

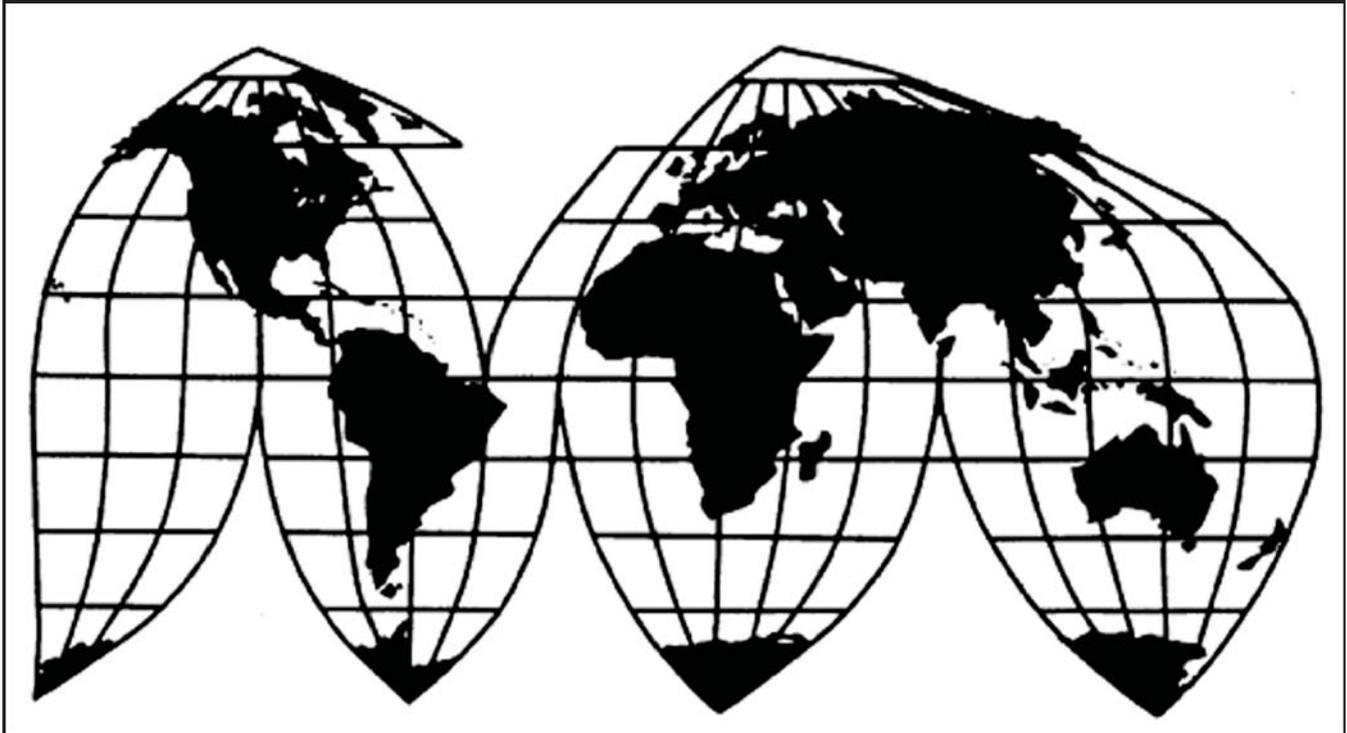
Glycine from China

Investigation No. 731-TA-718 (Fourth Review)

Publication 4667

February 2017

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-718 (Fourth Review)
Glycine 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 the Tariff Act of 1930 (“the Act”), that revocation of the antidumping duty order on glycine 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, pursuant to section 751(c) of the Act (19 U.S.C. 1675(c)), instituted this review on August 1, 2016 (81 F.R. 50547) and determined on November 4, 2016 that it would conduct an expedited review (81 F.R. 87589, December 5, 2016).

