

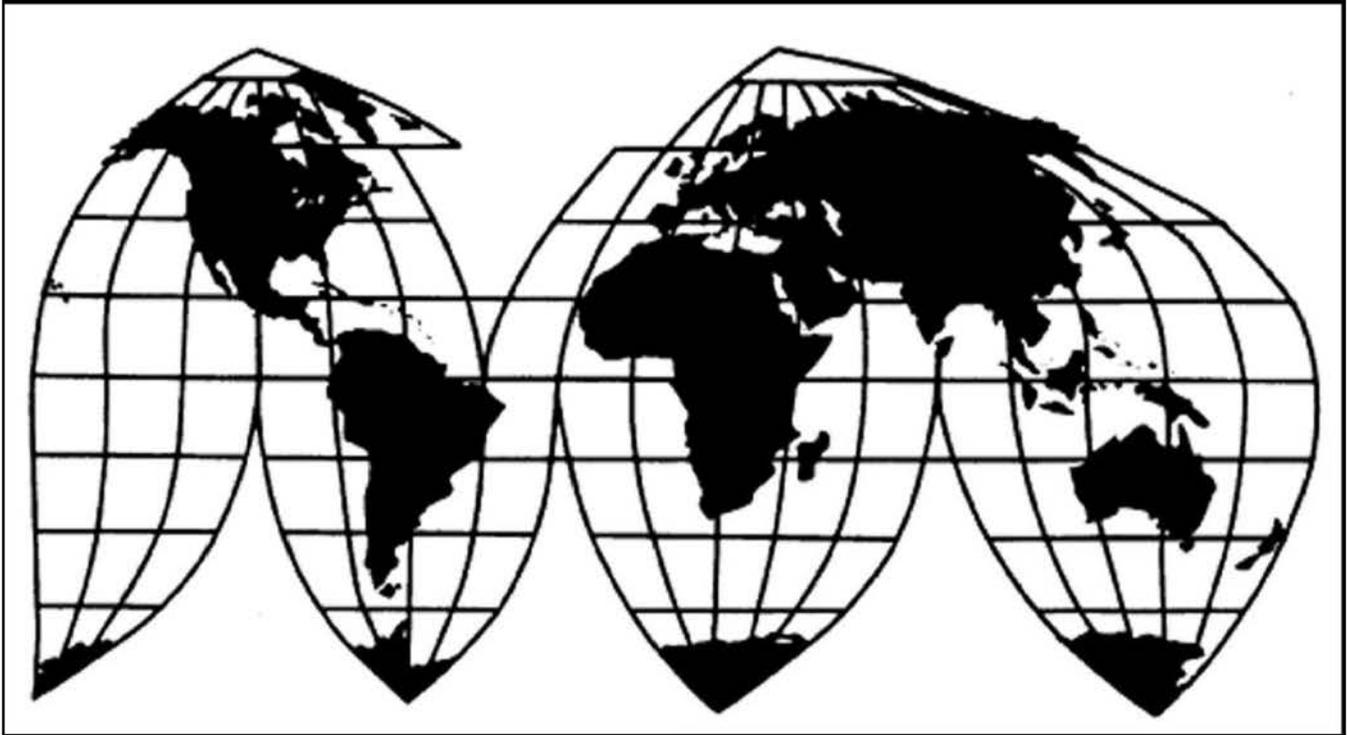
Persulfates from China

Investigation No. 731-TA-749 (Third Review)

Publication 4456

March 2014

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-749 (Third Review)

PERSULFATES FROM CHINA

DETERMINATION

On the basis of the record¹ developed in the subject five-year review, the United States International Trade Commission (Commission) determines, pursuant to section 751(c) of the Tariff Act of 1930 (19 U.S.C. § 1675(c)), that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

BACKGROUND

The Commission instituted this review on March 1, 2013 (78 F.R. 13891, corrected 78 F.R. 14591, March 6, 2013) and determined on June 4, 2013, that it would conduct a full review (78 F.R. 35314, June 12, 2013). Notice of the scheduling of the Commission's review and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on August 27, 2013 (78 F.R. 52969), revised on October 28, 2013 (78 FR 64244). The hearing was held in Washington, DC, on January 16, 2014, and all persons who requested the opportunity were permitted to appear in person or by counsel.

¹ The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(f)).

Views of the Commission

Based on the record in this five-year review, we determine under section 751(c) of the Tariff Act of 1930, as amended (“the Tariff Act”), that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

I. Background

On July 11, 1996, the Commission received a petition filed by FMC Corporation (“FMC”), a domestic producer of persulfates, concerning imports of persulfates from China. The Commission made a final affirmative determination on June 25, 1997.¹ The United States Department of Commerce (“Commerce”) published its antidumping duty order on persulfates from China on July 7, 1997.²

The Commission has conducted two expedited reviews of the order on persulfates. In October 2002 and again in March 2008, it determined that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.³ Commerce issued a continuation of the order effective December 24, 2002,⁴ and a second continuation effective April 21, 2008.⁵

On March 1, 2013, the Commission instituted this third five-year review of the antidumping duty order on persulfates from China.⁶ The Commission received a response from FMC but did not receive a response from any respondent interested party. On June 4, 2013, the Commission found that the domestic interested party group response to its notice of institution was adequate and that the respondent interested party group response was

¹ *Persulfates from China*, Inv. No. 731-TA-749 (Final), USITC Pub. 3044 (June 1997) (“*Original Determination*”).

² *Notice of Antidumping Duty Order and Amended Final Determination of Sales at Less Than Fair Value: Persulfates from the People’s Republic of China*, 62 Fed. Reg. 36259 (July 7, 1997), as amended by *Notice of Amended Antidumping Duty Order: Persulfates from the People’s Republic of China*, 62 Fed. Reg. 39212 (July 22, 1997).

³ *Persulfates from China*, Inv. No. 731-TA-749 (First Review), USITC Pub. 3555 (Oct. 2002) (“*First Review Determination*”); *Persulfates from China*, Inv. No. 731-TA-749 (Second Review), USITC Pub. 3988 (Mar. 2008) (“*Second Review Determination*”).

⁴ *Notice of Continuation of Antidumping Duty Order: Persulfates from the People’s Republic of China*, 67 Fed. Reg. 78415 (Dec. 24, 2002).

⁵ *Persulfates from the People’s Republic of China: Continuation of Antidumping Duty Order*, 73 Fed. Reg. 21318 (April 21, 2008).

⁶ *Persulfates From China; Institution of a Five-Year Review Concerning the Antidumping Duty Order on Persulfates from China*, 78 Fed. Reg. 13891 (Mar. 1, 2013), as corrected by *Persulfates from China; Correction to Notice of Institution*, 78 Fed. Reg. 14591 (Mar. 6, 2013). All interested parties were requested to respond to this notice by submitting the information requested by the Commission.

inadequate.⁷ The Commission concluded, however, that information indicating several potential changes in conditions of competition warranted conducting a full review.⁸ FMC was the only party to file briefs or appear at the Commission's hearing.

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."⁹ The Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation under this subtitle."¹⁰ The Commission's practice in five-year reviews is to examine the domestic like product definition from the original investigation and consider whether the record indicates any reason to revisit the prior findings.¹¹

Commerce has defined the imported merchandise within the scope of the order under review as follows:

The products covered by the order are persulfates, including ammonium, potassium, and sodium persulfates. The chemical formula for these persulfates are, respectively, $(\text{NH}_4)_2\text{S}_2\text{O}_8$, $\text{K}_2\text{S}_2\text{O}_8$, and $\text{Na}_2\text{S}_2\text{O}_8$. Potassium persulfates are currently classifiable under subheading 2833.40.1019 of the Harmonized Tariff Schedule of the United States ("HTSUS"). Sodium persulfates are classifiable under HTSUS subheading 2833.40.20. Ammonium and other persulfates are classifiable under HTSUS subheadings 2833.40.50 and 2833.40.60. Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the scope of the order is dispositive.¹²

⁷ *Persulfates from China; Notice of Commission Determination to Conduct a Full Five-Year Review*, 78 Fed. Reg. 35314 (June 12, 2013).

⁸ Explanation of Commission Determination on Adequacy, EDIS Doc. 511307. Chairman Williamson voted for an expedited review.

⁹ 19 U.S.C. § 1677(4)(A).

¹⁰ 19 U.S.C. § 1677(10); *see, e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

¹¹ *See, e.g., Internal Combustion Industrial Forklift Trucks from Japan*, Inv. No. 731-TA-377 (Second Review), USITC Pub. 3831 at 8-9 (Dec. 2005); *Crawfish Tail Meat from China*, Inv. No. 731-TA-752 (Review), USITC Pub. 3614 at 4 (July 2003); *Steel Concrete Reinforcing Bar from Turkey*, Inv. No. 731-TA-745 (Review), USITC Pub. 3577 at 4 (Feb. 2003).

¹² *Persulfates from the People's Republic of China: Final Results of Expedited Third Sunset Review of Antidumping Duty Order*, 78 Fed. Reg. 40695 (July 8, 2013) (internal citation deleted).

The scope definition set out above is unchanged from Commerce's original scope determination.

The imported products subject to this review are peroxydisulfates, commonly known as persulfates. The three salts included in this review are ammonium persulfate ((NH₄)₂S₂O₈), potassium persulfate (K₂S₂O₈), and sodium persulfate (Na₂S₂O₈). Persulfates are produced in the form of a dry white crystalline powder that is odorless. The three salts are indistinguishable when subject to a visual or tactile examination. They are marketed in different grades, but the chemistry remains unchanged across grades. All three are derived from persulfuric acid. The active ingredient for each is the persulfate anion.¹³

Persulfates have a variety of applications. Persulfates serve as initiators of polymerization to produce plastics and rubber, structural materials such as concrete, soil stabilizers, and coatings. As oxidants, persulfates are used in cleaning, microetching, and plating processes. Persulfates are also used in applications such as producing adhesives, gas and oil recovery, inks and pigments, mining, photography, pulp and paper production, and environmental remediation.¹⁴

Persulfates have a limited shelf life, ranging from three to twelve months.¹⁵ Over time, persulfates crystals can cake together and become unusable and eventually unstable.¹⁶ Expiring persulfates are generally reworked into other products because the disposal of caked persulfates is subject to regulations that make the disposal cost prohibitive.¹⁷

In the original investigation, the Commission found one domestic like product consisting of ammonium, potassium, and sodium persulfates.¹⁸ The Commission based this finding on similarities in physical characteristics and uses, common manufacturing facilities and production employees, producer perceptions of similarity between the products, evidence of interchangeability among the three products, and common channels of distribution.¹⁹

In both the first and second expedited reviews, no party challenged the definition of the domestic like product from the original investigation and no facts were presented that warranted a different conclusion. Accordingly, the Commission again found one domestic like product consisting of ammonium, sodium, and potassium persulfates.²⁰

FMC argues that the Commission should adopt the same definition of the domestic like product as it did in the prior proceedings.²¹ The record in this review contains no information

¹³ Confidential Report ("CR") at I-18; Public Report ("PR") at I-14.

¹⁴ CR at I-18, PR at I-14, CR/PR at Table II-1.

¹⁵ CR at II-7, PR at II-3 – II-4.

¹⁶ CR at II-7 & III-7, PR at II-3 – II-4; Hearing Transcript ("Tr.") at 34-35 (Warlick), 57 (Lerner).

Because they are strong oxidizers, unstable persulfates can ignite and cause hazardous conditions. *Id.* at 34-35 (Warlick), 57 (Lerner).

¹⁷ CR at III-7, PR at III-3; Hearing Tr. at 34-35 (Warlick).

¹⁸ *Original Determination*, USITC Pub. 3044 at 4.

¹⁹ *Original Determination*, USITC Pub. 3044 at 4.

²⁰ *First Review Determination*, USITC Pub. 3555 at 4-5; *Second Review Determination*, USITC Pub. 3988 at 5.

²¹ FMC Prehearing Brief at 4-6.

suggesting that the characteristics and uses of domestically produced persulfates have changed since the prior proceedings in a manner that would cause us to revisit the domestic like product definition.²² We therefore find a single domestic like product, consisting of ammonium, sodium, and potassium persulfates, that is coextensive with the scope of the review.

B. Domestic Industry

Section 771(4)(A) of the Tariff Act defines the relevant industry as the domestic “producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”²³ In defining the domestic industry, the Commission’s general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

In the original investigation, the Commission did not find that appropriate circumstances existed to exclude FMC from the domestic industry as a related party under 19 U.S.C. § 1677(4)(B).²⁴ There were no related party issues in the first and second reviews.²⁵

There are likewise no related party issues in this review.²⁶ Accordingly, we define the domestic industry to be FMC, the sole domestic producer of ammonium, sodium and potassium persulfates.

III. Revocation of the Antidumping Duty Order Is Likely to Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Legal Standards

In a five-year review conducted under section 751(c) of the Tariff Act, Commerce will revoke an antidumping or countervailing duty order unless: (1) it makes a determination that dumping or subsidization is likely to continue or recur and (2) the Commission makes a determination that revocation of the antidumping or countervailing duty order “would be likely

²² CR at I-18 – I-21, PR at I-14 – I-16.

²³ 19 U.S.C. § 1677(4)(A). The definitions in 19 U.S.C. § 1677 are applicable to the entire subtitle containing the antidumping and countervailing duty laws, including 19 U.S.C. §§ 1675 and 1675a. *See* 19 U.S.C. § 1677.

²⁴ Although FMC had imported very small amounts of persulfates from China, the Commission found that FMC’s interests clearly lay in domestic production not importation. *Original Determination*, USITC Pub. 3044 at 5.

²⁵ *First Review Determination*, USITC Pub. 3555 at 5 n.16; *Second Review Determination*, USITC Pub. 3980 at 5 n.20.

²⁶ CR at III-7, PR at III-3 (indicating FMC did not import subject merchandise during the period of review).

to lead to continuation or recurrence of material injury within a reasonably foreseeable time.”²⁷ The Uruguay Round Agreements Act, Statement of Administrative Action (“SAA”) states that “under the likelihood standard, the Commission will engage in a counterfactual analysis; it must decide the likely impact in the reasonably foreseeable future of an important change in the status quo – the revocation or termination of a proceeding and the elimination of its restraining effects on volumes and prices of imports.”²⁸ Thus, the likelihood standard is prospective in nature.²⁹ The U.S. Court of International Trade has found that “likely,” as used in the five-year review provisions of the Act, means “probable,” and the Commission applies that standard in five-year reviews.³⁰

The statute states that “the Commission shall consider that the effects of revocation or termination may not be imminent, but may manifest themselves only over a longer period of time.”³¹ According to the SAA, a “‘reasonably foreseeable time’ will vary from case-to-case, but normally will exceed the ‘imminent’ timeframe applicable in a threat of injury analysis in original investigations.”³²

Although the standard in a five-year review is not the same as the standard applied in an original investigation, it contains some of the same fundamental elements. The statute provides that the Commission is to “consider the likely volume, price effect, and impact of

²⁷ 19 U.S.C. § 1675a(a).

²⁸ SAA, H.R. Rep. 103-316, vol. I, at 883-84 (1994). The SAA states that “{t}he likelihood of injury standard applies regardless of the nature of the Commission’s original determination (material injury, threat of material injury, or material retardation of an industry). Likewise, the standard applies to suspended investigations that were never completed.” *Id.* at 883.

²⁹ While the SAA states that “a separate determination regarding current material injury is not necessary,” it indicates that “the Commission may consider relevant factors such as current and likely continued depressed shipment levels and current and likely continued {sic} prices for the domestic like product in the U.S. market in making its determination of the likelihood of continuation or recurrence of material injury if the order is revoked.” SAA at 884.

³⁰ See *NMB Singapore Ltd. v. United States*, 288 F. Supp. 2d 1306, 1352 (Ct. Int’l Trade 2003) (“‘likely’ means probable within the context of 19 U.S.C. § 1675(c) and 19 U.S.C. § 1675a(a)”), *aff’d mem.*, 140 Fed. Appx. 268 (Fed. Cir. 2005); *Nippon Steel Corp. v. United States*, 26 CIT 1416, 1419 (2002) (same); *Usinor Industeel, S.A. v. United States*, 26 CIT 1402, 1404 nn.3, 6 (2002) (“more likely than not” standard is “consistent with the court’s opinion;” “the court has not interpreted ‘likely’ to imply any particular degree of ‘certainty’”); *Indorama Chemicals (Thailand) Ltd. v. United States*, 26 CIT 1059, 1070 (2002) (“standard is based on a likelihood of continuation or recurrence of injury, not a certainty”); *Usinor v. United States*, 26 CIT 767, 794 (2002) (“‘likely’ is tantamount to ‘probable,’ not merely ‘possible’”).

³¹ 19 U.S.C. § 1675a(a)(5).

³² SAA at 887. Among the factors that the Commission should consider in this regard are “the fungibility or differentiation within the product in question, the level of substitutability between the imported and domestic products, the channels of distribution used, the methods of contracting (such as spot sales or long-term contracts), and lead times for delivery of goods, as well as other factors that may only manifest themselves in the longer term, such as planned investment and the shifting of production facilities.” *Id.*

imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated.”³³ It directs the Commission to take into account its prior injury determination, whether any improvement in the state of the industry is related to the order or the suspension agreement under review, whether the industry is vulnerable to material injury if the orders are revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).³⁴ The statute further provides that the presence or absence of any factor that the Commission is required to consider shall not necessarily give decisive guidance with respect to the Commission’s determination.³⁵

In evaluating the likely volume of imports of subject merchandise if the orders under review are revoked, the Commission is directed to consider whether the likely volume of imports would be significant either in absolute terms or relative to production or consumption in the United States.³⁶ In doing so, the Commission must consider “all relevant economic factors,” including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) the potential for product shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products.³⁷

In evaluating the likely price effects of subject imports if the orders under review are revoked, the Commission is directed to consider whether there is likely to be significant underselling by the subject imports as compared to the domestic like product and whether the subject imports are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.³⁸

In evaluating the likely impact of imports of subject merchandise if the orders under review are revoked, the Commission is directed to consider all relevant economic factors that are likely to have a bearing on the state of the industry in the United States, including but not limited to the following: (1) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; (2) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment; and (3) likely negative effects on the existing development and production efforts of the industry, including

³³ 19 U.S.C. § 1675a(a)(1).

³⁴ 19 U.S.C. § 1675a(a)(1). Commerce has issued no duty absorption findings with respect to persulfates from China. CR at I-13 n.15, PR at I-10 n.15.

³⁵ 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

³⁶ 19 U.S.C. § 1675a(a)(2).

³⁷ 19 U.S.C. § 1675a(a)(2)(A-D).

³⁸ See 19 U.S.C. § 1675a(a)(3). The SAA states that “[c]onsistent with its practice in investigations, in considering the likely price effects of imports in the event of revocation and termination, the Commission may rely on circumstantial, as well as direct, evidence of the adverse effects of unfairly traded imports on domestic prices.” SAA at 886.

efforts to develop a derivative or more advanced version of the domestic like product.³⁹ All relevant economic factors are to be considered within the context of the business cycle and the conditions of competition that are distinctive to the industry. As instructed by the statute, we have considered the extent to which any improvement in the state of the domestic industry is related to the orders under review and whether the industry is vulnerable to material injury upon revocation.⁴⁰

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”⁴¹

a) The Original Investigation and Prior Five-Year Reviews

Demand. In the original investigation, the Commission found that demand was cyclical and was closely tied to economic conditions in the housing, automotive, and packaged goods markets, among others. Apparent U.S. consumption increased irregularly. The domestic industry’s share of consumption fluctuated, but showed a slight overall increase between 1994 and 1996. Domestic capacity remained steady during this period.⁴²

In the first review, the Commission found that the conditions of competition were similar to those of the original investigation. Demand trends remained cyclical and tied to the economic conditions of the markets for products in which persulfates were used. Apparent U.S. consumption increased *** between the period of the original investigation and 2001. The 2001 level, however, signaled the beginning of a softening in demand, which FMC asserted continued into 2002, that resulted from the overall downturn in the U.S. economy and was exacerbated by a decline in printed circuit board production, an important market for persulfates.⁴³

In the second review, apparent U.S. consumption was greater than during the original investigation, but declined from 2001 to 2006. The Commission found that recent declines in the automotive and housing markets would be likely to reduce demand for many products

³⁹ 19 U.S.C. § 1675a(a)(4).

