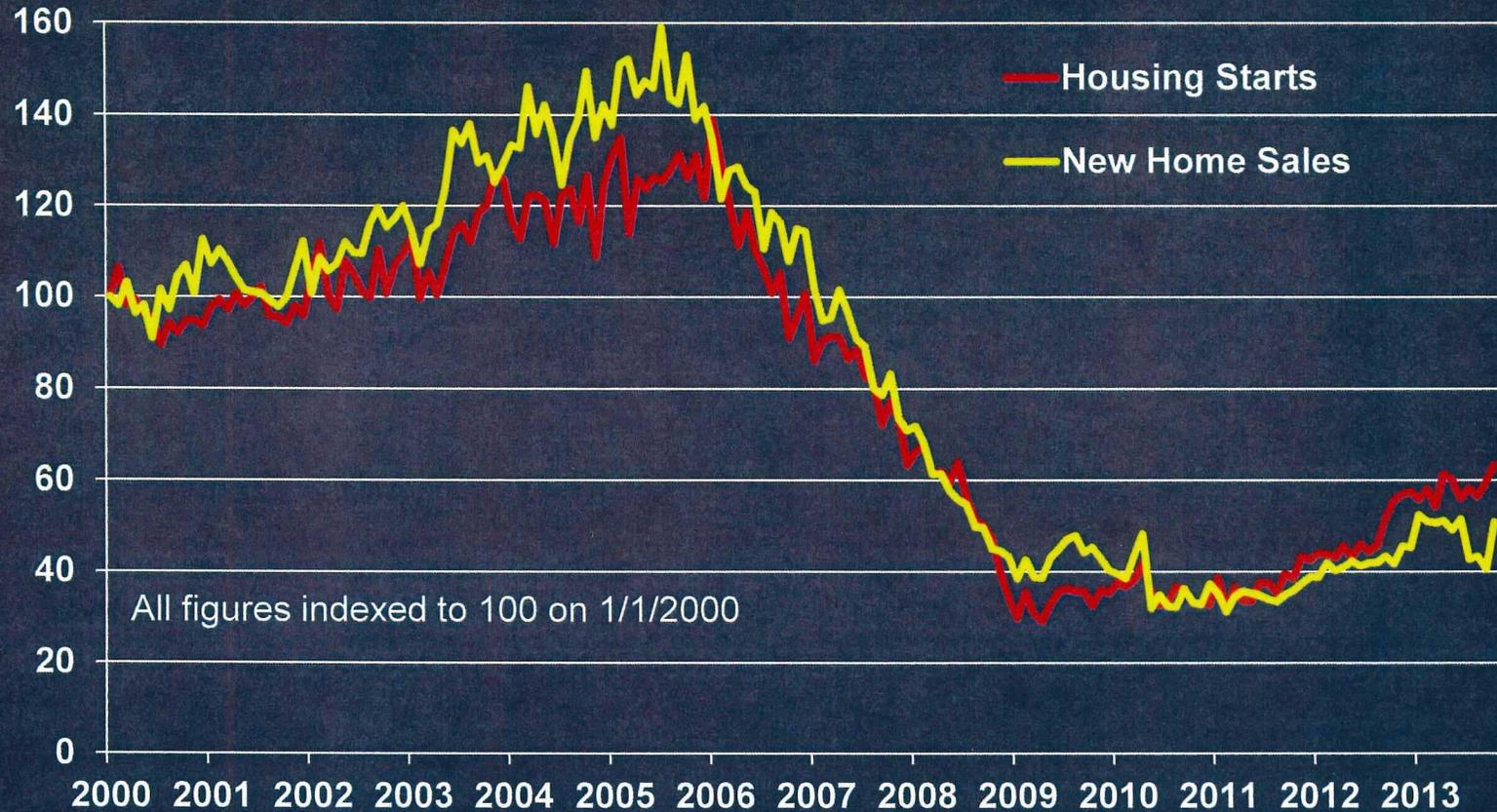
EXHIBIT 9

Chinese Persulfate Prices on Alibaba e-Commerce Portal

| | Seller Type | Price Advertised | |
|--|----------------------------------|------------------|------|
| | | Low | High |
| | | \$/lb | |
| Product 1 - Potassium Persulfates | | | |
| SJZ Chenghui Chemical Co. | trading company | 0.45 | 0.91 |
| Henan Tianfu Chemical Co. | trading company | 0.54 | 0.91 |
| Product 2 - Ammonium Persulfates | | | |
| Hebei Shengweilong Commercial & Trade Co. | manufacturer/ trading company | 0.07 | 0.10 |
| Tianjin Ruifengtiantai International Trade Co. | trading company | 0.13 | 0.16 |
| Shandong Hao Na Import & Export Co. | trading company | 0.14 | 0.18 |
| Dalian Taikang Chemicals Co. | trading company | 0.29 | 0.32 |
| Sanming Zhan Hua Chemical Industrial Co. | manufacturer | 0.31 | 0.34 |
| Product 3 - Sodium Persulfates | | | |
| Wuhan Gains Chemical Co. | trading company | 0.32 | 0.45 |
| Tianjin Ruifengtiantai International Trade Co. | trading company | 0.43 | 0.45 |
| Sanming Zhan Hua Chemical Industrial Co. | trading company | 0.43 | 0.46 |

EXHIBIT 10

U.S. New Housing Economic Indicators



Source: U.S. Census Bureau, U.S. Department of Commerce at www.census.gov/construction/nrs/pdf/newressales.pdf and www.census.gov/construction/nrc/pdf/newresconst.pdf.

EXHIBIT 11

Encapsulated Ammonium Persulfate offered for sale by Qingdao Ipolymer Chemicals Co. in China.

Home > Products > Chemicals > Ammonium Persulfate

Buy > Sell > Community > My Alibaba > Messages > Help > Language >

Products > > Search > [AlibabaPro](#)

Multi Language | Register

Encapsulated Breaker -----Ammonium persulfate

Product Name: Encapsulated Breaker
 Price: US \$2,000-5,000/Ton
 Min. Order: 1000 Tons
 Payment Terms: L/C, T/T

Supplier: Qingdao Ipolymer Chemicals Co., Ltd.
 Address: 1000 Tons per Month
 Contact: 0532-83611111

Product Details: Encapsulated Breaker
 Delivery Time: 7-15 Days

Product Description: Encapsulated Breaker is a type of "delayed breaker" prepared by encapsulating ammonium persulfate (APS) with a water-resistant coating. The coating avoids the dust from the breaker at the high solids concentration can be added to the pulp without causing the premature loss of 40-50% of the breaker. Encapsulated Breaker has advantages such as complete gel breaking, high strength increasing rate, easy flowback etc. Add it also can improve the permeability of filter screens and benefit for the filtering-continuous.

Product Specifications:

| Item | Index |
|---------------------------------------|-----------------------------|
| Appearance | White or light-yellow gran. |
| Particle size (mm-2000) | 200 |
| Apparent density (g/cm ³) | 0.80-1.20 |
| Effective content (%) | 98.0 |
| Residual rate (20-100°C) (%) | 98.0 |
| Moisture content rate (20°C, 1h) (%) | 2.70 |

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