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 glycine 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

The Original Investigation and Prior Reviews. The original investigation resulted from a petition filed on July 1, 1994, alleging that an industry in the United States was materially injured or threatened with material injury by reason of less than fair value (“LTFV”) imports of glycine from China. In March 1995, the Commission determined that an industry in the United States was threatened with material injury by reason of less than fair value imports of glycine from China.¹ The U.S. Department of Commerce (“Commerce”) issued an antidumping duty order on glycine from China on March 29, 1995.²

On February 3, 2000 the Commission instituted its first five-year review of the antidumping duty order on glycine from China.³ The Commission conducted an expedited review and determined, in June 2000, that revocation of the order on glycine would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.⁴ Commerce issued a notice of continuation of the order on July 25, 2000.⁵

On June 1, 2005, the Commission instituted its second five-year review of the antidumping duty order on glycine from China.⁶ The Commission conducted an expedited review and determined, in October 2005, that revocation of the order would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.⁷ Commerce issued a notice of continuation of the order on November 15, 2005.⁸

¹ *Glycine from the People’s Republic of China*, Inv. No. 731-TA-718 (Final), USITC Pub. 2863 (Mar. 1995) (“Original Determination, USTIC Pub. 2863”). There were no appeals of the Commission’s determinations in the original investigation or the subsequent reviews.

² 60 Fed. Reg. 16116 (Mar. 29, 1995).

³ 65 Fed. Reg. 5371 (Feb. 3, 2000).

⁴ *Glycine from China*, Inv. No. 731-TA-718 (Review), USITC Pub. 3315 at 3-4 (June 2000) (“First Five-Year Review, USITC Pub. 3315”).

⁵ 65 Fed. Reg. 45752 (July 25, 2000).

⁶ 70 Fed. Reg. 31534 (June 1, 2005).

⁷ *Glycine from China*, Inv. No. 731-TA-718 (Second Review), USITC Pub. 3810 at 3 (Oct. 2005) (“Second Five-Year Review, USTIC Pub. 3810”).

⁸ 70 Fed. Reg. 69316 (Nov. 15, 2005).

On October 7, 2010, the Commission instituted its third five-year review of the antidumping duty order.⁹ The Commission conducted a full review and determined, in August 2011, that revocation of the antidumping duty order on glycine from China would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time.¹⁰ Commerce issued a notice of continuation of the order September 19, 2011.¹¹

The Current Review. The Commission instituted the current fourth five-year review on August 1, 2016.¹² The Commission received a single response to its notice of institution, filed by GEO Specialty Chemicals, Inc. (“GEO”), a domestic producer of glycine.¹³ No respondent interested party filed a response. On November 9, 2016, the Commission found the domestic interested party group response adequate and the respondent interested party group response inadequate.¹⁴ The Commission unanimously determined to conduct this expedited review.¹⁵

Data/Response Coverage. U.S. industry data for this review are based on the information that GEO provided in response to the notice of institution and information from the third five-year review.¹⁶ GEO accounted for *** percent of U.S. glycine production during 2015.¹⁷ No U.S. importer participated in this review. U.S. import data and related information are based on official import statistics.¹⁸ No foreign producer or exporter of glycine participated in this review. Foreign industry data and related information for the period of review are based primarily on private market research that the GEO furnished.¹⁹

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.”²⁰ The Tariff Act defines “domestic like product” as “a product which is like, or in the absence of like, most similar in characteristics and

⁹ 75 Fed. Reg. 62141 (Oct. 7, 2010).

¹⁰ *Glycine from China*, Inv. No. 731-TA-718 (Third Review), USITC Pub. 4255 at 3 (Aug. 2011) (“Third Five-Year Review, USITC Pub. 4255”).

¹¹ 76 Fed. Reg. 57951 (Sept. 19, 2011).

¹² 81 Fed. Reg. 50547 (Aug. 1, 2016).

¹³ Confidential Report, INV-OO-096, EDIS Doc. 593156 (Oct. 20, 2016) (CR) at I-2; Public Report (PR) at I-2.