⁴⁰ The SAA states that in assessing whether the domestic industry is vulnerable to injury if the order is revoked, the Commission “considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they may also demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.” SAA at 885.

⁴¹ 19 U.S.C. § 1675a(a)(4).

⁴² *Original Determination*, USITC Pub. 3044 at 6-7; Confidential Views, EDIS Doc. No. 508521 at 10.

⁴³ *First Review Determination*, USITC Pub. 3555 at 7.

using persulfates. It consequently concluded that apparent U.S. consumption of persulfates would continue to decline in the reasonably foreseeable future.⁴⁴

Supply. During the original period of investigation, an August 1995 fire shut down FMC's manufacturing facility for six weeks and destroyed 800 tons of inventory. The inventory loss was not significant in terms of FMC's production in 1995, but there was evidence that the event spurred many purchasers to seek other sources of supply.⁴⁵

In the first review, the Commission found that FMC remained the only domestic producer, although there continued to be competition in the market from both subject and nonsubject imports. Domestic production capacity had remained steady since the original period of investigation, while FMC's capacity utilization had increased along with U.S. consumption. China's persulfates production capacity had increased *** between 1996 and 2000, and its capacity utilization rate declined substantially.⁴⁶

FMC continued to be the sole domestic producer in the second review. Its capacity was higher than in the original investigation or first review, and its share of apparent U.S. consumption was lower in 2006 than in 2001. Capacity and unused capacity in China also had increased since the first review. The number of persulfate producers in China that FMC identified increased from 12 in the first review to 25 in the second review. In 2006, subject Chinese excess capacity *** apparent U.S. consumption. Nonsubject imports had also increased since the first review, both absolutely and as a share of apparent U.S. consumption.⁴⁷

Substitutability and Other Conditions. In the first review, the Commission found that, as in the original investigation, subject imports and the domestic like product were interchangeable. The Commission described persulfates as a commodity-like product for which purchasers actively used the availability of lower-priced product to obtain more favorable prices from an incumbent supplier. The interchangeability of subject imports and U.S. product and the significance of price in the U.S. market had increased since the original investigation, given that the quality of the Chinese product had reportedly improved.⁴⁸ The Commission found that these conditions had not changed in the second review. It also observed that persulfates from China were subject to antidumping duties in the European Union and India.⁴⁹

b) The Current Review

Demand. U.S. demand for persulfates continues to be cyclical and derived from demand for the product in its various downstream products and end-use applications, which include plastics and rubbers, surface preparation, polymerization applications, hair care, ink and

⁴⁴ *Second Review Determination*, USITC Pub. 3988 at 8; Confidential Views, EDIS Doc. No. 508521 at 10.

⁴⁵ *Original Determination*, USITC Pub. 3044 at 6-7.

⁴⁶ *First Review Determination*, USITC Pub. 3555 at 7-8.

⁴⁷ *Second Review Determination*, USITC Pub. 3988 at 9; Confidential Views, EDIS Doc. No. 508524 at 11-12.

⁴⁸ *First Review Determination*, USITC Pub. 3555 at 8.

⁴⁹ *Second Review Determination*, USITC Pub. 3988 at 9.

pigments, film processing, printed circuit board etchants, pulp and paper products, desizing and bleaching of textiles, recreational water treatment, environmental remediation, and oil and gas recovery.⁵⁰ Since the last review, demand for persulfates has shifted in several end-use applications. Demand has grown in the environmental remediation and oil and gas recovery markets, although FMC reported that changes in technology have caused a significant decrease in the use of persulfates in the oil and gas industry since 2011.⁵¹ U.S. Demand for persulfates in recreational water products and printed circuit board applications has largely disappeared.⁵²

Apparent U.S. consumption of persulfates fluctuated during the January 1, 2007 – September 30, 2013 period of review (“POR”). Apparent U.S. consumption declined from *** short tons in 2007 to a period low of *** short tons in 2009, then increased to a period peak of *** short tons in 2011. The *** short tons of apparent U.S. consumption in 2012 was below the level of 2011, but above that of 2009. Apparent U.S. consumption was lower in January-September (“interim”) 2013 at *** short tons than in interim 2012, when it was *** short tons.⁵³

FMC reported that it does not expect a material increase in demand for persulfates in the near future.⁵⁴ Citing its recent losses of the printed circuit board and recreational water markets, FMC contends that the unexpected, abrupt loss of market segments because of changing technology or migrating industries is common in the persulfates industry.⁵⁵ Similarly, although the general production of oil and gas is expected to increase, FMC does not anticipate demand in this market to recover to the 2011 level in the near future.⁵⁶ The majority of market participants indicated that they expect future demand to remain stable or fluctuate.⁵⁷

Supply. FMC remains the sole domestic producer of persulfates.⁵⁸ Domestic industry capacity was constant at *** pounds from 2007 to 2011, with a *** increase to *** pounds in 2012. Capacity utilization fluctuated throughout the POR but increased overall from ***

⁵⁰ CR at II-1, II-9 – II-10, PR at II-5, CR/PR Table II-1. In 2012, persulfates were used predominantly in polymer applications, oil and gas recovery, and environmental remediation. CR at II-10, PR at II-5.

⁵¹ CR at II-2, II-10, PR at II-1 – II-2, II-5; Hearing Tr. at 21 (Ball). The use of persulfates as gel breakers in oil and gas recovery is tied to the use of guar gum to produce gels. Hearing Tr. at 39 (Warlick). FMC reported that a 2012 drought in India caused a worldwide shortage of guar gum and a surge in guar gum prices, which in turn caused users to shift to alternative technologies. Hearing Tr. at 39 (Warlick), 44, 93 (Learner).

⁵² CR at II-2, II-10, PR at II-1, II-5, CR/PR at Tables II-1 & II-2. FMC reported that U.S. demand for persulfates in printed circuit boards has been discontinued because the electronic industry has moved to Asia. CR at II-2 n.2, PR at II-1 n.2. In addition, the recreational water market disappeared because FMC’s sole customer shifted to a different water treatment technology. Hearing Tr. at 96 (Ball).

⁵³ CR/PR at Tables I-1 & I-6.

⁵⁴ Hearing Tr. at 25 (Ball).

⁵⁵ Hearing Tr. at 38, 39 (Warlick).

⁵⁶ Hearing Tr. at 47-48, 93-94 (Learner).

⁵⁷ CR/PR at Table II-4.

⁵⁸ CR at III-1, PR at III-1.

percent in 2007 to *** percent in 2012; capacity utilization was higher in interim 2012 than in interim 2013.⁵⁹ During the POR, the domestic industry supplied the largest share of the U.S. market for persulfates.⁶⁰

Nonsubject imports were the second largest source of persulfates during the POR. Nonsubject imports' market share fluctuated but decreased overall from 2007 to 2012, although it was higher in interim 2013 than in interim 2012.⁶¹ The largest sources of nonsubject imports during the POR were Germany, India, Japan, and Taiwan, which collectively accounted for 98.8 percent of nonsubject imports in 2012.⁶²

There were very limited imports of persulfates from China, accounting for only a very small share of the U.S. market, during the POR.⁶³ There were *** producers of persulfates in China in 2012.⁶⁴ From 2006 to 2012, production capacity increased from 277.8 million pounds to *** pounds while production increased from 222.0 million pounds to *** pounds.⁶⁵

Substitutability. There continues to be a moderate-to-high degree of substitutability between the domestic like product and the subject imports, and price remains an important factor in purchasing decisions.⁶⁶ The U.S. producer, all importers, and the majority of purchasers reported that persulfates from the United States and other countries were "always" or "frequently" interchangeable.⁶⁷ In addition, seven out of eight purchasers reported that price was a "very important" factor in purchasing decisions, while one purchaser reported that price was a "somewhat important" factor.⁶⁸

Other conditions. The primary raw material inputs used in the production of persulfates are sulfuric acid, caustic acid, and ammonia.⁶⁹ The cost of raw materials, per pound, *** from

⁵⁹ CR at II-5 – II-6, PR at II-3.

⁶⁰ CR/PR at Table C-1. The domestic industry's share of the U.S. market for persulfates was *** percent in 2007, *** percent in 2008, *** percent in 2009, *** percent in 2010, *** percent in 2011, and *** percent in 2012; it was *** percent in interim 2012 and *** percent in interim 2013. *Id.*

⁶¹ CR/PR at Table C-1. Nonsubject imports' share of the U.S. market for persulfates was *** percent in 2007, *** percent in 2008, *** percent in 2009, *** percent in 2010, *** percent in 2011, and *** percent in 2012; it was *** percent in interim 2012 and *** percent in interim 2013. *Id.*

⁶² CR at II-9, PR at II-4.

⁶³ Three firms reported imports of subject merchandise in three separate years: *** pounds in 2007, representing *** percent of all imports of persulfates for that year; *** pounds in 2009, representing *** percent of all imports of persulfates for that year; and *** pounds in 2011, representing *** percent of all imports of persulfates for that year. CR at IV-1 – IV-2, PR at IV-1, CR/PR at Table IV-1. Subject imports accounted for *** percent of the U.S. market in 2007 and 2009 and less than that in 2011. CR/PR at Table C-1.

⁶⁴ CR at II-7, PR at II-4. During these proceedings, the Commission received one questionnaire response from a Chinese producer; however, it provided only capacity and production data for 2008 to 2012. *Id.* Accordingly, record data on the persulfates industry is largely based on ***. *Id.*

⁶⁵ CR/PR at Table IV-5.

⁶⁶ CR at II-15, II-18, PR at II-8, II-10.

⁶⁷ CR/PR at Table II-11.

⁶⁸ CR/PR at II-8.

⁶⁹ CR/PR at V-1.

2007 to 2012 but was *** in interim 2013 than in interim 2012.⁷⁰ Raw materials as a percentage of cost of goods sold (“COGS”) ranged from *** percent to *** percent during 2007 to 2012.⁷¹

FMC is a patent holder and patent licensee of certain application technology for the use of persulfates in soil remediation.⁷² FMC explained that these patents do not apply in China and relate to the use of persulfates in soil remediation applications, not the product itself.⁷³ Soil remediation accounted for *** percent of FMC’s U.S. shipments in 2012.⁷⁴

C. Likely Volume of Subject Imports

a) The Original Investigation and Prior Five-Year Reviews

Original Investigation. In its original determination, the Commission found the volume and increase in volume of subject imports to be significant. The quantity of shipments of subject imports more than doubled between 1994 and 1995 and continued to increase significantly between 1995 and 1996, for a nearly three-fold increase over the period of investigation. In terms of value, subject import shipments followed the same trend. The market share of subject imports, by quantity, increased nearly *** during the period of investigation from *** to *** percent. In terms of value, subject imports’ market share more than *** during that period.⁷⁵

First Review. In its first review determination, the Commission found that, after the order was imposed, subject imports declined markedly from 1996 to 1997 and then fluctuated, with subject import volume in 2000 being higher than that in 1997 but lower than that in 1996. In 2001, subject import volumes returned to the level of 1994, the first year of the original period of investigation. In 2001, subject imports from China accounted for *** percent of apparent U.S. consumption. Thus, although subject imports from China had not attained their highest pre-order level, they had maintained a post-order presence in the U.S. market.⁷⁶

The Commission also found in the first review that the persulfates industry in China had expanded since the original investigation. Whereas there had been four known producers of persulfates in China in the original investigation (and respondents claimed that there were another five), the available data in the first review indicated that there were 12 known Chinese

⁷⁰ CR at III-13, PR at III-6. The unit value of the cost of raw materials per pound was \$*** in 2007, \$*** in 2008, \$*** in 2009, \$*** in 2010, \$*** in 2011, and \$*** in 2012; it was \$*** in interim 2012 and \$*** in interim 2013. CR/PR at Table III-8.

⁷¹ CR/PR at V-1.

⁷² Hearing Tr. at 50 (Learner).

⁷³ Hearing Tr. at 86 (Ball), 88-89 (Learner).

⁷⁴ CR/PR at Table II-1.

⁷⁵ *Original Determination*, USITC Pub. 3044 at 10-11; CR at Table I-1; Confidential Views, EDIS Doc. No. 507362 at 14-15 & n.55.

⁷⁶ *First Review Determination*, USITC Pub. 3555 at 9; CR at Table I-1; Confidential Views, EDIS Doc. No. 508521 at 12.

persulfates producers.⁷⁷ Additionally, the Chinese persulfates industry remained export oriented.⁷⁸ In light of the increase in the volume and market share of subject imports during the original investigation, the significant excess capacity resulting from the Chinese persulfates industry's recent capacity expansion, and its continuing export orientation, the Commission concluded that the likely volume of subject imports of persulfates would be significant absent the restraining effect of the antidumping duty order.⁷⁹

Second Review. In the expedited second review, the Commission observed that subject import levels fluctuated. Subject imports climbed significantly between 2001 and 2002, then declined to almost half that level in 2003. They rose again in 2004, but declined in 2006.⁸⁰ The Commission observed that the declines in subject import volumes from 2004 to 2006 were likely due at least in part to a substantial increase in the duty deposit rate assigned to the largest exporter of subject merchandise.⁸¹

The Commission found that the reported number of producers of subject merchandise had more than doubled since the first review, that capacity had increased to a level exceeding apparent U.S. consumption, that there was significant excess capacity, and that the industry in China remained export oriented.⁸² The Commission concluded that the subject producers would likely use their large capacity and considerable excess capacity to increase exports to the United States upon revocation and that subject import volume upon revocation would likely be significant. The behavior of the largest exporter of subject merchandise when it had been assigned *de minimis* or low duty deposit rates indicated that the U.S. market remained attractive to Chinese producers. Additionally, the imposition of antidumping duties on persulfates from China by the European Union, a major Chinese export market, and India would cause subject producers to search for new markets.⁸³

b) The Current Review

Under the discipline of the antidumping duty order, there were very limited imports of persulfates during the POR.⁸⁴ Nevertheless, we find that the Chinese industry has the ability and incentive to export significant volumes of persulfates to the United States and would likely do so if the antidumping duty order were revoked.

Chinese producers have substantial production capacity and, despite considerable unused capacity, the Chinese persulfates industry expanded production capacity during the

⁷⁷ *First Review Determination*, USITC Pub. 3555 at 9.

⁷⁸ *First Review Determination*, USITC Pub. 3555 at 10.

⁷⁹ *First Review Determination*, USITC Pub. 3555 at 10.

⁸⁰ *Second Review Determination*, USITC Pub. 3988 at 11.

⁸¹ *Second Review Determination*, USITC Pub. 3988 at 11.

⁸² *Second Review Determination*, USITC Pub. 3988 at 11.

⁸³ *Second Review Determination*, USITC Pub. 3988 at 11.

⁸⁴ Subject import quantities were *** pounds in 2007, *** pounds in 2009, and *** pounds in 2012. CR/PR at Table IV-1. Subject imports' market share never exceeded *** percent during the POR. CR/PR at Table C-1.

POR. As discussed above, production capacity increased from 277.8 million pounds to *** pounds from 2006 to 2012, while production increased from 222.0 million pounds to *** pounds during that time.⁸⁵ Moreover, despite the existence of *** pounds of unused capacity in 2012, ***.⁸⁶ Because the Chinese persulfates industry's excess capacity already exceeded apparent U.S. consumption by approximately *** pounds in 2012⁸⁷ and is expected to increase substantially in 2013, we find that subject producers have the ability to significantly increase exports of persulfates to the United States.

We further find that the industry producing subject merchandise in China has incentives to increase exports to the United States significantly upon revocation. The record indicates that Chinese producers continue to be export oriented. From 2007 to 2012, China was the world's leading exporter of persulfates, increasing exports 44.4 percent during that time.⁸⁸ The industry in China has also demonstrated the ability to increase exports to particular markets rapidly. After an antidumping duty order in the European Union (EU) expired in 2001, imports of persulfates from China into the EU increased from 440,000 pounds in 2001 to more than 8.8 million pounds in 2003 and, in 2006, more than doubled to almost 19.8 million pounds.⁸⁹ Consequently, in just a few years, imports from China captured 20 percent of the EU market for persulfates.⁹⁰

Moreover, the U.S. market is attractive. The United States was among the seven leading nations importing persulfates,⁹¹ and the record indicates that prices for persulfates in the United States tend to be *** than in other countries.⁹² Furthermore, the limited shelf life of persulfates restricts the ability of producers to place surplus production in inventory, which encourages exports.^{93 94} In addition, persulfates from China are subject to antidumping duty

⁸⁵ CR/PR at Table IV-5.

⁸⁶ CR at IV-8, PR at IV-5, CR/PR at Table IV-5. FMC reports that this planned expansion did, in fact, occur in 2013. Hearing Tr. at 28 (Warlick).

⁸⁷ CR/PR at Tables IV-5 & C-1. Excess capacity in China was *** pounds in 2012, CR at IV-8, PR at IV-5, while apparent U.S. consumption was *** pounds in 2012, CR/PR at Table C-1.

⁸⁸ CR at IV-11, PR at IV-7. The available data concerning world imports and exports are derived from the Global Trade Atlas and include some out-of-scope merchandise. CR at IV-11 n.20, PR at IV-7 n.20.

⁸⁹ FMC Prehearing Brief at 40 & Exhibit 14 at Item 23, European Council Implementing Regulation No. 1343/2013 of 12 December 2013 (imposing a definitive antidumping duty on imports of persulfates from China).

⁹⁰ FMC Prehearing Brief at 40 & Exhibit 14 at Item 23; *see also* Hearing Tr. at 31-32 (Warlick).

⁹¹ CR at IV-12, PR at IV-8, CR/PR at Table IV-8.

⁹² CR at V-14 – V-15, PR at V-5, CR/PR at Figure V-4.

⁹³ FMC further argues that this encourages the Chinese industry to place its excess supplies on the world market at prices low enough to ensure that a global buyer is found quickly before the product begins to age. *See, e.g.*, Hearing Tr. at 35 (Warlick).

⁹⁴ We further observe that there is limited information in the record concerning inventories of the subject imports. The sole information was provided by importers and indicated very small inventories of subject merchandise in the United States in 2011 and 2012 as well as interim 2012 and interim 2013. CR/PR at Table IV-4. We give little weight to this statutory factor given that the record (Continued...)

orders in the EU and India.⁹⁵ These barriers to other markets would serve as added incentives for Chinese producers to sell persulfates in the United States if the current order were revoked.

In sum, the subject producers have significant production capacity and considerable excess capacity, with reported plans to expand that capacity further; are export oriented; and have incentives to increase exports to the attractive U.S. market.⁹⁶ We consequently find that the volume of subject imports, both in absolute terms and relative to production and consumption in the United States, would likely be significant in the reasonably foreseeable future if the order were revoked.

D. Likely Price Effects

1. The Original Investigation and Prior Five-Year Reviews

Original Investigation. In the original investigation, the Commission found that persulfates were commodity-like products and that most purchasers reported price to be a very important factor in purchasing decisions. Pricing data showed that subject imports undersold the domestic like product in 56 of 57 pricing comparisons by margins as high as 50.4 percent. Given the high degree of interchangeability between subject imports and the domestic like product and the clear importance of price to purchasers, the Commission considered even smaller margins of underselling to be significant.⁹⁷ The Commission also found that subject imports suppressed domestic prices to a significant degree. Although FMC experienced significant increases in operating costs in 1995 and 1996, it had been unable to increase its prices to offset these increased costs due to the large presence of dumped subject imports.⁹⁸

First Review. In the first review, the Commission found that the post-order average unit value of subject imports had declined, from \$0.50 per pound in 1996 to between \$0.43 and \$0.45 per pound from 1997 to 2000 and \$0.49 per pound in 2001. Given the price sensitivity of the U.S. persulfates market and the interchangeability of subject imports and the domestic like product, the persistent underselling by subject imports in the original investigation, and the low post-order prices for persulfates from China, along with the substantial excess production

(...Continued)

indicates that, due to persulfates' limited shelf life, they are not maintained in inventories in significant quantities. CR at III-6 – III-7, PR at III-3, CR/PR at Table III-5, CR/PR at Table IV-4.