¹⁴ Explanation of Commission Determination on Adequacy, EDIS Doc 594760 (Nov. 9, 2016).

¹⁵ Explanation of Commission Determination on Adequacy, EDIS Doc 594760 (Nov. 9, 2016).

¹⁶ CR/PR at Table I-3.

¹⁷ CR/PR at Table I-1.

¹⁸ CR/PR at Table I-4.

¹⁹ CR at I-30, PR at I-2.

²⁰ 19 U.S.C. § 1677(4)(A).

uses with, the article subject to an investigation under this subtitle.”²¹ 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.²²

Commerce has defined the scope of the antidumping duty order in this five-year review as follows:

The product covered by the order is glycine, a free-flowing crystalline material, like salt or sugar. Glycine is produced at varying levels of purity and is used as a sweetener/taste enhancer, a buffering agent, reabsorbable amino acid, chemical intermediate, and a metal complexing agent. This order covers glycine of all purity levels. Glycine is currently classified under subheading 2922.49.4020 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheading is provided for convenience and Customs purposes, the written description of the merchandise under the order is dispositive.²³

Glycine is a nonessential amino acid that is produced naturally by humans and other organisms as a building block for proteins.²⁴ It is odorless and sweet to the taste.²⁵ Commercial production of glycine uses traditional chemical synthesis.²⁶ In its dried form, in which it is most often sold, glycine is a white, free-flowing powder.²⁷

Glycine is typically sold in two main grades: United States Pharmacopeia (“USP”) grade and technical grade.²⁸ Glycine meeting USP purity standards is typically used as an additive to enhance or mask flavors or reduce acidity in food, beverages, animal feed, nutraceuticals, personal care products, and cosmetics.²⁹ Technical grade glycine typically is used in industrial applications.³⁰ Glycine with even greater purity than is mandated by USP standards can be

²¹ 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).

²² *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).

²³ 81 Fed. Reg. 88663 (Dec. 8, 2016).

²⁴ CR at I-4, PR at I-3.

²⁵ CR at I-4, PR at I-3.

²⁶ CR at I-4, PR at I-3-4.

²⁷ CR at I-4, PR at I-4.

²⁸ CR/PR at I-4.

²⁹ CR at I-4-5, PR at I-4.

³⁰ CR/PR at I-4.

produced to meet specific customer requirements.³¹ Such high-purity glycine is often referred to as pharmaceutical grade.³²

In the original investigation and all three prior five-year reviews, the Commission found a single domestic like product consisting of all glycine that was coextensive with Commerce's scope definition.³³ In this expedited fourth review, GEO states that it agrees with the domestic like product definition adopted in the original investigation and the prior reviews.³⁴ There is no new information in the record indicating that the characteristics of the product at issue have changed since the prior proceedings.³⁵ Accordingly, we again define a single domestic like product, consisting of all glycine, that is coextensive with Commerce's scope.

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."³⁶ 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 its original determination and three prior five-year reviews, the Commission defined the domestic industry as all domestic producers of glycine.³⁷ In this review, GEO indicates that it agrees with the Commission's domestic industry definition in the original investigation and prior reviews.³⁸ There are no related party or other domestic industry issues in this review.³⁹ We therefore define the domestic industry as consisting of all U.S. producers of glycine.

³¹ CR/PR at I-4.

³² CR at I-5, PR at I-4.

³³ See Original Determination, USITC Pub. 2863 at I-6; First Five-Year Review, USTIC Pub. 3315 at 4; Second Five-Year Review, USITC Pub. 3810 at 4; Third Five-Year Review, USITC Pub. 4255 at 5. Commerce has issued various scope rulings and published a scope interpretation in 2012.

³⁴ See GEO's Response to the Notice of Institution, (Aug. 30, 2016) ("GEO Response") at 1.

³⁵ See *generally* CR at I-3-7, PR at I-3-6.

³⁶ 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.