⁹⁵ CR at IV-9, PR at IV-6, CR/PR at Table IV-6. On October 10, 2012, the European Commission opened a sunset review of the antidumping measures in place against persulfates from China and, on December 12, 2013, issued its Implementing Regulation in the China Expiry Review continuing the antidumping duty order on imports of persulfates from China. CR at IV-9, PR at IV-6; FMC Prehearing Brief at 38 & Exhibit 14. On March 12, 2013, India finalized its sunset review of the antidumping duties imposed on persulfates from China, and the antidumping duty order continues to be in place. CR at IV-10, PR at IV-6, CR/PR at Table IV-6; FMC's Prehearing Brief at 42.

⁹⁶ We further observe that the record does not have information about the potential for product shifting because of the lack of questionnaire responses from Chinese producers.

⁹⁷ *Original Determination*, USITC Pub. 3044 at 17-18.

⁹⁸ *Original Determination*, USITC Pub. 3044 at 12.

capacity in China and softening demand conditions in the U.S. market, the Commission found that significant volumes of subject imports likely would significantly undersell the domestic like product to gain market share and would have significant depressing or suppressing effects on the prices of the domestic like product within a reasonably foreseeable time.⁹⁹

Second Review. In the second review, the Commission concluded that, because subject imports undersold the domestic like product in the original investigation and average unit values for subject imports continued to be *** average unit values for FMC's commercial shipments during the review period, subject imports would likely undersell the domestic like product if the order were revoked. The Commission emphasized that demand for persulfates in the United States was declining, subject imports and the domestic like product were largely interchangeable, the market was price-sensitive, and the products competed largely on the basis of price. In light of these facts, the Commission concluded that significant underselling of subject imports would be likely to lead to significant depressing effects on prices for the domestic like product within a reasonably foreseeable time.¹⁰⁰

2. The Current Review

The record in this review indicates that there continues to be a moderate-to-high degree of substitutability between the domestic like product and subject imports and that price remains an important factor in purchasing decisions.¹⁰¹

For this review, the Commission collected pricing data on three persulfates products.¹⁰² FMC provided usable pricing data for sales of the requested products, accounting for approximately *** percent of the U.S. producer's shipments of product.¹⁰³ One importer provided usable pricing data for sales of product 3, accounting for approximately *** percent of U.S. shipments of imports from China during the POR.¹⁰⁴ In general, the price of persulfates increased throughout the POR, with price increases for the domestically produced product ranging from *** percent to *** percent.¹⁰⁵ In the single instance in which the Commission was able to compare the average quarterly price of subject imports with the domestic product (product 3), subject imports undersold the domestic like product, with a *** percent margin of underselling.¹⁰⁶

In light of the likely significant volume of subject imports from China, the importance of price in purchasing decisions, and the moderate-to-high degree of substitutability of subject

⁹⁹ *First Review Determination*, USITC Pub. 3555 at 11.

¹⁰⁰ *Second Review Determination*, USITC Pub. 3988 at 13; Confidential Views, EDIS Doc. 508524 at 18.

¹⁰¹ CR at II-15, PR at II-8, CR/PR at Table II-8.

¹⁰² CR at V-4, PR at V-3. Product 1 was potassium persulfates, product two was ammonium persulfates, and product 3 was sodium persulfates. *Id.*

¹⁰³ CR at V-4, V-5, PR at V-3.

¹⁰⁴ CR at V-4 – V-5, PR at V-4.

¹⁰⁵ CR at V-12 – V-13, PR at V-4, CR/PR at Table V-5.

¹⁰⁶ CR at V-14, PR at V-5.

imports and the domestic like product, we find that Chinese producers would likely price their product aggressively to gain market share in the absence of the order. This would likely result in the recurrence of the significant underselling observed in the original investigation. Other adverse effects would also likely result, such as the loss of market share or, if domestic producers match the low prices of subject imports, significant price depression and/or suppression.

In light of the significant underselling and the adverse effects that underselling would have on the domestic industry's prices or market share, we find that the subject imports would likely have significant price effects if the order were revoked.

E. Likely Impact

1. The Original Investigation and Prior Five-Year Reviews

Original Investigation. In the original investigation, the Commission acknowledged that certain domestic industry performance indicators improved over the period of investigation, including production, shipments, and net sales, all of which rose along with domestic consumption. However, gross profit declined "steadily and substantially" during the same period. Operating income also declined throughout the investigation, and unit sales, general, and administrative expenses increased "steadily and significantly."¹⁰⁷ The Commission found that the sharp increase in subject import volume and market share at prices that were often significantly below prices for comparable domestic products prevented the domestic industry from offsetting at least some of its increased costs with price increases. That large purchasers frequently turned to subject imports when offered lower prices constituted additional evidence of the adverse impact that subject imports had on the domestic industry, particularly on its financial performance.¹⁰⁸

First Review. In the first review, the Commission observed that there was limited information on the record concerning the current condition of the domestic industry. It found that FMC had not increased production capacity since the original investigation and that the average unit values of its U.S. shipments had remained essentially flat since 1999. Certain industry indicators had improved since the order was imposed. Production, U.S. shipments, capacity utilization, and market share all increased, and the Commission attributed these improvements to the positive effects of the order. Based on the limited information in the record of the first review, the Commission could not determine whether the domestic industry was vulnerable to material injury if the order were revoked.¹⁰⁹ It found that given the likely volume and price effects upon revocation of the order, there would likely be a significant adverse impact on the industry's production, shipments, sales, and revenue, which would have

¹⁰⁷ *Original Determination*, USITC Pub. 3044 at 12-13.

¹⁰⁸ *Original Determination*, USITC Pub. 3044 at 14.

¹⁰⁹ *First Review Determination*, USITC Pub. 3555 at 12.

a direct adverse impact on investments. The Commission also found that revocation of the order would likely result in commensurate employment declines for the domestic industry.¹¹⁰

Second Review. In the second review, the Commission again acknowledged that there was only limited information on the record regarding the condition of the domestic industry. Certain indicators had improved since the order was imposed, such as the U.S. producer's capacity, production, and operating profit. However, other indicators had declined since 2001 to levels similar to those found during the original period of investigation, such as U.S. shipments, capacity utilization, market share, and average unit values of U.S. shipments. While the industry reported an operating profit in the first half of 2007, it argued that the subsequent downturn in demand in the automotive and housing industries made it vulnerable and that its *** were very fragile. The Commission, however, concluded that the limited information on the record prevented it from finding that the domestic industry was vulnerable to material injury if the order were revoked.¹¹¹

The Commission further found that, given softening demand conditions and the likely significant underselling by the subject imports, the significant increase in subject imports would likely cause a significant decline in the volume of the domestic producer's shipments as well as significant negative price effects. The Commission determined that the volume and price effects of subject imports would have a significant negative impact on the domestic industry and cause it to lose market share. The price and volume declines would also likely have a significant adverse impact on the domestic industry's production, shipments, sales, and revenues, which would have a direct adverse impact on its profitability, ability to raise capital, and maintain necessary capital investments, further resulting in employment declines.¹¹²

a) The Current Review

Most indicators of the domestic industry's performance were stable or showed overall improvement during the POR, although several indicators were lower in interim 2013 than in interim 2012. Capacity was constant during most of the POR, with a slight increase in 2012; it was higher in interim 2013 than in interim 2012.¹¹³ Production and capacity utilization fluctuated during the POR but increased overall from 2007 to 2012; they were each lower in interim 2013 than in interim 2012.¹¹⁴ The domestic industry's U.S. shipments increased

¹¹⁰ *First Review Determination*, USITC Pub. 3555 at 12.

¹¹¹ *Second Review Determination*, USITC Pub. 3988 at 14; Confidential Views, EDIS Doc. No. 508524 at 22.

¹¹² *Second Review Determination*, USITC Pub. 3988 at 14-15.

¹¹³ CR/PR at Table III-3. Capacity was *** pounds from 2007 to 2011 and increased in 2012 to *** pounds; capacity was *** pounds in interim 2012 and *** pounds in interim 2013. *Id.*

¹¹⁴ CR/PR at Table III-3. Production was *** pounds in 2007, *** pounds in 2008, *** pounds in 2009, *** pounds in 2010, *** pounds in 2011, and *** pounds in 2012; it was *** pounds in interim 2012 and *** pounds in interim 2013. *Id.* Capacity utilization was *** percent in 2007, *** percent in 2008, *** percent in 2009, *** percent in 2010, *** percent in 2011, and *** percent in 2012; it was *** percent in interim 2012 and *** percent in interim 2013. *Id.*

irregularly overall from 2007 to 2012 and were lower in interim 2013 than in interim 2012.¹¹⁵ Net sales, by quantity, fluctuated but increased overall from 2007 to 2012; the quantity of net sales was lower in interim 2013 than in interim 2012.¹¹⁶ Net sales, by value, substantially increased from 2007 to 2012, although the value of net sales was lower in interim 2013 than in interim 2012.¹¹⁷ The domestic industry held a predominant share of the U.S. market for persulfates throughout the POR; its market share increased irregularly from 2007 to 2012, but was lower in interim 2013 than in interim 2012.¹¹⁸

The number of production related workers increased from 2007 to 2011 and remained stable from 2011 to 2012 and during the interim periods, while wages paid increased from 2007 to 2012 and were higher in interim 2013 than in interim 2012.¹¹⁹ Hours worked and productivity fluctuated during the POR, but increased overall from 2007 to 2012; hours worked were higher in interim 2013 than in interim 2012, while productivity was lower in interim 2013 than in interim 2012.¹²⁰

The domestic industry was profitable throughout the POR. Operating income increased substantially from 2007 to 2011 before decreasing slightly in 2012; it was lower in interim 2013 than in interim 2012.¹²¹ Operating margins followed the same trend from 2007 to 2012 and were likewise lower in interim 2013 than in interim 2012.¹²² Capital expenditures increased irregularly from 2007 to 2011 and then increased substantially in 2012; they were lower in

¹¹⁵ CR/PR at Table III-4. U.S. shipments were *** pounds in 2007, *** pounds in 2008, *** million pounds in 2009, *** pounds in 2010, *** pounds in 2011, and *** pounds in 2012; they were *** pounds in interim 2012 and *** pounds in interim 2013. *Id.*

¹¹⁶ CR/PR at Table III-8. Net sales, by quantity, were *** pounds in 2007, *** pounds in 2008, *** pounds in 2009, *** pounds in 2010, *** pounds in 2011, and *** pounds in 2012; the quantity of net sales was *** pounds in interim 2012 and *** pounds in interim 2013. *Id.*

¹¹⁷ CR/PR at Table III-8. Net sales, by value, were \$*** in 2007, \$*** in 2008, \$*** in 2009, \$*** in 2010, \$*** in 2011, and \$*** in 2012; the value of net sales was \$*** in interim 2012 and \$*** in interim 2013. *Id.*

¹¹⁸ CR/PR at Table C-1. The domestic industry's share of the U.S. market for persulfates was *** percent in 2007, *** percent in 2008, *** percent in 2009, *** percent in 2010, *** percent in 2011, and *** percent in 2012; it was *** percent in interim 2012 and *** percent in interim 2013. *Id.*

¹¹⁹ CR/PR at Table III-7. The number of production related workers was *** in 2007, *** in 2008, *** in 2009, *** in 2010, *** in 2011, and *** in 2012; it was *** in interim 2012 and interim 2013. *Id.* Wages paid were \$*** in 2007, \$*** in 2008, \$*** in 2009, \$*** in 2010, \$*** in 2011, and \$*** in 2012; wages paid were \$*** in interim 2012 and \$*** in interim 2013. *Id.*

¹²⁰ CR/PR at Table III-7. Total hours worked were *** in 2007, *** in 2008, *** in 2009, *** in 2010, *** in 2011, and *** in 2012; they were *** in interim 2012 and *** in interim 2013. *Id.* In pounds per hour, productivity was *** in 2007, *** in 2008, *** in 2009, *** in 2010, *** in 2011, and *** in 2012; it was *** in interim 2012 and *** in interim 2013. *Id.*

¹²¹ CR/PR at Table III-8. Operating income was \$*** in 2007, \$*** in 2008, \$*** in 2009, \$*** in 2010, \$*** in 2011, and \$*** in 2012; it was \$*** in interim 2012 and \$*** in interim 2013. *Id.*

¹²² CR/PR at Table III-8. The domestic industry's operating margins were *** percent in 2007, *** percent in 2008, *** percent in 2009, *** percent in 2010, *** percent in 2011, and *** percent in 2012; operating margins were *** percent in interim 2012 and *** percent in interim 2013. *Id.*

interim 2013 than in interim 2012.¹²³ Research and development (“R&D”) expenses decreased irregularly from 2007 to 2012, but were slightly higher in interim 2013 than in interim 2012.¹²⁴

In light of these performance indicia, we find that the domestic industry is not currently in a vulnerable condition. The domestic industry’s production, capacity utilization, and U.S. shipments increased overall from 2007 to 2012. Its market share remained high throughout the POR. The quantity and value of net sales increased from 2007 to 2012, and the domestic industry had a profitable performance throughout the POR.

We observe, however, that the domestic industry’s improved performance occurred while the subject imports were essentially absent from the U.S. market under the discipline of the order and find that subject imports would likely have significant adverse effects on the domestic industry upon revocation of the order. Declining or disappearing demand in particular market segments throughout the POR, often related to unanticipated shifts in technology, reflect instability and uncertainty in market conditions that is likely to continue. As previously discussed, FMC does not believe that U.S. demand is likely to return to 2011 levels in the future, and most market participants believed future demand would either be stable or fluctuating. Should the order under review be revoked, we have found that the volume of subject imports would likely increase significantly. We have further found that this additional volume of subject imports would be priced in a manner that would likely undersell the domestic like product. Consequently, the domestic industry would need to respond either by forgoing sales and ceding market share in a market that is unlikely to be growing, or by lowering or restraining prices. Under either circumstance, the industry’s revenues and financial performance would likely decline, resulting in likely losses of employment and decreasing investment.

Moreover, although the domestic industry holds patents on the use of persulfates in soil remediation,¹²⁵ that market is small, representing only *** percent of FMC’s persulfates shipments in 2012.¹²⁶ Accordingly, the domestic industry is not substantially insulated by patents from either likely subject import competition or likely adverse price effects.

We have also considered the role of nonsubject imports in the U.S. market. Nonsubject imports’ share of the U.S. persulfates market fluctuated throughout the POR, but remained relatively small. The presence of nonsubject imports in the U.S. market did not prevent the domestic industry from achieving improved performance during the POR. Moreover, no party has alleged other causes for the likely adverse impact on the domestic industry described above nor are there any such causes apparent from the record.

¹²³ CR at III-16, PR at III-6, CR/PR at Table III-10. Capital expenditures were \$*** in 2007, \$*** in 2008, \$*** in 2009, \$*** in 2010, \$*** in 2011, and \$*** in 2012; they were \$*** in interim 2012 and \$*** in interim 2013. *Id.*

¹²⁴ CR at III-16, PR at III-6, CR/PR at Table III-10. R&D expenses were \$*** in 2007, \$*** in 2008, \$*** in 2009, \$*** in 2010, \$*** in 2011, and \$*** in 2012; R&D expenses were \$*** in interim 2012 and \$*** in interim 2013. *Id.*

¹²⁵ Hearing Tr. at 50 (Learner), 86-87 (Ball), 88-89 (Learner).

¹²⁶ CR/PR at Table II-1.

IV. Conclusion

For the foregoing reasons, we determine that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

PART I: INTRODUCTION

BACKGROUND

On March 1, 2013, the U.S. International Trade Commission (“Commission” or “USITC”) gave notice, pursuant to section 751(c) of the Tariff Act of 1930, as amended (“the Act”),¹ that it had instituted a review to determine whether revocation of the antidumping duty order on persulfates from China would likely lead to the continuation or recurrence of material injury to a domestic industry.^{2 3} On June 4, 2013, the Commission determined that it would conduct a full review pursuant to section 751(c)(5) of the Act.⁴ The tabulation on the following page presents information relating to the background and schedule of this proceeding:⁵

¹ 19 U.S.C. 1675(c).

² *Persulfates From China; Institution of a Five-Year Review Concerning the Antidumping Duty Order on Persulfates from China*, 78 FR 13891, March 1, 2013, as corrected by *Persulfates from China; Correction to Notice of Institution*, 78 FR 14591, March 6, 2013. All interested parties were requested to respond to this notice by submitting the information requested by the Commission.

³ In accordance with section 751(c) of the Act, the U.S. Department of Commerce (“Commerce”) published a notice of initiation of a five-year review of the subject antidumping order concurrently with the Commission’s notice of institution. *Initiation of Five-Year (“Sunset”) Review*, 78 FR 13862, March 1, 2013.

⁴ *Persulfates from China; Notice of Commission Determination to Conduct a Full Five-Year Review*, 78 FR 35314, June 12, 2013. The Commission found that the domestic interested party group response to its notice of institution was adequate and that the respondent interested party group response was inadequate. The Commission found, however, that other circumstances warranted conducting a full review. Chairman Williamson dissented.

⁵ The Commission’s notice of institution, notice to conduct a full review, scheduling notice, revised scheduling notice, and statement on adequacy are referenced in appendix A and may also be found at the Commission’s web site (internet address www.usitc.gov). Commissioners’ votes on whether to conduct expedited or full review may also be found at the web site. Appendix B presents the list of witnesses who appeared at the Commission’s hearing.

Effective date	Action
July 7, 1997	Commerce's antidumping duty order on persulfates from China (62 FR 36259)
July 22, 1997	Commerce's amended antidumping duty order on persulfates from China (62 FR 39212)
June 3, 2002	Commerce's initiation and the Commission's institution of first five-year review (67 FR 38332, 38333)
December 24, 2002	Commerce's continuation of the antidumping duty order on persulfates from China (67 FR 78415)
November 1, 2007	Commerce's initiation and the Commission's institution of second five-year review (72 FR 61907, 61861)
April 21, 2008	Commerce's continuation of the antidumping duty order on persulfates from China (73 FR 21318)
March 1, 2013	Commerce's initiation and the Commission's institution of third five-year review (78 FR 13862, 13891)
March 1, 2013	Commission's corrected notice of institution of third five-year review (78 FR 14591, March 6, 2013)
June 4, 2013	Commission's determination to conduct full five-year review (78 FR 35314, June 12, 2013)
July 8, 2013	Commerce's final results of expedited third five-year review of the antidumping duty order (78 FR 40695)
August 21, 2013	Commission's scheduling of the review (78 FR 52969, August 27, 2013)
October 22, 2013	Commission's revised scheduling of the review (78 FR 64244, October 28, 2013)
January 16, 2014	Commission's hearing
February 24, 2014	Commission's vote
March 10, 2013	Commission's determination

The original investigation

The original investigation resulted from a petition filed by FMC Corporation ("FMC"), Chicago, Illinois, on July 11, 1996, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of persulfates from China. Following notification of a final determination by Commerce that imports of persulfates from China were being sold at LTFV, the Commission determined on June 25, 1997 that a domestic industry was materially injured by reason of LTFV imports of persulfates from China.⁶ Commerce published the antidumping duty order on persulfates from China on July 7, 1997.⁷

⁶ *Persulfates from China, Inv. No. 731-TA-749 (Final)*, USITC Publication 3044 (June 1997).

⁷ *Notice of Antidumping Duty Order and Amended Final Determination of Sales at Less Than Fair Value: Persulfates from the People's Republic of China*, 62 FR 36259, July 7, 1997, as amended by *Notice* (continued...)