³⁷ Original Determination, USITC Pub. 2863 at I-6; First Five-Year Review, USTIC Pub. 3315 at 5; Second Five-Year Review, USITC Pub. 3810 at 5; Third Five-Year Review, USITC Pub. 4255 at 6. There were no related party issues in the original investigation or the previous five-year reviews.

³⁸ GEO Response at 42.

³⁹ See CR at I-15-16, PR at I-11-12.

III. Revocation of the Antidumping Duty Order Would Likely 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 to lead to continuation or recurrence of material injury within a reasonably foreseeable time.”⁴⁰ 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.”⁴¹ Thus, the likelihood standard is prospective in nature.⁴² 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.⁴³

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.”⁴⁴ According to the SAA, a “‘reasonably foreseeable time’ will vary from case-to-case, but

⁴⁰ 19 U.S.C. § 1675a(a).

⁴¹ 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.

⁴² 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.

⁴³ 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’”).

⁴⁴ 19 U.S.C. § 1675a(a)(5).

normally will exceed the ‘imminent’ timeframe applicable in a threat of injury analysis in original investigations.”⁴⁵

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 imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated.”⁴⁶ 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 an order is revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).⁴⁷ 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.⁴⁸

In evaluating the likely volume of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, 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.⁴⁹ 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.⁵⁰

In evaluating the likely price effects of subject imports if an order under review is revoked and/or a suspended investigation is terminated, 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

⁴⁵ 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.*

⁴⁶ 19 U.S.C. § 1675a(a)(1).

⁴⁷ 19 U.S.C. § 1675a(a)(1). Commerce made no duty absorption findings with respect to the antidumping duty order under review. CR at I-11, PR at I-8.

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

⁴⁹ 19 U.S.C. § 1675a(a)(2).

⁵⁰ 19 U.S.C. § 1675a(a)(2)(A-D).

United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.⁵¹

In evaluating the likely impact of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, 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 efforts to develop a derivative or more advanced version of the domestic like product.⁵² 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.⁵³

No respondent interested party participated in this expedited review. The record, therefore, contains limited new information with respect to the glycine industry in China. There also is limited information on the glycine market in the United States during the period of review. Accordingly, for our determination, we rely as appropriate on the facts available from the original investigation, the prior reviews, and the limited new information on the record in this expedited fourth five-year review.

B. Likely Conditions of Competition

1. The Original Investigations and Prior Reviews

Several conditions of competition have remained consistent since the original investigation and over the course of the prior reviews. In the original investigation, the Commission found that demand for glycine was derived from demand for the finished products in which it is used, such as pharmaceutical and food products, pet food, and antiperspirants.⁵⁴ It found that changes in glycine prices were unlikely to affect the quantity demanded because

⁵¹ 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.

⁵² 19 U.S.C. § 1675a(a)(4).

⁵³ 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.

⁵⁴ Original Determination, USITC Pub. 2863 at I-6-7.

glycine is an intermediate product that accounts for a relatively small proportion of the cost of producing downstream products and has no substitutes.⁵⁵ It also found that glycine purchases for each end use were concentrated among relatively few purchasers and that intense competitive pressures had motivated these purchasers to use their purchasing power to reduce input costs and to extract price concessions from glycine producers.⁵⁶

In each of the prior reviews, the Commission observed that these demand conditions were largely unchanged since the original investigation.⁵⁷ Additionally, apparent U.S. consumption of glycine, which increased throughout the original period of investigation (“POI”), was at higher levels during each of the first two reviews and fluctuated during the third review, ending the period of review at a higher level than during the second review.⁵⁸

In the original investigation and first and second five-year reviews, Hampshire Chemical Corp. (“Hampshire”) and Chattem, Inc. (“Chattem”) were the only two domestic glycine producers.⁵⁹ In the third five-year review, the domestic industry again consisted of two glycine producers, Chattem and GEO (Hampshire’s successor company).⁶⁰ In the original investigation and each of the prior reviews, the domestic industry supplied the majority of apparent U.S. consumption.⁶¹

The Commission found in each of the prior proceedings that the domestic like product and subject imports were generally substitutable.⁶² In the third five-year review, it observed that there was a moderately high degree of substitutability between the domestic like product and subject imports and that price remained an important factor in purchasing decisions for glycine.⁶³

⁵⁵ Original Determination, USITC Pub. 2863 at I-6-7.