Subsequent five-year reviews

In October 2002, the Commission completed an expedited five-year review of the subject order and determined that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.⁸ Following affirmative determinations in the first five-year reviews by Commerce and the Commission,⁹ Commerce issued a continuation of the antidumping duty order on imports of persulfates from China, effective December 24, 2002.¹⁰

In March 2008, the Commission completed an expedited five-year review of the subject order and determined that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.¹¹ Following affirmative determinations in the second five-year reviews by Commerce and the Commission,¹² Commerce issued a continuation of the antidumping duty order on imports of persulfates from China, effective April 21, 2008.¹³

SUMMARY DATA

Table I-1 presents a summary of data from the original investigation, first and second expedited reviews, and the current full five-year review.

(...continued)

of Amended Antidumping Duty Order: Persulfates from the People's Republic of China, 62 FR 39212, July 22, 1997.

⁸ *Persulfates from China*, Inv. No. 731-TA-749 (Review), USITC Publication 3555 (October 2002).

⁹ *Final Results of Expedited Sunset Review: Persulfates From the People's Republic of China*, 67 FR 62226, October 4, 2002; *Persulfates from China*, 67 FR 66001, October 29, 2002.

¹⁰ *Notice of Continuation of Antidumping Duty Order: Persulfates from the People's Republic of China*, 67 FR 78415, December 24, 2002.

¹¹ *Persulfates from China*, Inv. No. 731-TA-749 (Second Review), USITC Publication 3988 (March 2008).

¹² *Persulfates from the People's Republic of China: Notice of Final Results of Expedited Second Sunset Review of Antidumping Duty Order*, 73 FR 11868, March 5, 2008; *Persulfates from China*, 73 FR 18561, April 4, 2008.

¹³ *Persulfates from the People's Republic of China: Continuation of Antidumping Duty Order*, 73 FR 21318, April 21, 2008.

Table I-1

Persulfates: Comparative data from the original investigation, first expedited review, second expedited review, and current review, 1994-96, 2001, 2006, and 2007-12

(Quantity in 1,000 pounds, value in 1,000 dollars, share/ratios in percent)

Item	Original investigation			First Review	Second Review
	1994	1995	1996	2001	2006
Apparent U.S. consumption (quantity)	***	***	***	***	***
Market shares based on quantity:					
U.S. producers' share	***	***	***	***	***
U.S. importers' shares:					
China	***	***	***	***	***
All other sources	***	***	***	***	***
Total imports	***	***	***	***	***
Apparent U.S. consumption (value)	***	***	***	(¹)	(¹)
Market shares based on value:					
U.S. producers' share	***	***	***	(¹)	(¹)
U.S. importers' shares:					
China	***	***	***	(¹)	(¹)
All other sources	***	***	***	(¹)	(¹)
Total imports	***	***	***	(¹)	(¹)
U.S. shipments of imports from:					
China:					
Quantity	***	***	***	3,181	847
Value	***	***	***	1,544	557
Unit value	***	***	***	0.49	0.66
All other sources:					
Quantity	***	***	***	10,051	15,820
Value	***	***	***	6,472	8,791
Unit value	***	***	***	0.65	0.56
Total:					
Quantity	***	***	***	13,232	16,667
Value	***	***	***	8,016	9,348
Unit value	***	***	***	0.60	0.56

Table I-1—Continued

Persulfates: Comparative data from the original investigation, first expedited review, second expedited review, and current review, 1994-96, 2001, 2006, and 2007-12

(Quantity in 1,000 pounds, value in 1,000 dollars, share/ratios in percent)

Item	Third Review					
	2007	2008	2009	2010	2011	2012
Apparent U.S. consumption (quantity)	***	***	***	***	***	***
Market shares based on quantity:						
U.S. producers' share	***	***	***	***	***	***
U.S. importers' shares:						
China	***	***	***	***	(²)	(²)
All other sources	***	***	***	***	***	***
Total imports	***	***	***	***	***	***
Apparent U.S. consumption (value)	***	***	***	***	***	***
Market shares based on value:						
U.S. producers' share	***	***	***	***	***	***
U.S. importers' shares:						
China	***	***	***	***	(²)	(²)
All other sources	***	***	***	***	***	***
Total imports	***	***	***	***	***	***
U.S. shipments of imports from:						
China:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	(³)	***	(³)	***	***
All other sources:						
Quantity	12,703	10,456	8,817	9,935	12,518	11,152
Value	9,007	8,668	8,343	8,936	11,936	10,453
Unit value	0.71	0.83	0.95	0.90	0.95	0.94
Total:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***

Table I-1--Continued

Persulfates: Comparative data from the original investigation, first expedited review, second expedited review, and current review, 1994-96, 2001, 2006, and 2007-12

(Quantity in 1,000 pounds, value in 1,000 dollars, share/ratios in percent)

Item	Original investigation			First Review	Second Review
	1994	1995	1996	2001	2006
U.S. producers:					
Capacity quantity	***	***	***	***	***
Production quantity	***	***	***	***	***
Capacity utilization	***	***	***	***	***
U.S. shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***
Unit value	***	***	***	***	***
Export shipments:					
Quantity	***	***	***	(¹)	(¹)
Value	***	***	***	(¹)	(¹)
Unit value	***	***	***	(¹)	(¹)
Ending inventory quantity	***	***	***	(¹)	(¹)
Inventory/total shipments	***	***	***	(¹)	(¹)
Production workers	***	***	***	(¹)	(¹)
Hours worked (1,000)	***	***	***	(¹)	(¹)
Wages paid (\$1,000)	***	***	***	(¹)	(¹)
Hourly wages	***	***	***	(¹)	(¹)
Productivity (pounds per hour)	***	***	***	(¹)	(¹)
Net sales:					
Quantity	***	***	***	(¹)	(¹)
Value	***	***	***	(¹)	(¹)
Unit value	***	***	***	(¹)	(¹)
Cost of goods sold	***	***	***	(¹)	(¹)
Gross profit or (loss)	***	***	***	(¹)	(¹)
SG&A	***	***	***	(¹)	(¹)
Operating income or (loss) (value)	***	***	***	(¹)	(¹)
Cost of goods sold/sales (percent)	***	***	***	(¹)	(¹)
Operating income or (loss) (percent)	***	***	***	(¹)	(¹)

¹ Unavailable.

² Less than 0.05 percent.

³ Undefined.

Note.—Import data for 1994-96 and 2007-12 are based on U.S. importers' questionnaire responses and report U.S. shipments of imports of persulfates. Import data for 2001 and 2006 are based on official Commerce statistics and report U.S. imports of persulfates.

Table I-1—Continued

Persulfates: Comparative data from the original investigation, first expedited review, second expedited review, and current review, 1994-96, 2001, 2006, and 2007-12

(Quantity in 1,000 pounds, value in 1,000 dollars, share/ratios in percent)

Item	Third Review					
	2007	2008	2009	2010	2011	2012
U.S. producers:						
Capacity quantity	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***
Capacity utilization	***	***	***	***	***	***
U.S. shipments:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Export shipments:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
Inventory/total shipments	***	***	***	***	***	***
Production workers	***	***	***	***	***	***
Hours worked (1,000)	***	***	***	***	***	***
Wages paid (\$1,000)	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***	***
Net sales:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Cost of goods sold	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***
SG&A	***	***	***	***	***	***
Operating income or (loss) (value)	***	***	***	***	***	***
Cost of goods sold/sales (percent)	***	***	***	***	***	***
Operating income or (loss) (percent)	***	***	***	***	***	***

Source: Data for 1994-96 are compiled from *Persulfates from China Inv. No. 731-TA-749 (Final)*, INV-U-046, June 3, 1997, table C-1; data for 2001 are compiled from *Persulfates from China Inv. No. 731-TA-749 (Review)*, INV-Z-168, October 3, 2002, tables I-1, I-2, and I-3; data for 2006 are compiled from *Persulfates from China Inv. No. 731-TA-749 (Second Review)*, INV-FF-020, March 3, 2008, tables I-3, I-5, and I-6; and data for 2007-12 are compiled from data submitted in response to Commission questionnaires.

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

Section 751(c) of the Act requires Commerce and the Commission to conduct a review no later than five years after the issuance of an antidumping or countervailing duty order or the suspension of an investigation to determine whether revocation of the order or termination of the suspended investigation “would be likely to lead to continuation or recurrence of dumping or a countervailable subsidy (as the case may be) and of material injury.”

Section 752(a) of the Act provides that in making its determination of likelihood of continuation or recurrence of material injury--

(1) IN GENERAL.-- . . . the Commission shall determine whether revocation of an order, or termination of a suspended investigation, would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time. The Commission shall consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the order is revoked or the suspended investigation is terminated. The Commission shall take into account--

(A) its prior injury determinations, including the volume, price effect, and impact of imports of the subject merchandise on the industry before the order was issued or the suspension agreement was accepted,

(B) whether any improvement in the state of the industry is related to the order or the suspension agreement,

(C) whether the industry is vulnerable to material injury if the order is revoked or the suspension agreement is terminated, and

(D) in an antidumping proceeding . . ., (Commerce’s findings) regarding duty absorption . . .

(2) VOLUME.--In evaluating the likely volume of imports of the subject merchandise if the order is revoked or the suspended investigation is terminated, the Commission shall consider whether the likely volume of imports of the subject merchandise would be significant if the order is revoked or the suspended investigation is terminated, either in absolute terms or relative to production or consumption in the United States. In so doing, the Commission shall consider all relevant economic factors, including--

(A) any likely increase in production capacity or existing unused production capacity in the exporting country,

(B) existing inventories of the subject merchandise, or likely increases in inventories,

(C) the existence of barriers to the importation of such merchandise into countries other than the United States, and

(D) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products.

(3) PRICE.--In evaluating the likely price effects of imports of the subject merchandise if the order is revoked or the suspended investigation is terminated, the Commission shall consider whether--

- (A) there is likely to be significant price underselling by imports of the subject merchandise as compared to domestic like products, and*
- (B) imports of the subject merchandise are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of domestic like products.*

(4) IMPACT ON THE INDUSTRY.--In evaluating the likely impact of imports of the subject merchandise on the industry if the order is revoked or the suspended investigation is terminated, the Commission shall consider all relevant economic factors which are likely to have a bearing on the state of the industry in the United States, including, but not limited to--

- (A) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity,*
- (B) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, and*
- (C) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.*

The Commission shall evaluate all such relevant economic factors . . . within the context of the business cycle and the conditions of competition that are distinctive to the affected industry.

Section 752(a)(6) of the Act states further that in making its determination, “the Commission may consider the magnitude of the margin of dumping or the magnitude of the net countervailable subsidy. If a countervailable subsidy is involved, the Commission shall consider information regarding the nature of the countervailable subsidy and whether the subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement.”

Organization of report

Information obtained during the course of the review that relates to the statutory criteria is presented throughout this report. A summary of trade and financial data for persulfates as collected in the review is presented in appendix C. U.S. industry data are based on the questionnaire responses of the one U.S. producer of persulfates that is believed to have accounted for all known U.S. production of persulfates in 2012. U.S. import data and related

information are based on the questionnaire responses of 11 U.S. importers of persulfates that are believed to have accounted for all known U.S. imports from China and 90.0 percent of all other U.S. imports during the period examined. Foreign industry data and related information are based on a confidential study report on persulfates from China done by ***. The Commission received only one *** from United Initiators (Shanghai) Co., Ltd. (“UI Shanghai”).¹⁴ Responses by U.S. producers, importers, and purchasers of persulfates to a series of questions concerning the significance of the existing antidumping duty order and the likely effects of revocation of such an order are presented in appendix D.

COMMERCE’S REVIEWS

Administrative reviews¹⁵

Commerce has completed eight administrative reviews of the outstanding antidumping duty order on persulfates from China.¹⁶ The results of the administrative reviews are shown in table I-2.

¹⁴ In 2012, UI Shanghai accounted for *** of total production of persulfates in China. UI Shanghai reported it ***. In 2011, ***, it accounted for *** percent of total 2012 production (Chinese production data for 2011 are unavailable).

¹⁵ Commerce has issued no duty absorption findings with respect to persulfates from China.

¹⁶ For previously reviewed or investigated companies not included in an administrative review, the cash deposit rate continues to be the company-specific rate published for the most recent period.

Table I-2
Persulfates: Administrative reviews of the antidumping duty order for China

Action	Effective date	Federal Register citation	Period of review	Antidumping duty margins (Percent ad valorem)			
				Ai Jian	Guangdong	Wuxi	All others
Administrative review	12/13/99	64 FR 69494 ¹	12/27/96-06/30/98	5.54	--	7.37	--
Administrative review	07/31/00	65 FR 46691	07/01/98-06/30/99	2.62	--	--	119.02
Administrative review	08/14/01	66 FR 42628	07/01/99-06/30/00	0.04 ²	--	--	119.02
First five-year review	10/04/02	67 FR 62226	(³)	34.41	34.97	32.22	119.02
Administrative review	02/10/03	68 FR 6712	07/01/00-06/30/01	0.0 ²	--	--	--
Administrative review	12/05/03	68 FR 68030	07/01/01-06/30/02	0.0 ²	--	--	--
Administrative review	02/09/05	70 FR 6836	07/01/02-06/30/03	3.30	--	--	--
Administrative review	02/14/06	71 FR 7725	07/01/03-06/30/04	36.53	--	--	--
Administrative review	03/17/06	71 FR 13810	07/01/04-06/30/05	Requests for administrative reviews rescinded			
Administrative review	12/19/06	71 FR 75935	07/01/05-06/30/06				
Administrative review	01/16/08	73 FR 2900	07/01/06-06/30/07				
Second five-year review	03/05/08	73 FR 11868	(³)	34.41	34.97	32.22	119.02
Administrative review	01/08/09	74 FR 798	07/01/07-06/30/08	Requests for administrative reviews rescinded			
Administrative review	01/14/10	75 FR 2112	07/01/08-06/30/09				
Administrative review	05/17/11	76 FR 28419	07/01/09-06/30/10	--	--	--	119.02 ⁴

¹ Amended by 65 FR 1356, January 10, 2000.

² *De minimis*.

³ Not applicable.

⁴ Includes United Initiators.

Source: Cited *Federal Register* notices.

Changed circumstances review

Commerce has conducted one changed circumstances review with respect to persulfates from China. On August 27, 2002, Commerce initiated an administrative review of the antidumping duty order on persulfates covering one exporter, Shanghai Ai Jian Import and Export Corporation (“Ai Jian”), and its wholly-owned subsidiary, Shanghai Ai Jian Reagent Factory (“AJ Works”). As part of this review, Commerce considered whether it was appropriate to revoke the antidumping duty order with respect to Ai Jian and AJ Works. On January 7, 2003, FMC notified Commerce that Degussa AG (“Degussa”) had purchased 70 percent of AJ Works. AJ Works changed its name to Degussa-AJ (Shanghai) Initiators Co., Ltd (“Degussa-AJ”). FMC requested a changed circumstances review to determine whether Degussa-AJ is the same entity as AJ Works with respect to the pending revocation request. On December 5, 2003, Commerce issued its final results and determined that Degussa-AJ’s factors of production have not changed substantially since Degussa AG’s investment in AJ Works. As a result, Commerce will consider in any relevant future revocation inquiry any administrative reviews in which Ai Jian procured its products exported to the United States from AJ Works.¹⁷

Five-year reviews

On July 8, 2013, Commerce issued the final results of its expedited review with respect to persulfates from China.¹⁸ In its final results, Commerce found that revocation of the antidumping duty order on persulfates from China would be likely to lead to continuation or recurrence of dumping at margins determined in its original final determination for all others. Table I-3 presents the antidumping margins calculated by Commerce in its original investigation, first five-year review, second five-year review, and third five-year review.

¹⁷ *Persulfates from the People’s Republic of China: Notice of Final Results of Changed Circumstances Review*, 68 FR 234, December 5, 2003; *Persulfates from the People’s Republic of China: Notice of Initiation of Changed Circumstances Review*, 68 FR 40, February 28, 2003.

¹⁸ *Persulfates from the People’s Republic of China: Final Results of Expedited Third Sunset Review of Antidumping Duty Order*, 78 FR 40695, July 8, 2013.

Table I-3
Persulfates: Commerce’s original, first five-year, second five-year review, and third five-year review antidumping margins for producers/exporters in China

Producer/exporter	Original margin (percent)	First five-year review margin (percent)	Second five-year review margin (percent)	Third five-year review margin (percent)
Shanghai Ai Jian Import & Export Corporation (Ai Jian)	34.41	34.41	34.41	119.02
Guangdong Petroleum Chemical Import and Export Trade (Guangdong)	34.97	34.97	34.97	119.02
Sinochem Jiangsu Wuxi Import & Export Corporation (Wuxi)	32.22	32.22	32.22	119.02
All others	119.02	119.02	119.02	119.02

Source: Notice of Amended Antidumping Duty Order: Persulfates from the People’s Republic of China, 62 FR 39212, July 22, 1997; Final Results of Expedited Sunset Review: Persulfates from the People’s Republic of China, 67 FR 62226, October 4, 2002; Persulfates from the People’s Republic of China: Notice of Final Results of Expedited Second Sunset Review of Antidumping Duty Order, 73 FR 11868, March 5, 2008; and Persulfates from the People’s Republic of China: Final Results of Expedited Third Sunset Review of Antidumping Duty Order, 78 FR 40695, July 8, 2013.

THE SUBJECT MERCHANDISE

Commerce’s scope

Commerce has defined the scope of this investigation as follows:

The products covered by the order are persulfates, including ammonium, potassium, and sodium persulfates. The chemical formula for these persulfates are, respectively, $(NH_4)_2S_2O_8$, $K_2S_2O_8$, and $Na_2S_2O_8$. Potassium persulfates are currently classifiable under subheading 2833.40.10¹⁹ of the Harmonized Tariff Schedule of the United States (“HTSUS”). Sodium persulfates are classifiable under HTSUS subheading 2833.40.20. Ammonium and other persulfates are classifiable under HTSUS subheadings 2833.40.50 and 2833.40.60.¹⁹ Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the scope of the order is dispositive.²⁰

¹⁹ Subheading 2833.40.60 superseded subheadings 2833.40.10 and 2833.40.50. *Presidential Proclamation 6763 of December 23, 1994, To Implement the Trade Agreements Resulting from the Uruguay Round of Multilateral Trade Negotiations, and for Other Purposes*, 60 FR 1007, 1151, January 4, 1995.

²⁰ *Persulfates from the People’s Republic of China: Final Results of Expedited Third Sunset Review of Antidumping Duty Order*, 78 FR 40695, July 8, 2013.

Tariff treatment

Persulfates are classifiable in the Harmonized Tariff Schedule of the United States (“HTS”) under subheadings 2833.40.20 and 2833.40.60. The normal trade relations rate of duty for persulfates under HTS subheading 2833.40.20 is 3.7 percent *ad valorem* and under subheading 2833.40.60 is 3.1 percent *ad valorem*.

THE PRODUCT

Description and applications

The imported products subject to this review are peroxydisulfates, commonly known as persulfates. The three salts²¹ included in this review are ammonium persulfate ((NH₄)₂S₂O₈), potassium persulfate (K₂S₂O₈), and sodium persulfate (Na₂S₂O₈). Persulfates are produced in the form of a dry white crystalline powder that is odorless. The three salts are indistinguishable when subject to a visual or tactile exam. The three salts are marketed in different grades,²² but the chemistry remains unchanged across grades.²³ They are all derived from persulfuric acid. The active ingredient for all three salts is the persulfate anion. Figure I-1 presents the chemical structure of persulfates.

Persulfates have a variety of applications. Persulfates serve as initiators of polymerization to produce plastics and rubber, structural materials such as concrete, soil stabilizers, and coatings. As oxidants, persulfates are used in cleaning, microetching, and plating processes. Persulfates are also used in applications such as producing adhesives, gas and oil recovery, inks and pigments, mining, photography, and pulp and paper production.

Both domestic and imported persulfates are believed to be sold in substantial quantities to end users as well as distributors. In the original investigation, parties agreed that the channels of distribution for Chinese and domestic products were the same.