⁵⁶ Original Determination, USITC Pub. 2863 at I-7.

⁵⁷ First Five-Year Review, USITC Pub. 3315 at 7; Second Five-Year Review, USITC Pub. 3810 at 8-9; Third Five-Year Review, USITC Pub. 4255 at 10.

⁵⁸ *See generally* Original Determination, USITC Pub. 2863 at I-7; First Five-Year Review, USITC Pub. 3315 at 7; Second Five-Year Review, USITC Pub. 3810 at 8; Third Five-Year Review, USITC Pub. 4255 at 10. *See also* CR/PR, App. at I-1.

⁵⁹ Original Determination, USITC Pub. 2863 at I-6; First Five-Year Review, USITC Pub. 3315 at 3; Second Five-Year Review, USITC Pub. 3810 at 9.

⁶⁰ Third Five-Year Review, USITC Pub. 4255 at 10.

⁶¹ First Five-Year Review, USITC Pub. 3315 at 7-8; Second Five-Year Review, USITC Pub. 3810 at 8-9; Third Five-Year Review, USITC Pub. 4255 at 10-11; *see also* CR/PR at Table I-6.

⁶² Original Determination, USITC Pub. 2863 at I-11; First Five-Year Review, USITC Pub. 3315 at 10; Second Five-Year Review, USITC Pub. 3810 at 12; Third Five-Year Review, USITC Pub. 4255 at 13.

⁶³ Third Five-Year Review, USITC Pub. 4255 at 13; *see also*, First Five-Year Review, USITC Pub. 3315 at 10.

2. The Current Review

Demand Conditions. Apparent U.S. consumption of glycine was *** pounds in 2015, higher than in the original investigation or in any prior review.⁶⁴ The record of this review does not indicate that there have been any changes in factors driving glycine demand from those that the Commission found in the prior proceedings.⁶⁵

Supply Conditions. GEO identified itself and Chattem as the only two current domestic glycine producers.⁶⁶ The reporting domestic producer's share of apparent U.S. consumption was *** percent in 2015, which was slightly lower than the domestic industry's market share in the third review, and well below its level in the original investigation and first and second reviews.⁶⁷

Subject imports had a very small presence in the U.S. market in 2015. They accounted for *** percent of apparent U.S. consumption in that year, which was their lowest level since the original investigation.⁶⁸

Nonsubject imports accounted for *** percent of apparent U.S. consumption in 2015, which was higher than in the original investigation or any prior review.⁶⁹ Japan, Thailand, and India were the largest sources of nonsubject imports in 2015.⁷⁰

No purchaser responding to the questionnaire staff circulated in the adequacy phase identified changes in technology and production methods that affected the availability of glycine or changes in the ability to increase production of glycine.⁷¹ GEO observes that it has invested steadily throughout the period of review in the infrastructure, maintenance, and growth of its glycine plant.⁷²

Substitutability. The available information in the current record indicates that there continues to be a moderately high degree of substitutability between the domestic like product

⁶⁴ CR/PR at Table I-6. Apparent U.S. consumption of glycine was *** pounds in 1994, *** pounds in 1999, *** pounds in 2004, and *** pounds in 2009. *Id.*

⁶⁵ GEO did not identify any changes in demand conditions of competition. GEO's Response to Notice of Institution (Aug. 30, 2016) at 16. Neither of the two purchasers that responded to the Commission questionnaire *** in the end uses or applications for glycine. One indicated that *** and the other reported ***. CR/PR at D-4.