In the original investigation and both the first and second expedited five-year reviews, the Commission determined that persulfates produced in the United States and China were interchangeable, commodity-like products.²⁴ In its response to the Notice of Institution of this third five-year review, FMC contends that these products are even more interchangeable than before.²⁵

²¹ A salt is a compound, generally of two chemical species with an opposite charge. The persulfates share the same negatively-charged species (anion), the peroxodisulfate ion and vary by the positively charged species (ammonium, sodium, and potassium).

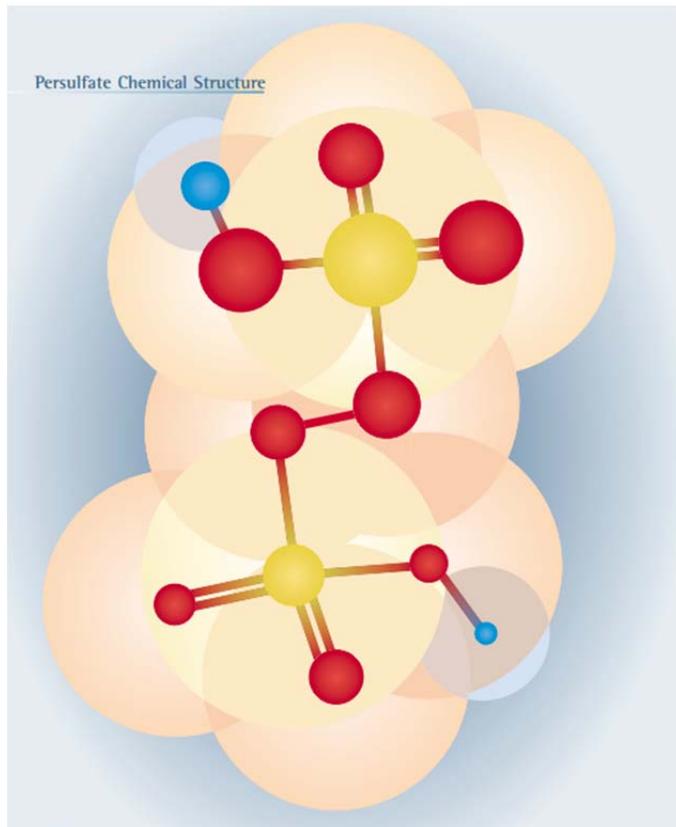
²² FMC’s prehearing brief, p. 58.

²³ Hearing transcript, p. 49 (Lerner).

²⁴ *Persulfates from China, Inv. No. 731-TA-749 (Final)*, USITC Pub. 3044, June 1997, pp. 15-16; *Persulfates from China, Inv. No. 731-TA-749 (Review)*, USITC Pub. 3555, October 2002, p. 8; *Persulfates from China, Inv. No. 731-TA-749 (Second Review)*, USITC Pub. 3988, March 2008, p. 9.

²⁵ *FMC’s Response to the Notice of Institution*, April 1, 2013, p. 19.

Figure I-1
Persulfates: Chemical structure



Source: FMC Corporation,
http://www.fmcchemicals.com/LinkClick.aspx?fileticket=y_0DZcxPM4w%3d&tabid=4686&mid=10400,
retrieved December 11, 2013.

Manufacturing processes

The manufacturing processes for ammonium, potassium, and sodium persulfates are similar. Production begins in an electrolytic cell where liquid ammonium persulfate is produced as an intermediate product. This liquid ammonium persulfate is then crystallized into a wet cake, which is fed into the ammonium, sodium, and potassium persulfate downstream production, in which the wet cake is further processed in a fluid bed dryer and then packaged for shipment. One difference between the salts is the removal and recycling of the ammonia that is released in the sodium and potassium persulfates production processes. The recycling of ammonia is a critical material-balance issue which requires that the ammonium persulfate line be running in order to produce sodium or potassium persulfate.

Information developed in the original investigation indicated that the three persulfate salts are manufactured in the same plant, using the same or similar equipment and production workers. There are no known significant differences in the persulfate production processes used in China and the United States, although information collected during the original investigation indicated that at that time the Chinese process may have been slightly less automated.

DOMESTIC LIKE PRODUCT ISSUES

In its original determination, the Commission defined the domestic like product as one like product consisting of ammonium, sodium, and potassium persulfates.²⁶ In its notice of institution in this current five-year review, the Commission solicited comments from interested parties regarding the appropriate domestic like product and domestic industry.²⁷ FMC (the only firm to respond to the notice of institution) commented on the Commission's definition of the domestic like product and indicated it agrees with the Commission's definitions of a domestic like product and domestic industry.²⁸ No party requested that the Commission collect data concerning other possible domestic like products in their comments on the Commission's draft questionnaires. In its prehearing and posthearing submissions, counsel for FMC agreed with the definition of the domestic like product and the domestic industry set forth in the original investigation.²⁹ No other interested party provided further comment on the domestic like product.

U.S. MARKET PARTICIPANTS

U.S. producer

During the original investigation, FMC supplied the Commission with information on its U.S. operations with respect to persulfates. FMC accounted for all known U.S. production of persulfates during the original investigation.³⁰ FMC accounted for all known U.S. production of product in the first five-year review³¹ and in the second five-year review.³² In this current proceeding, the Commission issued U.S. producers' questionnaires to one firm, FMC, which provided the Commission with information on its product operations. FMC is believed to account for all known U.S. production of persulfates during the period of review. Presented in table I-4 is FMC's position on continuation of the order, production location, related and/or affiliated firms, and share of reported production of persulfates in 2012.

²⁶ *Persulfates from China, Inv. No. 731-TA-749 (Final)*, USITC Publication 3044 (June 1997), p. 5.

²⁷ *Persulfates From China; Institution of a Five-Year Review Concerning the Antidumping Duty Order on Persulfates from China*, 78 FR 13891, March 1, 2013, as corrected by *Persulfates from China; Correction to Notice of Institution*, 78 FR 14591, March 6, 2013.

²⁸ *Substantive Response of FMC Corporation*, p. 39.

²⁹ FMC's prehearing brief, pp. 6-7 and FMC's posthearing brief, p. 1.

³⁰ *Persulfates from China, Inv. No. 731-TA-749 (Final)*, USITC Publication 3044, June 1997, p. I-1.

³¹ *Persulfates from China, Inv. No. 731-TA-749 (Review)*, USITC Publication 3555, October 2002, p. I-3 fn. 2.

³² *Persulfates from China, Inv. No. 731-TA-749 (Second Review)*, USITC Publication 3988, March 2008, p. I-1 fn. 4.

Table I-4

Persulfates: U.S. producer, position on order, U.S. production location, related and/or affiliated firms, and share of 2012 reported U.S. production

Firm	Position on continuation of the order	U.S. production location(s)	Related and/or affiliated firms	Share of production 2012 (percent)
FMC	Support	Tonawanda, NY	Rhein PerChemie GmbH (Germany)	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

As indicated in table I-4, FMC is *** of the subject merchandise. In addition, as discussed in greater detail in Part III, FMC *** the subject merchandise, but *** the subject merchandise from U.S. importers.

U.S. importers

In the original investigation, 17 U.S. importing firms supplied the Commission with usable information on their operations involving the importation of persulfates, accounting for 100.3 percent of total U.S. imports of persulfates during 1996.³³ During the first expedited review FMC identified six U.S. importers of persulfates from China. According to official Commerce statistics, imports of persulfates from China decreased by 38.9 percent from 1996 to 2001.³⁴ During the second expedited review, FMC identified 26 known U.S. importers of persulfates from China. FMC explained that U.S. imports from China increased during much of the period of review because a large producer of persulfates in China, Shanghai Ai Jian Import & Export Corporation (“Ai Jian”), obtained a *de minimis* antidumping duty margin from Commerce and began exporting to the United States in greater volumes. However, in February 2006, Commerce published its final results of its review and Ai Jian was found to be dumping again at an antidumping duty rate of 36.53 percent. U.S. imports of persulfates from China fell by 73.4 percent from 2001 to 2006.³⁵

In the current proceeding, the Commission issued U.S. importers’ questionnaires to 12 firms believed to be importers of persulfates, as well as to the U.S. producer of persulfates. Usable questionnaire responses were received from 11 firms, representing all known U.S. imports of persulfates from China and 90.0 percent of nonsubject imports from all other countries during the period of review. Table I-5 lists all responding U.S. importers of persulfates, their locations, their related or affiliated firms, and their shares of U.S. imports in 2012.

³³ *** *Persulfates from China Inv. No. 731-TA-749 (Final)*, INV-U-046, June 3, 1997, p. III-2.

³⁴ *Persulfates from China, Inv. No. 731-TA-749 (Review)*, USITC Publication 3555, October 2002, pp. I-7-I-8.

³⁵ *Persulfates from China, Inv. No. 731-TA-749 (Second Review)*, USITC Publication 3988, March 2008, p. I-9 and table I-4.

Table I-5
Persulfates: U.S. importers, source(s) of imports, U.S. headquarters, and shares of imports in 2012

Firm	Location	Related or affiliated firm(s)	Share of total imports in 2012 (percent)
Aceto Corporation	Port Washington, New York	***	***
American International Chemical, Inc.	Framingham, Massachusetts	***	***
Ayers International Corp.	Greenwich, Connecticut	***	***
Cambrian Chemicals Inc. ¹	Oakville, Ontario	***	***
Chemical International Corp.	Succasunna, New Jersey	***	***
FMC Corporation	Philadelphia, Pennsylvania	***	***
Mitsubishi International Polymer Trade Corporation	Newark, New Jersey	***	***
SigmaAldrich ²	St. Louis, Missouri	***	***
Skyhawk Chemicals Inc.	Houston, Texas	***	***
Special Materials Company ³	New York, NY	***	***
United Initiators, Inc.	Elyria, Ohio	***	***

¹ ***.

² ***.

³ ***.

Note.—There were *** imports from China in 2012.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. purchasers

The Commission received eight usable questionnaire responses from firms that purchased persulfates during 2007-13, accounting for 60.2 percent of the total U.S. consumption of persulfates in 2012.³⁶ Five responding purchasers are end users and four are distributors.³⁷ In general, responding U.S. purchasers were located in the Midwest, East Coast, and Southwest. The largest purchasers of persulfates are ***, ***, and ***.

³⁶ Of the eight responding purchasers, eight purchased the domestic product, none purchased imports of the subject merchandise from China, and five purchased imports of persulfates from other sources.

³⁷ One purchaser reported that it was both a distributor and end user of persulfates.

APPARENT U.S. CONSUMPTION

Data concerning apparent U.S. consumption of persulfates during the period for which data were collected in this proceeding are shown in table I-6 and figure I-2. Apparent U.S. consumption in each full year of the period of review averaged approximately *** pounds except in 2009 which was lower and is consistent with trends in the broader economy. The volume in apparent U.S. consumption was higher in interim 2012 than in interim 2013 primarily due to the collapse of the recreational water treatment market and disappointing demand in the oil and gas recovery market.³⁸ From 2007 to 2012, apparent U.S. consumption by quantity increased by *** percent.

Table I-6
Persulfates: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2007-12, January-September 2012, and January-September 2013

Item	Calendar year						January - September	
	2007	2008	2009	2010	2011	2012	2012	2013
	Quantity (1,000 pounds)							
U.S. producer's shipments	***	***	***	***	***	***	***	***
U.S. shipments of imports from--								
China	***	***	***	***	***	***	***	***
All other sources	12,703	10,456	8,817	9,935	12,518	11,152	8,729	11,508
Total import shipments	***	***	***	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***	***	***	***
	Value (\$1,000)							
U.S. producer's shipments	***	***	***	***	***	***	***	***
U.S. shipments of imports from--								
China	***	***	***	***	***	***	***	***
All other sources	9,007	8,668	8,343	8,936	11,936	10,453	8,378	10,055
Total import shipments	***	***	***	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure I-2
Persulfates: U.S. shipments of domestic product and U.S. shipments of imports, 2007-12, January-September 2012, and January-September 2013

* * * * *

³⁸ FMC's prehearing brief, p. 12.

U.S. MARKET SHARES

U.S. market share data are presented in table I-7. U.S. producer's share of shipments increased during the period examined corresponding to a decrease in nonsubject sources' share of shipments. Subject sources' share of shipments were *** percent throughout the period examined.

Table I-7
Persulfates: U.S. consumption and market shares, 2007-12, January-September 2012, and January-September 2013

* * * * *

PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

U.S. MARKET CHARACTERISTICS

Persulfates are commodity chemicals used in many industrial processes and commercial products. The three types of persulfates included in this review are ammonium persulfate, potassium persulfate, and sodium persulfate. These persulfates are used in various downstream products and applications including: plastics and rubbers, surface preparation, polymerization applications, hair care, inks and pigments, film processing, circuit board etchants, pulp and paper products, desizing and bleaching of textiles, and water treatment. Firms reported that persulfates were used primarily in polymerization applications, oil and gas recovery, and cosmetics and pharmaceutical products (table II-1).

Table II-1

Persulfates: Commercial U.S. shipments of producers, importers, and purchasers by end use, 2012

Item	U.S. producers	Imports from all sources	Purchasers
	<i>Share of quantity (percent)</i>		
Cosmetics and pharmaceuticals	***	17.2	4.3
Electronics (e.g. printed circuit board etchants)	***	2.9	0.5
Environmental remediation	***	1.2	0.2
Oil and gas recovery	***	30.7	45.6
Polymerization applications	***	34.9	15.1
Pool and spa supply	***	0.6	3.2
Pulp and paper	***	0.0	10.5
Textiles	***	0.0	6.2
Other	***	12.5	14.4
Total	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

The U.S. persulfate market is mature and growth is anticipated to remain minimal or low.¹ Demand for persulfates has shifted in several end use applications since the last review. Demand has grown primarily only in two markets: soil remediation and oil and gas recovery, while demand for persulfates in all other applications has either remained stable or declined, and the use of persulfates in pool shock products and printed circuit board applications has largely disappeared.²

¹ Hearing transcript, p. 15 (Lerner).

² FMC's prehearing brief, pp. 6, 19-20; hearing transcript, p. 18 (Ball). FMC noted that the electronic industry has moved to Asia, and therefore the U.S. demand for this application has discontinued. Hearing transcript, p. 63 (Ball).

U.S. PURCHASERS

The Commission received eight purchaser questionnaires from firms that have purchased persulfates since January 1, 2007. These purchasers reported purchasing approximately 32.0 million pounds of persulfates in 2012. Purchasers reported that 89.7 percent of their 2012 purchases were of persulfates produced in the United States and the remaining 10.3 percent were of persulfates from nonsubject countries.³

Five responding purchasers are end users and four are distributors.⁴ The largest responding purchasers of persulfates are ***, ***, and ***. ***, which accounted for *** percent of U.S. persulfate consumption in 2012, reported that nearly all of its purchases (***) were used in oil and gas recovery applications. *** accounted for *** percent of U.S. persulfate consumption in 2012 and reported that its purchases were primarily used in polymerization applications, chemical manufacturing, and pool and spa supplies. *** accounted for *** percent of U.S. persulfates consumption in 2012 and reported that its purchases of persulfates were used in architectural coatings, construction chemicals, industrial coatings, consumer and industrial solutions, packaging and specialty plastics, and oil, gas and mining applications.

CHANNELS OF DISTRIBUTION

Persulfates were sold mainly to *** during the period of review. The U.S. producer and importers of persulfates from nonsubject countries sold *** while importers' shipments of persulfates from China were *** (table II-2).⁵

Table II-2

Persulfates: U.S. producers' and importers' U.S. shipments, by sources and channels of distribution, 2007-12, January-September 2012, and January-September 2013

* * * * *

GEOGRAPHIC DISTRIBUTION

FMC reported selling persulfates to *** (table II-3). One of two responding importers reported selling to ***; the other importer reported selling to ***.⁶ For FMC, *** percent of sales were within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. One of two responding importers reported that it sold *** percent within 100 miles of its U.S. point of shipment. The other importer reported

³ Purchasers reported buying persulfates imported from Germany, India, and Taiwan.

⁴ One purchaser reported that it was both a distributor and an end user of persulfates.

⁵ Three importers reported U.S. shipments of persulfates imported from China in ***. Importer *** reported a single U.S. shipment to ***; *** reported a single U.S. shipment to ***; and *** reported selling very small quantities of subject product ***.

⁶ Importer *** reported selling only a single U.S. shipment of persulfates to from China.

that it sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table II-3

Persulfates: Geographic market areas in the United States served by U.S. producer and importers

* * * * *

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Domestic production

Based on available information, the U.S. producer FMC has the ability to respond to changes in demand with small-to-moderate changes in the quantity of shipments of U.S.-produced persulfates to the U.S. market. The main contributing factors to the small-to-moderate degree of responsiveness of supply are the limited availability of ***; supply responsiveness is somewhat increased by ***.

Industry capacity

Domestic capacity utilization fluctuated during the period of review but increased overall from *** percent in 2007 to *** percent in 2012. FMC's capacity utilization was *** percent in the interim 2012 compared to *** percent in the interim 2013. Capacity *** during 2007-11 and *** in 2012.⁷ This *** level of capacity utilization suggests that U.S. producers may have limited capacity to increase production of product in response to an increase in prices.⁸

Alternative markets

The U.S. producer's exports, as a percentage of total shipments, remained relatively constant during the period of review. FMC's export shipments ranged from *** percent to *** percent during 2007-12, indicating that the U.S. producer may have some ability to shift shipments between the U.S. market and other markets in response to price changes. ***.

Inventory levels

FMC's inventories, as a share of total shipments, increased irregularly from *** percent in 2007 to *** percent in 2012, and was *** percent in the 2012 interim period and *** percent in the 2013 interim period. Persulfates have a limited shelf-life, ranging from 3 to 12

⁷ FMC reported that ***. It reported that ***. Producer questionnaire response, sections II-2 and IV-15.

⁸ FMC reported that ***. Producer questionnaire response, section II-2.

months, after which the product begins to cake, becoming unusable.⁹ These inventory levels suggest that the U.S. producer may have limited ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

FMC reported that ***.

Changes in supply

FMC ***.

Subject imports from China

The Commission received one questionnaire response from Chinese producer ***. However, it only provided capacity and production data for 2008-12 and ***.¹⁰ ***. According to this industry report, ***.¹¹ Capacity utilization was *** in 2012. This report expects ***.¹² ***.¹³

As shown in figure II-1, *** from 2007 to 2012. The primary product that China exports is ***.¹⁴

**Figure II-1
Persulfates: Chinese exports of persulfates, 2007-12**

* * * * *

Nonsubject imports

The largest sources of nonsubject imports during the period of review were Germany, India, Japan and Taiwan. Combined, these countries accounted for 98.8 percent of nonsubject imports in 2012.

*** reported that nonsubject imports have increased in 2013 interim. This increase was reportedly driven by weak demand for persulfates in Europe and other regions resulting in producers in those regions shifting their shipments to the U.S. market.

⁹ FMC's prehearing brief, p. 32.

¹⁰ Email from ***, November 25, 2013.

¹¹ ***.

¹² ***.

¹³ ***.

¹⁴ ***.

New suppliers

Seven of eight purchasers indicated that new suppliers have not entered the U.S. market since 2007, and all eight do not expect additional entrants. One purchaser (***) reported that it was offered persulfates by a U.S. distributor from Adeka (Japan) and that it was directly approached by Indian producer, Finoric.

U.S. demand

U.S. demand for persulfates is cyclical and tied to trends in the housing, automotive, pool supply, oil and gas recovery, environmental remediation, and other markets. Based on available information, the overall demand for persulfates is likely to experience small changes in response to changes in price. The main contributing factors are the somewhat limited range of substitute products and the small cost share of product in most of its end-use products.

End uses

U.S. demand for persulfates depends on the demand for U.S.-produced downstream products for which they are an input. Reported end uses for persulfates include latex, emulsion polymers, paper chemicals, hair care, film processing, environmental remediation, and oil and gas. In 2012, persulfates were used predominantly in polymerization applications, oil and gas recovery, and environmental remediation.

While most firms (all 6 importers and 7 of 8 purchasers) reported no changes in end uses, *** reported that there have been changes in the demand for persulfates in several industries since 2007. *** stated that sales in environmental remediation have increased ***. It also reported that use of persulfates in the oil and gas industry has increased during 2007-12 due to drilling in shale formations.¹⁵ *** noted, however, that sodium persulfates used in pool shock products have been discontinued.

*** reported that demand for persulfates in certain end uses have continued to shift since 2012 (figure II-2). It reported that while in 2012, *** percent of its commercial shipments went to pool and spa supply, ***.¹⁶ It also noted a significant decrease in persulfates used in oil and gas industry driven by technology evolution in the process of extracting oil and gas from shale formations.¹⁷ FMC stated that it does not anticipate that demand for persulfates in the oil and gas recovery markets to recover to the levels that it experienced in the last couple of

¹⁵ Persulfates act as breakers to reduce gel viscosity during the well drilling and completion process. "FMC has invested substantial resources in research and development for the use of persulfates in the oil and gas recovery market. ***." FMC's prehearing brief, p. 6.

¹⁶ FMC reported that one purchaser (Biolab) was the sole customer of persulfates for pool shock products. However, the purchaser recently changed its pool product formulations away from persulfates to an alternative formulations that were lower in cost. Hearing transcript, pp.61-62 (Lerner) and p. 95 (Ball).

¹⁷ Hearing, p. 21 (Ball).

years.¹⁸ *** reported increases in commercial shipments to polymerization applications and environmental remediation.

Figure II-2

Persulfates: U.S. producer's share of U.S. commercial shipments to end uses, 2012-13

* * * * *

Most firms (all 6 importers and 6 of 8 purchasers) reported that they do not anticipate changes in end uses. However, *** and two purchasers reported that they expect changes in the demand for persulfate end uses. Purchaser *** reported that it anticipates a slight increase in persulfate use in industrial coatings. Purchaser *** reported that changes in application are likely to decrease the amount of product required in persulfate application.

Business cycles

***, all seven responding importers, and 5 of seven responding purchasers reported that persulfates were not subject to business cycles or conditions of competition distinctive to persulfates. Two purchasers indicated that the market was subject to business cycles, noting the cyclical industries that persulfates are used in, specifically in swimming pools and other recreational water as well as the cyclical demand for oilfield production.

Apparent consumption

Apparent U.S. consumption of persulfates remained relatively unchanged during 2007-08, decreased in 2009 during the general economic recession, and then recovered during 2010-12. Apparent consumption declined during 2013 interim, "primarily due to the collapse of the recreational water treatment market and disappointing demand in the oil and gas recovery market."¹⁹ Overall, apparent U.S. consumption in 2012 was *** percent higher than in 2007.

Demand trends

A plurality of firms reported that U.S. demand for persulfates had remained unchanged since 2007 and expected demand to remain constant over the next two years (table II-4). *** reported that demand for persulfates decreased during the 2008-09 recession then recovered due to the increased use of persulfates in the oil and gas industry and in soil remediation. The demand for persulfates in oil and gas peaked in 2012 and has since plateaued due to a reduction in drilling activity and improved oil well efficiencies. *** also noted that the recent recovery in polymer demand has been offset by the loss of persulfates in the pool and water treatment applications. Importer *** and purchasers *** and *** also noted the growing demand for persulfates in the oil and gas industry. Purchaser *** reported that demand for

¹⁸ Hearing transcript, pp. 47-48 (Lerner).

¹⁹ FMC's prehearing brief, p. 12.

persulfates in oil field fracturing applications has increased, however new technology is offsetting demand.

*** anticipates that demand for persulfates will continue to fluctuate. It noted that there is modest growth expected in the housing and auto market which uses persulfates in polymer applications. It also noted that applications in soil remediation and oil and gas will continue to grow, however, the growth in the oil and gas industry will be much slower than initially anticipated.

Table II-4
Persulfates: Firms' responses regarding U.S. demand

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Demand since 2007:				
U.S. producers	***	***	***	***
Importers	2	3	0	1
Purchasers	2	3	0	2
Anticipated future demand:				
U.S. producers	***	***	***	***
Importers	2	3	0	1
Purchasers	1	3	0	3
Demand for purchasers' final products since 2007:				
U.S. purchasers	1	2	1	1

Source: Compiled from data submitted in response to Commission questionnaires.

Substitute products

Substitutes for persulfates are limited. Most importers and purchasers reported that there were no substitutes and did not anticipate any future changes in substitutes. However, ***, one importer, and two purchasers identified substitutes for persulfates. *** reported that permanganate and hydrogen peroxide are substitutes for persulfates in environmental remediation; perborates, sodium chlorite, peroxides, and acids are substitutes in oil and gas applications; and potassium monopersulfates are substitutes in pulping, pool shock treatment and metal etching applications. *** reported that changes in the price of these substitutes do not affect the price for persulfates. *** also identified perborates as a substitute for persulfates used in oilfield breakers; however, it reported that perborates tend to be more expensive than persulfates. ***, reported that bromates, organic peroxides, and inorganic peroxides are substitutes for gel breaking used in oil and gas applications; and it reported that these substitutes do not affect the price of persulfates. Purchaser *** identified two substitutes, imidazole and ammonium thiocyanate, for processing motion picture film, but noted that these substitutes were more expensive. Both *** and *** anticipate new substitutes in oil and gas applications and noted that significant research and development of products with improved efficiencies are already underway in this industry.

Cost share

For the majority of end-use products, the share that persulfates account for in the total final cost is small. Reported cost shares for some end uses were 1 percent polymers and paper chemicals; 5 percent for hair colorants and feminine products; and 15 percent for environmental remediation projects. Firms reported a wide cost share range for oil and gas projects; *** reported a cost share of 1 percent while *** reported a range of 28-45 percent.

Foreign demand trends

Most firms reported unchanged foreign demand for persulfates since 2007 (table II-5). A plurality of firms expect demand to remain unchanged over the next two years. According to FMC, “***.”

Table II-5
Persulfates: Firms’ responses regarding demand outside of the United States, by number of responding firms

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Demand since 2007:				
U.S. producers	***	***	***	***
Importers	0	4	0	0
Purchasers	1	3	0	1
Anticipated future demand:				
U.S. producers	***	***	***	***
Importers	1	3	0	0
Purchasers	0	2	0	3

Source: Compiled from data submitted in response to Commission questionnaires.

SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported product depends upon such factors as relative prices, quality (*e.g.*, grade standards, reliability of supply, defect rates, etc.), and conditions of sale (*e.g.*, price discounts/rebates, lead times between order and delivery dates, payment terms, product services, etc.). Based on available data, staff believes that there is a moderate-to-high degree of substitutability between domestically produced product and product imported from China.

Lead times

Persulfates are primarily sold from inventory. FMC reported that *** percent of its commercial shipments came from inventories, with lead times averaging ***. The remaining *** percent of its commercial shipments were produced-to-order, with lead times averaging ***. One importer reported that all of its commercial shipments of persulfates from China

came from inventories, with lead times averaging 1-2 days. One nonsubject importer reported that all of its commercial shipments came from its foreign manufacturer’s inventory, with lead times averaging 30 days.

Knowledge of country sources

All eight purchasers indicated they had marketing/pricing knowledge of domestic product, three of Chinese product, and seven of persulfates produced in nonsubject countries.

As shown in table II-6, most purchasers reported that they sometimes or never make purchasing decisions involving persulfates based on the country of origin of the product but, on the whole, they are more likely to make purchasing decisions based on the identity of the producer. The majority of purchasers reported that quality was most important and that they only worked with established or pre-approved suppliers. Purchasers reported that their customers make purchasing decisions based neither on the country of origin of the product nor on the identity of the producer. Purchasers reported that their customers were most concerned with quality, price, and guarantee of supply. One purchaser stated that “most end users are more price-conscious and quality becomes a secondary concern.”²⁰

Table II-6
Persulfates: Purchasing decisions based on producer and country of origin, by number of reporting firms

Purchaser/Customer Decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	5	1	1	1
Purchaser's customers make decision based on producer	0	1	2	4
Purchaser makes decision based on country	1	1	3	3
Purchaser's customers make decision based on country	0	0	4	3

Source: Compiled from data submitted in response to Commission questionnaires.

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for persulfates were quality (6 firms), reliability of supply (6 firms), and price (4 firms) as shown in table II-7.²¹

²⁰ *** purchaser questionnaire response, section III-14.

²¹ Several purchasers noted more than one factor for the second and third most important purchasing factor.

Table II-7**Persulfates: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by number of reporting firms**

Factor	First	Second	Third	Total
Quality	2	3	1	6
Reliability of supply	1	3	2	6
Price	1	2	1	4
Availability	0	1	2	3
Lead time	0	1	1	2
Other ¹	3	1	3	7

¹ Other factors include particle size, commitment to distribution, and overall value (includes price, payment terms, and delivery costs) for the first factor; purity for the second factor; and supplier relationship, "master distributor agreement," and terms for the third factor.

Source: Compiled from data submitted in response to Commission questionnaires.

Four of eight purchasers reported that they usually make purchasing decisions based on the lowest-priced product; three purchasers reported that they sometimes purchased the lowest-price product and one purchaser reported that it never makes purchasing decisions based on persulfates that are offered at the lowest price.

When asked if they purchased persulfates from one source although a comparable product was available at a lower price from another source, four purchasers reported reasons including reliability of supply, prequalified suppliers, purchase commitments, on-time delivery, shorter lead times, inventory control and good customer service. One of seven purchasers reported that certain types of product were only available from a single source. *** reported that FMC offers persulfates with coarse particle size.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-8). The factors rated as "very important" by the majority of responding purchasers were availability (8 firms), delivery time (8), product consistency (8), reliability of supply (8), price (7), and quality meets industry standards (7).²²

²² Most purchasers (7 of 8) indicated that quality that meets industry standards is very important; only two purchasers indicated that quality that exceeds industry standards is a very important factor in purchasing decisions.

Table II-8
Persulfates: Importance of purchase factors, as reported by U.S. purchasers, by number of responding firms

Factor	Number of firms responding		
	Very important	Somewhat important	Not important
Availability	8	0	0
Delivery terms	4	3	1
Delivery time	8	0	0
Discounts offered	2	4	2
Extension of credit	3	5	0
Minimum quantity requirements	4	1	3
Packaging	3	5	0
Price	7	1	0
Product consistency	8	0	0
Product range	2	3	3
Quality exceeds industry standards	2	5	1
Quality meets industry standards	7	0	1
Reliability of supply	8	0	0
Technical support/service	2	6	0
U.S. transportation costs	4	3	1

Source: Compiled from data submitted in response to Commission questionnaires.

Supplier certification

All eight responding purchasers require that all of the product they purchase be certified. Purchasers reported that the time to qualify a new supplier ranged from 10 to 180 days. One purchaser reported that a German supplier had failed in its attempt to qualify product because of excessive moisture content.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2007 (table II-9); reasons reported for changes in sourcing included fluctuating end-use demand, supplier product trials, price, customer demand, and antidumping duties. ***, a purchaser who purchases only domestically produced persulfates, reported that it expects to decrease its purchases of persulfates because of the impact of growing imports from India, China, and other Asian producers. Seven of eight responding purchasers reported that they had not changed suppliers since 2007.

Table II-9**Persulfates: Changes in purchase patterns from U.S., subject, and nonsubject countries**

Sources of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	0	1	2	4	1
China	7	0	0	0	1
All other countries	3	0	1	2	2

Source: Compiled from data submitted in response to Commission questionnaires.

Importance of purchasing domestic product

Four of eight purchasers reported that purchasing U.S.-produced product was not an important factor in their purchasing decisions. Two reported it was required by their customers (for 50 to 65 percent of their purchases), and two reported other preferences for domestic product (accounting for 97 to 100 percent of their purchases). Reasons cited for preferring domestic product included: particle size, product specification and quality, and the price impact of anti-dumping duties placed on persulfates from China.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing persulfates produced in the United States, China, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table II-10) for which they were asked to rate the importance.

Most purchasers reported that U.S. and Chinese product were comparable on delivery terms, discounts offered, extension of credit, minimum quantity requirements, packaging, price, and U.S. transportation costs. Purchasers reported that domestic product was superior to Chinese product on availability, reliability of supply, and technical support. The majority of purchasers reported that product from the United States and product produced in nonsubject countries were comparable in all categories. The majority of purchasers also reported that product produced in China and product produced in nonsubject countries were comparable in all categories.

Table II-10
Persulfates: Purchasers' comparisons between U.S.-produced and imported product

Factor	U.S. vs. China			U.S. vs. nonsubject countries			China vs. nonsubject countries		
	S	C	I	S	C	I	S	C	I
Availability	4	1	1	3	4	0	0	3	2
Delivery terms	1	4	1	1	6	0	0	4	1
Delivery time	3	2	1	3	4	0	0	3	2
Discounts offered	0	6	0	0	7	0	0	5	0
Extension of credit	1	4	1	1	6	0	0	3	2
Minimum quantity requirements	1	4	1	1	6	0	0	3	2
Packaging	1	4	1	1	6	0	0	4	1
Price ¹	0	5	1	1	5	1	0	5	0
Product consistency	3	2	1	3	4	0	0	3	2
Product range	3	2	1	2	5	0	0	4	1
Quality exceeds industry standards	3	2	1	2	5	0	0	3	2
Quality meets industry standards	3	3	0	1	6	0	0	4	1
Reliability of supply	4	1	1	3	4	0	0	3	2
Technical support/service	4	1	1	3	4	0	0	3	2
U.S. transportation costs ¹	2	4	0	2	5	0	0	4	1

¹ A rating of superior means that price/U.S. transportation costs is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note: S=first listed country's product is superior; C=both countries' products are comparable; I=first list country's product is inferior.

Source: Compiled from data submitted in response to Commission questionnaires.

Comparison of U.S.-produced and imported persulfates

In order to determine whether U.S.-produced persulfates can generally be used in the same applications as imports from China, U.S. producers, importers, and purchasers were asked whether the products can "always," "frequently," "sometimes," or "never" be used interchangeably. As shown in table II-11, the majority of firms reported that persulfates from the United States and from other countries were "always" or "frequently" interchangeable. However, three purchasers reported that persulfates from different sources were only "sometimes" interchangeable. Both *** and *** reported that domestic persulfates and Chinese-produced product were "sometimes" interchangeable. *** reported that the main factors that limit interchangeability are customers' internal specifications and approved supplier lists. *** reported that quality is an important factor in oilfield applications. It stated that heavy metals can be a factor with Chinese product and also noted that particle size distribution can also have an impact. *** reported that persulfates from Germany are only sometimes interchangeable with domestically produced product. It reported that sodium

persulfates from Germany do not clump; however, ammonium persulfates from Germany do clump and therefore are not interchangeable with domestic product.

Table II-11

Persulfates: Perceived interchangeability between persulfates produced in the United States and in other countries, by country pairs

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. China	***	***	***	***	1	3	0	0	1	3	2	0
U.S. vs. nonsubject	***	***	***	***	0	5	0	0	0	5	2	0
China vs. nonsubject	***	***	***	***	0	3	0	0	0	4	1	0

Note.—A=Always, F=Frequently, S=Sometimes, N=Never.

Source: Compiled from data submitted in response to Commission questionnaires.

As shown in table II-12, six of eight responding purchasers reported that domestically produced product “always” met minimum quality specifications. Two of four responding purchasers reported that the Chinese persulfates “always” or “usually” met minimum quality specifications.

Table II-12

Persulfates: Ability to meet minimum quality specifications, by source and number of reporting firms

Source	Number of firms reporting ¹			
	Always	Usually	Sometimes	Rarely or never
United States	6	2	0	0
China	1	1	2	0
Other countries	2	6	2	0

¹ Purchasers were asked how often domestically produced or imported persulfates meet minimum quality specifications for their own or their customers’ uses.

Source: Compiled from data submitted in response to Commission questionnaires.

In addition, producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of persulfates from the United States, China, or nonsubject countries. As seen in table II-13, *** and the majority of importers reported that differences other than price were “sometimes” or “never” a significant factor in their sales of persulfates. However, two importers and four of six responding purchasers reported that these differences other than price were “always” or “frequently” a significant factor. Purchasers reported that quality, availability, product range, guarantee of supply, qualified supplier, and lead times were significant factors. Purchasers *** and *** reported that these factors lead them to purchase domestically produced product. Purchaser *** reported that German product cannot be used in certain end use applications because the product clumps. *** reported that “customers in the U.S. prefer to purchase domestically produced persulfates because of higher reliability of supply, shorter order lead times, and more responsive customer service. However, some importers are able to mitigate this advantage through investment in local sales, customer service, and warehousing. ***.”

Table II-13
Persulfates: Significance of differences other than price between persulfates produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. China	***	***	***	***	0	1	0	3	2	2	2	0
U.S. vs. nonsubject	***	***	***	***	1	1	2	2	2	4	1	0
China vs. nonsubject	***	***	***	***	0	1	1	1	1	2	2	0

Note.--A = Always, F = Frequently, S = Sometimes, N = Never.

Source: Compiled from data submitted in response to Commission questionnaires.

ELASTICITY ESTIMATES

This section discusses elasticity estimates; although the party was encouraged to comment on these estimates in its prehearing or posthearing brief, no comments were provided.

U.S. supply elasticity

The domestic supply elasticity²³ for persulfates measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of persulfates. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced persulfates. Analysis of these factors earlier indicates that the U.S. industry is likely to be able to somewhat increase or decrease shipments to the U.S. market; an estimate in the range of 2 and 4 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for persulfates measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of persulfates. This estimate depends on factors discussed earlier such as the existence, availability, and commercial viability of substitute products, as well as the component share of persulfates in the production of any downstream products. Based on the available information, the aggregate demand for persulfates is likely to be inelastic; a range of -.25 to -.75 is suggested.

²³ A supply function is not defined in the case of a non-competitive market.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.²⁴ Product differentiation, in turn, depends upon such factors as quality (*e.g.*, chemistry, appearance, etc.) and conditions of sale (*e.g.*, availability, sales terms/ discounts/ promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced persulfates and imported persulfates is likely to be in the range of 3 to 5.

²⁴ The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

PART III: CONDITION OF THE U.S. INDUSTRY

OVERVIEW

The information in this section of the report is based on the questionnaire response of the sole domestic producer, FMC. FMC accounts for all known U.S. production of persulfates. FMC is headquartered in Philadelphia, Pennsylvania. During the original investigation, subsequent expedited five-year reviews, and current five-year review, FMC was and is the sole U.S. producer of persulfates. Table III-1 presents important industry events.

Table III-1
Persulfates: Important industry events, 2006 and 2013

Period	Company	Event
***	FMC	***
***	FMC	***
December 13, 2013	FMC	FMC signed a definitive agreement to sell its peroxygens business to One Equity Partners (the private investment arm of J.P. Morgan Chase & Co.). The peroxygens business includes persulfates. ¹

¹ FMC testified that nothing will change with the new ownership in terms of continuing persulfates production in the United States. The current FMC management team will move over to the new company to ensure, among other things, that there is a seamless transfer of ownership and continued production operations. Hearing transcript, pp. 16-17 (Lerner) and FMC's posthearing brief, responses to Commissioner questions, pp. 23-24.

Source: *Persulfates from China Inv. No. 731-TA-749 (Second Review)*, INV-FF-020, March 3, 2008, p. I-11 and table I-3 and FMC Press Release *FMC Corporation Signs Definitive Agreement to Sell Peroxygens Business to One Equity Partners*, December 13, 2013, EDIS document id 524491.

Changes experienced by the industry

Domestic producers were asked to indicate whether their firm had experienced any plant openings, relocations, expansions, acquisitions, consolidations, closures, or prolonged shutdowns because of strikes or equipment failure; curtailment of production because of shortages of materials or other reasons, including revision of labor agreements; or any other change in the character of their operations or organization relating to the production of persulfates since 2007. FMC indicated that it had experienced such changes; its responses are presented in table III-2.