⁶⁶ GEO Response at 13; CR at I-15, PR at I-11-12.

⁶⁷ CR/PR at Table I-6. The domestic industry's market share was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. *Id.* We note, however, that the domestic industry's market share for 2010 was based on data for two producers (GEO and Chattem) whereas the domestic industry's market share for 2015 was based on data for only one producer (GEO).

⁶⁸ CR/PR at Table I-5. The market share of subject imports was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. *Id.*

⁶⁹ CR/PR at Table I-6. Nonsubject imports' market share was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. *Id.*

⁷⁰ *Id.*

⁷¹ CR/PR at D-3.

⁷² GEO Response to Notice of Institution (Aug. 30, 2016) at 16.

and subject imports and that price remains an important factor in purchasing decisions for glycine.⁷³

C. Likely Volume of Subject Imports

The Original Investigations and Prior Reviews. In the original investigation, the Commission found that substantial underutilized Chinese glycine capacity would likely be directed to the U.S. market, especially given the substantial increase in subject import volume and market share over the period of investigation, and that the U.S. market for glycine was the largest in the world.⁷⁴ It concluded that subject import market share would likely increase to injurious levels in the imminent future.⁷⁵

In the first five-year review, the Commission found that the antidumping duty order had significantly reduced the presence of subject imports in the U.S. market.⁷⁶ It also found that glycine capacity in China had increased since the original investigation, given the increased number of reported Chinese glycine producers.⁷⁷ Because the United States remained the world's largest market for products containing glycine and Chinese producers had demonstrated their ability to increase subject imports sharply during the original investigation, the Commission concluded that subject imports would likely increase significantly if the order were revoked.⁷⁸

In the second five-year review, the Commission observed that underutilized glycine capacity in China had increased substantially since the original investigation.⁷⁹ It therefore concluded that subject producers in China possessed the capacity to increase glycine exports to the United States substantially if the order were revoked.⁸⁰ It also found that subject producers in China continued to consider the U.S. market to be attractive and were likely to use their underutilized capacity to increase exports of glycine to the United States significantly if the order were revoked.⁸¹ It observed that subject imports had increased significantly since the first review notwithstanding the disciplining effect of the antidumping duty order, and that glycine producers in China had developed the ability to serve all segments of the U.S. market, including the market for pharmaceutical grade glycine.⁸² Given these considerations, it found that Chinese producers had the capacity to produce additional glycine for export to the United

⁷³ See, e.g., GEO Response at 11-13; GEO Final Comments (Dec. 5, 2016) at 3; see also, First Five-Year Review, USITC Pub. 3315 at 10 and Third Five-Year Review, USITC Pub. 4255 at 13.

⁷⁴ Original Determination, USITC Pub. 2863 at I-9-10.

⁷⁵ Original Determination, USITC Pub. 2863 at I-10.

⁷⁶ First Five-Year Review, USITC Pub. 3315 at 8.

⁷⁷ First Five-Year Review, USITC Pub. 3315 at 8-9.

⁷⁸ First Five-Year Review, USITC Pub. 3315 at 9.

⁷⁹ Second Five-Year Review, USITC Pub. 3810 at 9-10.

⁸⁰ Second Five-Year Review, USITC Pub. 3810 at 10.

⁸¹ Second Five-Year Review, USITC Pub. 3810 at 10-11.

⁸² Second Five-Year Review, USITC Pub. 3810 at 9-10.