Table III-2
Persulfates: Changes in the character of FMC's operations since January 1, 2007

* * * * *

Anticipated changes in operations

The Commission asked domestic producers to report anticipated changes in the character of their operations relating to the production of persulfates. FMC ***.

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-3 and figure III-1 presents FMC's production, capacity, and capacity utilization. FMC showed a modest capacity increase which is tied to infrastructure improvements.¹ In the ***. The improvements resulted in a capacity increase of *** pounds per year.² Additional capacity increases may occur through small cell improvements adding *** pounds at a time through conversion or thorough new process chemistry currently under development.³ FMC reported that it does ***. FMC testified that it produces peracetic acid at its Tonawanda facility.⁴ FMC did not report any ***.

Table III-3
Persulfates: U.S. producer's production, capacity, and capacity utilization, 2007-12, January-September 2012, and January-September 2013

* * * * *

Figure III-1
Persulfates: U.S. producer's production, capacity, and capacity utilization, 2007-12, January-September 2012, and January-September 2013

* * * * *

Constraints on capacity

FMC reported ***. ***.

U.S. PRODUCER'S U.S. SHIPMENTS AND EXPORTS

Table III-4 presents FMC's U.S. shipments, export shipments, and total shipments. FMC reported ***. Since 2009 ***. FMC reported it *** in every year of the period examined. FMC

¹ Hearing transcript, pp. 52-53 (Ball).

² FMC's prehearing brief, p. 23.

³ Ibid.

⁴ Hearing transcript, p. 78 (Lerner) and FMC's posthearing brief, responses to Commissioner questions, p. 4.

reported that its ***. FMC reported that it competes with persulfates produced in China in Mexico, Brazil, Argentina, Korea, and Taiwan.⁵

Table III-4

Persulfates: U.S. producer's U.S. shipments, exports shipments, and total shipments, 2007-12, January-September 2012, and January-September 2013

* * * * *

U.S. PRODUCER'S INVENTORIES

Table III-5 presents FMC's end-of-period inventories and the ratio of these inventories to FMC's production, U.S. shipments, and total shipments over the period examined. FMC reported that its inventories ***. FMC explained that persulfates have a relatively short shelf life and that when they come close to their expiration they must be reworked into other products. The expiring persulfates crystals cake together and are subject to regulations which make it cost prohibitive to dispose of them.⁶ The process of reworking caked persulfates is also expensive so FMC takes precautions to ensure that its inventories are maintained within stringent guidelines.⁷ Persulfates are not produced to order because the chemical process of producing persulfates does not allow for this.⁸

Table III-5

Persulfates: U.S. producer's inventories, 2007-12, January-September 2012, and January-September 2013

* * * * *

U.S. PRODUCER'S IMPORTS AND PURCHASES

Table III-6 presents data on FMC's U.S. production and U.S imports of persulfates from all countries over the period examined. FMC reported importing ***, respectively. The product imported from ***. FMC imported ***. At that time, FMC was considering ***. ***. FMC decided ***. The product imported from ***. FMC imported ***.

⁵ Hearing transcript, p. 46 (Ball) and FMC's posthearing brief, responses to Commissioner questions, p. 20.

⁶ FMC's prehearing brief, p. 32 and hearing transcript, pp. 34-35 (Warlick).

⁷ Hearing transcript, pp. 34-35 (Warlick) and FMC's posthearing brief, pp. 9-10.

⁸ Hearing transcript, p. 85 (Lerner).

Table III-6

Persulfates: U.S. producer's U.S. production, imports, and import ratios to U.S. production, 2007-12, January-September 2012, and January-September 2013

* * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-7 shows FMC's employment-related data during the period of review. FMC increased its employment throughout the period. In each year of the period, the *** when FMC reported a production ***. In 2011, FMC reached a four year labor agreement with the International Chemical Workers Union, Local 76.⁹ The agreement provided a tiered wage system and other measures designed to ensure that the plant remains competitive.¹⁰

Table III-7

Persulfates: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2007-12, January-September 2012, and January-September 2013

* * * * *

⁹ Hearing transcript, p. 26 (Norton).

¹⁰ Ibid.

FINANCIAL EXPERIENCE OF THE U.S. PRODUCER

Background

The sole U.S. producer, FMC, provided usable financial data on its operations on persulfates. These data are believed to account for all U.S. production of persulfates during the period examined. ***.

Operations on persulfates

Income-and-loss data for FMC on its operations on persulfates are presented in table III-8. FMC experienced *** operating income in all reporting periods. Operating income *** from 2007 to 2011, then *** in 2012. A comparison of interim period data reveals *** in operating income in January-September 2013 as compared to January-September 2012.¹¹

Table III-8

Persulfates: Results of operations of U.S. producer FMC, 2007-12, January-September 2012, and January-September 2013.

* * * * *

The reported aggregate net sales quantity and value *** from 2007 to 2012.¹² Collectively, the aggregate cost of goods sold (“COGS”) and selling, general, and administrative (“SG&A”) expenses *** during this time. As a result of the *** in operating costs and expenses as compared to revenue, aggregate operating income *** from an operating margin of *** percent in 2010 to *** percent in 2011 and *** percent in 2012. Between the comparable interim periods, net sales quantity and value ***, and combined operating costs and expenses ***. The *** in operating costs and expenses as compared to revenue resulted in a lower operating margin of *** percent in January-September 2013 as compared to *** percent in January-September 2012.¹³

As previously stated, the *** from 2007 to 2012 ***. Thus, COGS as a ratio to net sales *** percentage points during this time. Between the comparable interim periods, COGS as a ratio to net sales *** percentage points.

¹¹ FMC’s sales of persulfates represented *** percent of net sales for the Peroxygens Chemicals Division, *** percent of net sales for the Industrial Chemicals Group and *** percent of FMC’s total sales for fiscal year (“FY”) 2012. FMC’s Form 10-K for the fiscal year ended December 31, 2012, p. 19, and e-mail from ***, December 18, 2013. As previously noted in table III-1, FMC signed an agreement in December 2013 to sell its Peroxygens Chemicals Division.

¹² ***. E-mail from ***, November 27, 2013.

¹³ ***. FMC’s producer questionnaire response, question III-9.

Per-pound raw material costs *** from 2007 to 2012, then *** between the comparable interim periods. Raw materials accounted for an average *** percent of total COGS for the reporting period, and had a notable impact on the increase or decrease in per-pound COGS during this time.

Direct labor and other factory costs accounted for an average *** and *** percent, respectively, of total COGS for the reporting period. Per-pound direct labor *** from 2007 to 2012, and also *** between the comparable interim periods. Per-pound other factory costs *** from 2007 to 2012, and *** between the comparable interim periods.

SG&A expenses accounted for an average *** percent of total operating costs during the period examined. Per-pound SG&A expenses *** from 2007 to 2012, and also *** between the comparable interim periods.

Variance analysis

The variance analysis presented in table III-9 is based on the data in table III-8.¹⁴ The analysis shows that the *** in operating income from 2007 to 2012 is primarily attributable to ***. In January-September 2013 as compared to January-September 2012, the analysis shows that the *** in operating income is primarily attributable to ***.

Table III-9

Persulfates: Variance analysis on the operations of U.S. producer FMC, 2007-12, and January-September 2012 to January-September 2013

* * * * *

Capital expenditures, research and development expenses, and total assets

FMC's aggregate data on capital expenditures, research and development ("R&D") expenses, and total assets are shown in table III-10. Aggregate capital expenditures irregularly *** from 2007 to 2012, with a *** in 2012 as compared to the previous periods. In January-September 2013, capital expenditures were *** than in January-September 2012. Aggregate R&D expenses irregularly *** from 2007 to 2012, but *** in January-September 2013 as compared to January-September 2012. According to FMC, ***.¹⁵

¹⁴ The Commission's variance analysis is calculated in three parts: sales variance, cost of sales variance (COGS variance), and SG&A expense variance. Each part consists of a price variance (in the case of the sales variance) or a cost variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost variance is calculated as the change in unit price or unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or unit cost. Summarized at the bottom of the table, the price variance is from sales; the cost/expense variance is the sum of those items from COGS and SG&A variances, respectively, and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances.

¹⁵ E-mail from ***, November 15, 2013.

Similar to the trend in capital expenditures, total assets irregularly *** from 2007 to 2012, with a *** in 2012 as compared to the previous periods. According to FMC, ***.¹⁶

Table III-10

Persulfates: Capital expenditures, research and development expenses, and total assets of U.S. producer FMC, 2007-12, January-September 2012, and January-September 2013

* * * * *

¹⁶ Ibid.

PART IV: U.S. IMPORTS AND THE FOREIGN INDUSTRIES

U.S. IMPORTS

Overview

The Commission issued questionnaires to 12 firms believed to have imported persulfates between 2007 to May 2013. Eleven firms provided data and information in response to the questionnaires during the period for which data were collected.¹ Based on official Commerce statistics for imports of persulfates, importers' questionnaire data accounted for all known imports from China and 90.0 percent of nonsubject U.S. imports during the period of review. In light of the data coverage by the Commission's questionnaires, import data in this report are based on questionnaire responses for persulfates.^{2 3}

Imports from subject and nonsubject countries

Table IV-1 presents information on U.S. imports of persulfates from China and all other sources over the period examined. There have been very limited imports of persulfates from China over the period examined. In 2007, *** reported imports from China and all other sources. It ***. In 2009, *** reported imports from China. It imported persulfates ***. ***. ***. In 2011, *** reported imports from China. *** reported that it has *** reported that it ***.

¹ One firm, ***, did not provide a questionnaire response. Based on proprietary Customs data, it is estimated that *** accounted for less than *** percent of total imports of persulfates during the period of review.

² The coverage data calculations are based on comparing questionnaire data to HTS subheadings 2833.40.20 and 2833.40.60. As previously stated, subheading 2833.40.60 superseded subheadings 2833.40.10 and 2833.40.50. *Presidential Proclamation 6763 of December 23, 1994, To Implement the Trade Agreements Resulting from the Uruguay Round of Multilateral Trade Negotiations, and for Other Purposes*, 60 FR 1007, 1151, January 4, 1995.

³ HTS subheading 2833.40.60 includes "other" persulfates. Other persulfates include ammonium and potassium persulfates which are within the scope of this review. However, there are "other" persulfates which are not within the scope of this review that would enter under HTS subheading 2833.40.60 (e.g., potassium monopersulfate).

Table IV-1
Persulfates: U.S. imports by source, 2007-12, January-September 2012, January-September 2013

Item	Calendar year						January - September	
	2007	2008	2009	2010	2011	2012	2012	2013
	Quantity (1,000 pounds)							
China	***	***	***	***	***	***	***	***
All others	12,815	10,889	8,430	10,002	12,768	10,970	8,837	11,967
Total U.S. imports	***	***	***	***	***	***	***	***
	Value (1,000 dollars)¹							
China	***	***	***	***	***	***	***	***
All others	8,208	7,701	7,290	7,704	9,548	8,664	7,193	9,297
Total U.S. imports	***	***	***	***	***	***	***	***
	Unit value (dollars per pound)							
China	***	***	***	***	***	***	***	***
All others	0.64	0.71	0.86	0.77	0.75	0.79	0.81	0.78
Average, total U.S. imports	***	***	***	***	***	***	***	***
	Share of quantity (percent)							
China	***	***	***	***	***	***	***	***
All others	***	***	***	***	***	***	***	***
Total U.S. imports	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)							
China	***	***	***	***	***	***	***	***
All others	***	***	***	***	***	***	***	***
Total U.S. imports	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Ratio of imports to U.S. production (percent)							
China	***	***	***	***	***	***	***	***
All others	***	***	***	***	***	***	***	***
Total U.S. imports	***	***	***	***	***	***	***	***

¹ Landed, duty-paid.

Note.—***. Staff telephone interview with ***, December 2, 2013.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. imports of persulfates from nonsubject sources have remained steady throughout the period of review. The leading nonsubject country supplier is Germany and the leading U.S. importer of persulfates is ***. Table IV-2 presents information on U.S. imports of persulfates from the leading nonsubject sources over the period examined.

Table IV-2
Persulfates: U.S. imports from nonsubject sources by country, 2007-12, January-September 2012, January-September 2013

Item	Calendar year						January - September	
	2007	2008	2009	2010	2011	2012	2012	2013
	Quantity (1,000 pounds)							
Germany	5,567	5,074	3,914	4,897	7,092	6,979	6,141	5,079
India	1,033	974	1,071	824	1,105	1,239	1,026	1,896
Japan	4,610	2,617	988	2,487	1,636	1,991	1,466	4,265
Taiwan	3,194	2,920	1,564	2,494	4,376	2,678	2,147	2,311
All other sources	348	386	88	129	483	152	142	56
	Value (1,000 dollars)¹							
Germany	3,119	3,235	2,953	3,560	4,805	5,180	4,478	3,666
India	615	722	1,120	804	1,133	1,021	862	1,504
Japan	2,412	1,593	783	1,795	1,190	1,445	1,082	2,765
Taiwan	1,689	1,936	1,298	1,904	3,474	2,200	1,786	1,976
All other sources	490	333	175	184	659	275	253	133
	Unit value (dollars per pound)							
Germany	0.56	0.64	0.75	0.73	0.68	0.74	0.73	0.72
India	0.60	0.74	1.05	0.98	1.03	0.82	0.84	0.79
Japan	0.52	0.61	0.79	0.72	0.73	0.73	0.74	0.65
Taiwan	0.53	0.66	0.83	0.76	0.79	0.82	0.83	0.86
All other sources	1.41	0.86	1.99	1.42	1.36	1.81	1.79	2.37

¹ Landed, duty-paid.

Note.—Due to rounding, figures may not add to the totals shown.

Note.—The data may be somewhat overstated.

Source: Compiled from official Commerce statistics.

U.S. IMPORTERS' IMPORTS SUBSEQUENT TO SEPTEMBER 30, 2013

Table IV-3 presents data for U.S. importers that indicated that they had imported or arranged for the importation of persulfates from China and all other sources for delivery after September 30, 2013. *** importer reported arranging for imports from China. For October-December 2013, ***. For January-March 2014, ***. *** is the only U.S. importer to report arranging for imports in every quarter.

Table IV-3
Persulfates: Arranged imports, October 2013-September 2014

* * * * *

U.S. IMPORTERS' INVENTORIES

Table IV-4 presents data for inventories of U.S. imports of persulfates from China and all other sources held in the United States. *** reported holding *** of persulfates from China in inventory because ***.⁴ The three leading importers holding inventories of persulfates in the United States from all other sources are ***.

Table IV-4

Persulfates: U.S. importers' end-of-period inventories of imports, by source, 2007-12, January-September 2012, and January-September 2013

Item	Calendar year				January - September			
	2007	2008	2009	2010	2011	2012	2012	2013
Imports from China: Inventories (1,000 pounds)	***	***	***	***	***	***	***	***
Ratio to U.S. imports (percent)	(1)	(1)	(1)	(1)	***	(1)	(1)	(1)
Ratio to U.S. shipments of imports (percent)	(1)	(1)	(1)	(1)	***	***	***	***
Imports from all other sources: Inventories (1,000 pounds)	1,555	1,644	1,224	1,312	1,569	1,220	1,563	1,658
Ratio to U.S. imports (percent)	***	***	***	***	***	***	***	***
Ratio to U.S. shipments of imports (percent)	***	***	***	***	***	***	***	***
Imports from all sources: Inventories (1,000 pounds)	***	***	***	***	***	***	***	***
Ratio to U.S. imports (percent)	***	***	***	***	***	***	***	***
Ratio to U.S. shipments of imports (percent)	***	***	***	***	***	***	***	***

¹ Unavailable.

Source: Compiled from data submitted in response to Commission questionnaires.

THE INDUSTRY IN CHINA

Overview

During the original investigation there were four known producers of any significance in China: Fujian Fuan Pesticide Factory ("Fuan"), Guangzhou Zhujiang Electrochemicals ("Guangzhou"), Shaanxi Baoji Chemical Factory ("Shaanxi"), and Shangahi Ai Jian Reagent Works ("Ai Jian").⁵ In the first expedited review, FMC identified 12 producers of persulfates in

⁴ Email from ***, December 4, 2013.

⁵ During the original, respondents claimed that there were five more producers of persulfates from China, four of which produced 100 tons or less per year, and one of which that internally consumed nearly all of its production.

China.⁶ In the second expedited review, FMC identified 25 producers of persulfates in China.⁷ In the current full review, FMC identified 24 producers of persulfates in China.⁸

In this current review, one firm, United Initiators (Shanghai) Co., Ltd. (“UI Shanghai”) *** to the Commission. It provided ***. UI Shanghai ***.⁹ FMC provided a ***. In light of the data coverage by the Commission’s questionnaires, foreign producer data in this report are based on the *** (table IV-5).

According to ***.¹⁰ Their total capacity was ***. The report bases its ***.¹¹ According to ***, in 2012 the ***.¹²

According to ***.¹³ The ***.¹⁴ ***. provided a summary table of ***.^{15 16}

Table IV-5
Persulfates: Chinese capacity, production, and capacity utilization, 1996, 2000, 2006, and 2012

Item	Calendar year			
	1996	2000 ¹	2006	2012 ²
	Quantity (1,000 pounds)			
Capacity	***	137,238	277,782	***
Production	***	61,963	221,996	***
	Ratio (percent)			
Capacity utilization	***	45.2	79.9	***

¹ Data for 2001 unavailable.

² 2012 data are based on *** reported data. In a straight calculation, the capacity utilization rate is *** percent. However, counsel noted that ***’s reported capacity utilization rate is correctly reported because it takes into consideration the various molecular weights of the different types of persulfates. FMC’s prehearing brief, pp. 31-32.

Source: *Persulfates from China Inv. No. 731-TA-749 (Final)*, INV-U-046, June 3, 1997, table VII-1; *Persulfates from China, Inv. No. 731-TA-749 (Review)*, USITC Publication 3555 (October 2002), table I-4; *Persulfates from China, Inv. No. 731-TA-749 (Second Review)*, USITC Publication 3988 (March 2008), table I-7; and FMC’s producer questionnaire response, attachment 1 ***, table 2, March 2013.

⁶ *Persulfates from China, Inv. No. 731-TA-749 (Review)*, USITC Publication 3555, October 2002, I-10.

⁷ *Persulfates from China, Inv. No. 731-TA-749 (Second Review)*, USITC Publication 3988, March 2008, I-12.

⁸ FMC’s Response to the Notice of Institution, April 1, 2013, exh. VIII.

⁹ Email from ***, November 25, 2013.

¹⁰ ***. FMC’s producer questionnaire response, attachment 1 ***, p. 6 n. 1, March 2013.

¹¹ FMC’s producer questionnaire response, attachment 1 ***, p. 6, March 2013.

¹² Ibid.

¹³ Staff notes that although ***. Ibid, p.9.

¹⁴ The ***. FMC’s producer questionnaire response, attachment 1 ***, table 2, March 2013.

¹⁵ ***’s importer questionnaire response, attachment 2.

¹⁶ There is some overlap among the ***.

Operations on persulfates

As previously stated, UI Shanghai ***. UI Shanghai reported its *** throughout much of the period examined. However, in ***. UI Shanghai reported its production ranged from *** pounds in 2012 *** to *** pounds in 2008.

***. The company name was ***. UI Shanghai reported it does ***. In 2008-12, UI Shanghai exported to ***.

Third-country orders

Three importers reported import relief investigations in Europe and two reported import relief investigations in India. On October 10, 2012, the European Commission opened a sunset review of the measures imposed against imports of persulfates from China in the European Union. On December 12, 2013, the European Union issued its Implementing Regulation in the China Expiry Review continuing the antidumping duty on imports of persulfates from China.¹⁷

On March 12, 2013, India finalized its sunset review of the antidumping duties imposed on persulfates from China^{18 ***}.¹⁹

Table IV-6 presents information on current and historical third-country antidumping duty orders concerning exports of persulfates (frequently referred to as persulphates by the administering authorities) from China.

Table IV-6

Persulfates: Third-country antidumping duty orders on China

Country subject to order	Country or trade union issuing order	Antidumping duty order issuance (Month Year)	Revocation or termination (Month Year)	Final margin of dumping (percent)
China	European Union	December 1995	April 2002	110.10
	India	August 2007	In place	131.00
	European Union	October 2007	In place	24.5-71.8 ¹

¹ ABC Chemicals (Shanghai) Co., Ltd. received a *de minimis* margin, Degussa-AJ (Shanghai) Initiators Co., Ltd. received a 24.5 percent margin, and all other companies received a 96.0 percent margin.

Note.—***.

Source: Temporary Trade Barriers Database, World Bank, <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:22574930~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>, retrieved October 31, 2013 and Council Regulation (EC) No. 1184/2007 of October 9, 2007, in the Official Journal of the European Union, October 11, 2007, pp. L 265/17 to L 265/18.

¹⁷ FMC's prehearing brief, p. 38.

¹⁸ FMC's prehearing brief, p. 42.

¹⁹ ***'s U.S. importer questionnaire, response I-12.

GLOBAL MARKET

According to statistics of Global Trade Information Services Inc. (“GTIS”), the seven leading exporting nations combined accounted for more than 90 percent of total global exports by volume each year during 2007-12²⁰ (table IV-7). During this period, China was the world’s leading exporter. China’s exports increased 44.4 percent from 2007 to 2012, exceeding 92 million pounds in 2012. In 2012, China’s exports accounted for more than 47 percent of the world’s exports. The United States was the second largest exporter of persulfates in 2012, followed by Japan, Germany, Taiwan, Turkey, and India.

Table IV-7

Persulfates: World exports by country, 2007-12 and January-September 2013

Item	Calendar Year						January-September 2013
	2007	2008	2009	2010	2011	2012	
	Quantity (1,000 pounds)						
Exports from:							
China	64,043	48,936	48,699	59,036	95,019	92,511	64,909
United States	39,933	40,454	33,311	43,671	39,967	43,817	32,280
Japan	32,727	30,652	19,947	25,986	20,701	26,027	24,556
Germany ¹	15,317	13,842	10,807	13,284	15,024	15,134	(²)
Taiwan	9,517	8,208	5,055	6,508	8,584	5,694	5,093
Turkey	4,801	4,373	5,754	7,193	6,866	7,827	(²)
India	1,671	2,198	2,437	2,843	2,682	2,481	3,024
All other countries	7,975	7,383	2,638	1,546	1,196	665	(²)
Total	175,984	156,046	128,647	160,068	190,038	194,156	(²)

¹ Germany does not report its exports to Global Trade Atlas; therefore, German export data are estimates based on import data of other countries.

² Unavailable.

Note. – Because of rounding, figures may not add to the totals shown.

Source: Global Trade Atlas for HTS 2833.40, retrieved December 3, 2013.

²⁰ Global trade data presented are derived from GTIS, *Global Trade Atlas*, HTS 2833.40. The products covered under this six-digit HTS classification include the subject merchandise and other peroxosulfates. *Global Trade Atlas* does not report export data for Germany under HTS 2833.40; data reported for German exports are staff estimates based on import data reported by other countries in *Global Trade Atlas*.

The seven leading importing nations combined accounted for approximately half of global imports, ranging between 47 and 57 percent during 2007-12 (table IV-8). During this period, Korea was the leading importer of persulfates. Korea's imports increased 189 percent from 2007-2012, exceeding 45 million pounds in 2012. The United States and Taiwan are among both the seven leading exporting and seven leading importing nations.

Table IV-8

Persulfates: World imports by country, 2007-12 and January-September 2013

Item	Calendar Year						January-September 2013
	2007	2008	2009	2010	2011	2012	
	Quantity (<i>thousand pounds</i>)						
Imports into:							
Korea	15,879	16,001	15,172	23,326	44,837	45,818	33,291
Taiwan	24,496	26,427	19,353	23,489	26,999	25,992	20,532
Italy	16,865	14,872	11,114	15,770	13,905	14,447	(¹)
United States	15,410	12,357	8,160	10,906	14,700	13,076	13,684
Canada	10,533	11,433	8,179	10,521	10,491	11,802	6,108
Belgium	13,777	13,788	8,338	8,810	10,276	10,377	(¹)
All other countries	106,823	99,037	78,978	95,052	98,567	92,679	(¹)
Total	203,783	193,914	149,293	187,873	219,773	214,190	(¹)

¹ Unavailable.

Note. – Because of rounding, figures may not add to the totals shown.

Source: Global Trade Atlas for HTS 2833.40, retrieved December 3, 2013.

During 2007-12, the seven countries with the highest magnitude trade balance in persulfates were China, the United States, Japan, Brazil, Canada, Taiwan, and Korea. Of these seven countries three, China, the United States, and Japan, were net exporters for each year during the period, while the remaining four countries were net importers for each year (table IV-9).

Table IV-9

Persulfates: Trade balance by country, 2007-12 and January-September 2013

Item	Calendar Year						January-September 2013
	2007	2008	2009	2010	2011	2012	
	Quantity (<i>thousand pounds</i>)						
Trade Balance							
China	59,931	46,298	47,950	57,552	91,859	90,083	62,002
United States	24,523	28,097	25,151	32,765	25,267	30,741	18,596
Japan	28,413	27,257	17,884	23,485	13,594	22,449	23,028
Brazil	(4,639)	(6,411)	(5,878)	(7,021)	(7,078)	(6,445)	(6,360)
Canada	(8,254)	(10,824)	(7,972)	(10,245)	(10,153)	(11,560)	(5,884)
Taiwan	(14,978)	(18,218)	(14,298)	(16,981)	(18,415)	(20,298)	(15,440)
Korea	(15,759)	(15,695)	(15,075)	(23,140)	(44,539)	(45,501)	(33,125)
All other countries	(97,012)	(88,850)	(68,404)	(84,199)	(80,267)	(79,480)	(¹)
Total	(27,777)	(38,347)	(20,642)	(27,785)	(29,733)	(20,011)	(¹)

¹ Unavailable.

Note. – Because of rounding, figures may not add to the totals shown.

Source: Global Trade Atlas for HTS 2833.40, retrieved December 3, 2013.

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

The cost of persulfates depends largely on the costs of chemicals and energy. The primary raw materials used in the production of persulfates are sulfuric acid, caustic acid, and ammonia. As discussed in greater detail in *Part III* of this report, raw materials as a percentage of cost of goods sold (“COGS”) ranged from *** percent to *** percent, with a weighted average of *** percent during the period of review.

According to FMC, the cost of all three main chemical inputs for persulfates *** during the period of review. It reported that the cost of sulfuric acid, used in all three grades of persulfates, *** between 2007 and 2013. It reported that the price of ammonia, used in ammonium persulfates and sodium persulfates, *** during the period of review. FMC also reported that the cost of caustic potash, used in potassium persulfates, and the cost of caustic soda, used in sodium persulfates, **, between 2007 and 2013. It reported that the cost of electrical power, a key production input in the production process, **.

FMC reported that **. In general, **. FMC anticipates that **.

U.S. inland transportation costs

FMC reported that **. FMC reported that **. Two responding importers reported that they typically arrange transportation to their customers; however, they did not report their U.S. inland transportation costs.

PRICING PRACTICES

Pricing methods

As presented in table V-1, firms sell primarily on a transaction-by-transaction basis. However, ** and six responding importers also reported using contracts, price lists, and blanket purchase orders when determining the prices for persulfates sales.

Table V-1

Persulfates: U.S. producers and importers reported price setting methods, by number of responding firms¹

Method	U.S. producers	Importers
Transaction-by-transaction	***	6
Contract	***	3
Set price list	***	0
Other²	***	0

¹ The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

² FMC reported that ***.

Source: Compiled from data submitted in response to Commission questionnaires.

Persulfates are sold predominantly through ***. FMC reported selling most of its product *** and two importers of persulfates from China (***) sold all of their product ***. FMC reported that *** percent of its commercial shipments were sold through spot sales; *** percent was sold through short-term contracts; and *** percent was sold through long-term contracts. One responding importer, *** reported selling *** percent of its imported persulfates from nonsubject countries on a short-term contract basis.

FMC reported that the average duration of its short-term contract was ***. FMC reported that its short-term contracts ***. FMC reported that the average duration of its long-term contracts was ***. FMC reported that its long-term contracts ***. Importer *** reported that its short-term contracts did not permit price negotiations during the contract period and fixed both price and quantity.¹

Two purchasers reported that they purchase product daily, four purchase weekly, and two purchase monthly. Seven of eight responding purchasers reported that they did not expect their purchasing patterns to change in the next two years. Most (7 of 8) purchasers contact 1 to 2 suppliers before making a purchase.

Sales terms and discounts

FMC and three importers reported that they typically quote prices on ***; the remaining six responding importers reported that they typically quote prices on a ***. FMC reported that ***. The majority of importers (5 of 6) reported that they do not offer discounts. Importer *** reported that it offers early payment discounts. FMC reported sales terms of *** however, it also reported that ***. Three importers reported sales terms of net 30 days, two importers reported sales terms of net 45 days, one importer reported sales terms ranging from net 90 to 120 days, and one importer reported sales terms of net 15 days.

¹ *** did not report the average duration of its short-term contracts.

Price leadership

All six responding purchasers reported that FMC was the price leader; one purchaser also listed United Initiators (Germany) and Mitsubishi Gas Chemical Company (Japan) as price leaders.

PRICE DATA

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following persulfates products shipped to unrelated U.S. distributors and U.S. end users during January 2007 to September 2013.

Product 1.—Potassium persulfates

Product 2.—Ammonium persulfates

Product 3.—Sodium persulfates

FMC provided usable pricing data for sales of the requested products. One importer, *** provided usable pricing data for sales of product 3 sold to end users.² Pricing data reported by these firms accounted for approximately *** percent of the U.S. producer's shipments of product and *** percent of U.S. shipments of imports from China during 2007-13. Price data for products 1-3 are presented in tables V-2 to V-4 and figures V-1 to V-3.

Table V-2

Persulfates: Weighted-average f.o.b. prices and quantities of domestic product 1¹, by channel of distribution, January 2007-September 2013

* * * * *

Table V-3

Persulfates: Weighted-average f.o.b. prices and quantities of domestic product 2¹, by channel of distribution, January 2007-September 2013

* * * * *

² In addition, ***, an importer of Chinese persulfates, provided price data for ***. ***. ***. These data have been excluded because of the large effect they would have on overall trends. Staff telephone interview with ***, December 2, 2013.

Table V-4

Persulfates: Weighted-average f.o.b. prices and quantities of domestic and imported product 3¹ by channel of distribution, and margins of underselling, January 2007-September 2013

* * * * *

Figure V-1

Persulfates: Weighted-average prices and quantities of domestic product 1, by channel of distribution, January 2007-September 2013

* * * * *

Figure V-2

Persulfates: Weighted-average prices and quantities of domestic product 2, by channel of distribution, January 2007-September 2013

* * * * *

Figure V-3

Persulfates: Weighted-average prices and quantities of domestic and imported product 3, by channel of distribution, January 2007-September 2013

* * * * *

Price trends

In general, the price of persulfates increased throughout the period of review. As shown in the table V-5, domestic price increases ranged from *** percent to *** percent during 2007-13. For products 1 and 3, prices were generally lower for sales to *** than for sales to ***.

Table V-5

Persulfates: Summary of weighted-average f.o.b. prices for products 1-3 from the United States and China

* * * * *

Prices for potassium persulfates (product 1) generally increased throughout the period of review. Prices of domestically produced potassium persulfates sold to distributors were generally *** than the same product sold to end users. The weighted-average price of domestically produced potassium persulfates sold to distributors increased from \$*** per pound in the first quarter of 2007 to \$*** per pound in the third quarter of 2013. The weighted-average price for U.S.-produced potassium persulfates sold to end users increased from \$*** per pound in the first quarter of 2007 to \$*** per pound in the third quarter of 2013.

Prices for ammonium persulfates (product 2) generally increased throughout the period of review, particularly for sales to ***. The weighted-average price for U.S.-produced ammonium persulfates sold to distributors increased from \$*** per pound in the first quarter of 2007 to \$*** per pound in the third quarter of 2013. The weighted-average price of domestically produced ammonium persulfates sold to end users increased from \$*** per pound in the first quarter of 2007 to \$*** per pound in the second quarter of 2012 before falling to \$*** per pound in the third quarter of 2013.

Prices for sodium persulfates (product 3) generally increased throughout the period of review, particularly for sales to ***. The weighted-average price for domestically produced sodium persulfates sold to distributors increased from \$*** per pound in the first quarter of 2007 to \$*** per pound in the third quarter of 2013. The weighted-average price for domestically produced sodium persulfates sold to end-users increased from \$*** per pound in the first quarter of 2007 to \$*** per pound in the third quarter of 2013.

Price comparisons

For the one possible price comparison, the price for persulfates imported from China was below those for U.S.-produced product (table V-6). The margin of underselling was *** percent.³

Table V-6

Persulfates: Instances of underselling/overselling and the range and average of margins, by product from China, January 2007-September 2013

* * * * *

Three of six responding purchasers reported that the price of U.S.-produced persulfates has increased relative to the price of persulfates from China. Two purchasers reported that price of U.S.-produced persulfates has changed by the same amount as the price of imported product from China and one purchaser reported that there has not been a change in price.

FMC reported that market prices for persulfates tend to be *** in the United States compared to other countries due to ***. As shown in figure V-4, it reported the average price for ammonium persulfates, potassium persulfates, and sodium persulfates in North America, the EU, Latin America, and Asia.

Figure V-4

Persulfates: FMC's reported average world market prices of persulfates, by type of persulfate and region

* * * * *

³ In the original investigation, Chinese persulfates undersold domestic product in 56 of 57 possible price comparisons with margins of underselling ranging from 3.0 percent to 50.4 percent. The average margins of underselling by type of persulfate were 15.5 percent for potassium persulfate, 28.2 percent for ammonium persulfate, and 10.8 percent for sodium persulfate. *Persulfates from China*, Inv. No. 731-TA-749 (Final), USITC staff report, June 3, 1997, pp. V-3-4. The previous last two reviews were expedited and no price data were collected.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, *Federal Register* notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
78 FR 13862 March 1, 2013	<i>Initiation of Five-Year (“Sunset”) Review</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-03-01/pdf/2013-04821.pdf
78 FR 13891, March 1, 2013	<i>Persulfates from China; Institution of Five-year a Review Concerning the Antidumping Duty Order on Persulfates from China</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-03-01/pdf/2013-04763.pdf
78 FR 14591, March 6, 2013	<i>Persulfates from China; Correction to Notice of institution</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-03-06/pdf/2013-05149.pdf
78 FR 35314, June 12, 2013	<i>Persulfates from China; Notice of Commission Determination to Conduct a Full Five-Year Review</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-06-12/pdf/2013-13873.pdf
78 FR 40695, July 8, 2013	<i>Persulfates from the People’s Republic of China: Final Results of Expedited Third Sunset Review of Antidumping Duty Order</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-07-08/pdf/2013-16346.pdf
78 FR 52969, August 27, 2013	<i>Persulfates from China; Scheduling of a Full Five-Year Review Concerning the Antidumping Duty Order Persulfates from China</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-08-27/pdf/2013-20754.pdf
78 FR 64244, October 28, 2013	<i>Persulfates from China; Revised Schedule for the Subject Investigation</i>	http://www.gpo.gov/fdsys/pkg/FR-2013-10-28/pdf/2013-25316.pdf
<p>Note.—The press release announcing the Commission’s determinations concerning adequacy and the conduct of a full or expedited review can be found at http://usitc.gov/press_room/news_release/2013/er0604ll1.htm. A summary of the Commission’s votes concerning adequacy and the conduct of a full or expedited review can be found at http://pubapps2.usitc.gov/sunset/caseProfSuppAttmnt/download/11559. The Commission’s explanation of its determinations can be found at http://pubapps2.usitc.gov/sunset/caseProfSuppAttmnt/download/11558.</p>		

APPENDIX B

LIST OF HEARING WITNESSES

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject: Persulfates from China
Inv. No.: 731-TA-749 (Third Review)
Date and Time: January 16, 2014 - 9:45 a.m.

Sessions were held in connection with this investigation in the Main Hearing Room, 500 E Street (room 101), SW, Washington, D.C.

CONGRESSIONAL APPEARANCE:

The Honorable Brian Higgins, U.S. Representative, 26th District, New York

OPENING REMARKS:

In Support of Continuation of Order (**Thomas V. Vakerics**,
Barnes Richardson & Colburn, LLP)

**In Support of the Continuation of
the Antidumping Duty Order:**

Barnes Richardson & Colburn, LLP
Washington, D.C.
on behalf of

FMC Corporation ("FMC")

Bruce Lerner, Vice President and Global Business Director,
Peroxygens Division, FMC

Thomas Ball, Global Sales and Marketing Director, Peroxygens
Division, FMC

Paul Ryczek, Plant Controller, Peroxygens Division, FMC

Clifford Norton, Vice President, International Chemical Workers
Union Council, Local 76C, Buffalo, NY

**In Support of the Continuation of
the Antidumping Duty Order (continued):**

Joseph Pattison, Associate General Counsel, FMC

Amy Warlick, International Trade Economist, Barnes, Richardson
& Colburn, LLP

Thomas V. Vakerics)
Matthew T. McGrath) – OF COUNSEL
Stephen W. Brophy)

CLOSING REMARKS:

In Support of Continuation of Order (**Thomas V. Vakerics**, Barnes
Richardson & Colburn, LLP)

APPENDIX C
SUMMARY DATA

Table C-1

Persulfates: Summary data concerning the U.S. market, 2007-12, January to September 2012, and January to September 2013

(Quantity=1,000 pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted)

	Report data														
	2007	2008	Calendar year				January to September		2007-12	2007-08	Calendar year		2010-11	2011-12	Jan-Sept
			2009	2010	2011	2012	2012	2013			2008-09	2009-10	2010-11	2011-12	2012-13
U.S. consumption quantity:															
Amount.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Producers' share (fn1).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Importers' share (fn1):															
China.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
All other sources.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Total imports.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. consumption value:															
Amount.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Producers' share (fn1).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Importers' share (fn1):															
China.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
All other sources.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Total imports.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. shipments of imports from:															
China:															
Quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Ending inventory quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
All other sources:															
Quantity.....	12,703	10,456	8,817	9,935	12,518	11,152	8,729	11,508	(12.2)	(17.7)	(15.7)	12.7	26.0	(10.9)	31.8
Value.....	9,007	8,668	8,343	8,936	11,936	10,453	8,378	10,055	16.1	(3.8)	(3.7)	7.1	33.6	(12.4)	20.0
Unit value.....	\$0.71	\$0.83	\$0.95	\$0.90	\$0.95	\$0.94	\$0.96	\$0.87	32.2	16.9	14.1	(4.9)	6.0	(1.7)	(9.0)
Ending inventory quantity.....	1,555	1,644	1,224	1,312	1,569	1,220	1,563	1,658	(21.5)	5.7	(25.5)	7.2	19.6	(22.2)	6.1
Total imports:															
Quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Ending inventory quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. producers:															
Average capacity quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Production quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. shipments:															
Quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Export shipments:															
Quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Ending inventory quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Production workers.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Hours worked (1,000s).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Wages paid (\$1,000).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Productivity (pounds per hour).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit labor costs.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Net Sales:															
Quantity.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Gross profit of (loss).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
SG&A expenses.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Capital expenditures.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit COGS.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit SG&A expenses.....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit operating income or (loss).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
COGS/sales (fn1).....	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

fn1.--Report data are in percent and period changes are in percentage points.
fn2.--Undefined.

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX D

**COMMENTS BY U.S. PRODUCER, IMPORTERS, AND PURCHASERS
REGARDING THE EFFECTS OF THE ORDER AND
THE LIKELY EFFECTS OF REVOCATION**

All responses in appendix D contain information that would reveal confidential operations and therefore have been deleted from this report.