States and an interest in doing so and that subject import volume would likely increase significantly if the order were revoked.⁸³

In the third five-year review, the Commission found that several factors supported its conclusion that the volume of subject imports would likely be significant in the event of revocation. First, there was considerable production capacity in China and a significant portion of this capacity was unused.⁸⁴ Second, the glycine industry in China was export oriented, and the large majority of its exports were of USP grade glycine, which accounted for approximately 90 percent of apparent U.S. consumption of glycine.⁸⁵ Third, the United States was an especially attractive market for the glycine producers in China, which was indicated by subject imports reaching their peak level since issuance of the antidumping duty order during the third review period.⁸⁶ Based on the demonstrated ability of glycine producers in China to increase the level of subject imports in the U.S. market rapidly, their substantial production capacity and likely unused capacity, their export orientation, and the attractiveness of the U.S. market, the Commission found that the likely volume of subject imports would be significant if the order were revoked.⁸⁷

The Current Review. The information available in the current review indicates that subject import volume is likely to be significant if the order is revoked. Subject import volume fluctuated during the period of review, and subject imports were present in substantial quantities in the U.S. market in 2011 and 2012 but were virtually nonexistent in 2014 and 2015.⁸⁸

The Chinese glycine industry has the ability to increase exports substantially in the event of revocation. The information available indicates that the industry possesses large capacity and excess capacity. According to data on the record, the Chinese glycine industry's excess capacity was more than 1.2 billion pounds in 2015, which was higher than in the original investigation or any prior review, and also vastly exceeded apparent U.S. consumption in 2015.⁸⁹ Consequently, Chinese glycine producers will likely have the ability to increase shipments significantly to the United States should the order be revoked.

⁸³ Second Five-Year Review, USITC Pub. 3810 at 10-11.

⁸⁴ Third Five-Year Review, USITC Pub. 4255 at 13.

⁸⁵ Third Five-Year Review, USITC Pub. 4255 at 13.

⁸⁶ Third Five-Year Review, USITC Pub. 4255 at 13.

⁸⁷ Third Five-Year Review, USITC Pub. 4255 at 13.

⁸⁸ CR/PR at Tables I-5 and I-6. Subject import volume peaked in 1994, the last year of the original POI, at 1.6 million pounds. Since then, under the orders, subject imports have remained in the U.S. market at sharply fluctuating quantities. Subject imports were *** pounds in 1999, *** pounds in 2004, and *** pounds in 2010. CR/PR at Table I-5. During the period of the current review, subject imports ranged from a high of 5.0 million pounds in 2011 to a low of 15,000 pounds in 2015. CR/PR at Table I-4. Subject imports' market share was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. CR/PR at Table I-6.

⁸⁹ See GEO Response at 11.

The information available also indicates that the Chinese glycine industry remains export oriented.⁹⁰ China is the world’s largest exporter of glycine; Chinese producers accounted for approximately 32.7 percent of global exports of glycine in 2015.⁹¹ As observed above, Chinese producers have continued to be present in the U.S. market since the imposition of the order, subject imports were present in substantial quantities during portions of the period of review, and Chinese producers have existing distribution networks in the United States.⁹² The record consequently indicates that the United States remains an attractive market for glycine producers from China.⁹³

Based on the information available in this expedited fourth five-year review, we find that the likely volume of subject imports, both in absolute terms and relative to consumption in the United States, would likely be significant in the event of revocation. The information available indicates that Chinese subject producers have an incentive to increase exports to the U.S. market upon revocation in light of their current excess capacity, export orientation, and historic interest in the U.S. market. Upon revocation, producers in China would likely use established channels of distribution to export additional quantities of subject merchandise to the United States.⁹⁴ We therefore find that the volume of subject imports would likely be significant upon revocation.

D. Likely Price Effects

Original Investigation and Prior Reviews. In the original investigation, the Commission found that the subject imports would likely enter the U.S. market at prices that would depress or suppress prices for the domestic like product.⁹⁵ It observed that subject import prices had declined over the period of investigation and had undersold the domestic like product in the “vast majority” of pricing comparisons.⁹⁶ Because subject imports were largely substitutable for the domestic like product, and lower prices would not result in increased demand, it found that increased supplies of low-priced subject imports would likely depress or suppress prices for the domestic like product, particularly given the bargaining power of the relatively concentrated glycine purchasers.⁹⁷

In the first five-year review, the Commission reiterated its finding from the original threat determination that subject imports would likely have significant price-suppressing

⁹⁰ CR/PR at Table I-7; CR at I-31, PR at I-20; GEO Response at 11.

⁹¹ CR/PR at Table I-7; CR at I-31, PR at I-20.

⁹² See GEO Response at 10.

⁹³ See GEO Response at 10; GEO Final Comments (Dec. 5, 2016) at 2. There are currently no barriers to subject glycine in third country markets. CR at I-31, PR at I-20.

⁹⁴ Because producers and importers of subject merchandise did not participate in this review, the record does not contain data addressing existing inventories of subject merchandise or the potential for product shifting.

⁹⁵ Original Determination, USITC Pub. 2863 at I-11.

⁹⁶ Original Determination, USITC Pub. 2863 at I-11.

⁹⁷ Original Determination, USITC Pub. 2863 at I-11.

and/or price-depressing effects.⁹⁸ Explaining that the information available on pricing was limited, the Commission used average unit value (“AUV”) data as the facts available while acknowledging that AUV comparisons may be affected by product mix issues.⁹⁹ It found that subject import AUVs had declined since the original investigation and were lower than the AUVs for the domestic like product in 1999, the last full year of the period of review.¹⁰⁰ Given this trend in the AUV data, the underselling observed during the original investigation, and the pertinent conditions of competition in the U.S. glycine market, it found that subject imports would likely have significant price-depressing and price-suppressing effects in the event of revocation.¹⁰¹

In the second five-year review, the Commission found that subject import AUVs remained well below the AUVs of shipments of the domestic like product in 2004 (as was the case in 1999 during the first five-year review).¹⁰² Accordingly, it concluded that the underselling found in the original investigation would likely recur in the event of revocation.¹⁰³ It further concluded that the substitutability of subject imports and the domestic like product, and the fact that changes in the price of glycine were unlikely to affect the quantity demanded, meant that a significant increase in low-priced subject imports would likely depress and suppress prices for the domestic like product.¹⁰⁴ Given these considerations, it found that revocation of the order would likely result in significant price effects.¹⁰⁵

In the full third review, the Commission collected quarterly pricing data for three products.¹⁰⁶ It found that prices for U.S.-produced glycine products increased between the first quarter of 2005 and the last quarter of 2010 and that subject import prices followed a similar trend.¹⁰⁷ It observed that subject imports from China undersold the domestic like product in the slight majority of quarterly price comparisons (10 of 19) and that the remaining instances of overselling (9 of 19) were not necessarily a reliable indicator of the relative level of subject import prices that would result if the antidumping duty order were revoked because they occurred mainly in 2008, an atypical year in which peak demand coincided with a global glycine shortage.¹⁰⁸ It found that subject producers in China likely would resume their aggressive underselling practices from the original investigation, which had persisted to some extent even with the order in place, so as to increase their U.S. market share.¹⁰⁹ Given the high degree of substitutability between subject and domestic glycine, the importance of price in purchasing

⁹⁸ First Five-Year Review, USITC Pub. 3315 at 9.

⁹⁹ First Five-Year Review, USITC Pub. 3315 at 9-10.

¹⁰⁰ First Five-Year Review, USITC Pub. 3315 at 10.

¹⁰¹ First Five-Year Review, USITC Pub. 3315 at 10.

¹⁰² Second Five-Year Review, USITC Pub. 3810 at 12.

¹⁰³ Second Five-Year Review, USITC Pub. 3810 at 12.

¹⁰⁴ Second Five-Year Review, USITC Pub. 3810 at 12.

¹⁰⁵ Second Five-Year Review, USITC Pub. 3810 at 12.

¹⁰⁶ Third Five-Year Review, USITC Pub. 4255 at 14.

¹⁰⁷ Third Five-Year Review, USITC Pub. 4255 at 14.

¹⁰⁸ Third Five-Year Review, USITC Pub. 4255 at 14-15.

¹⁰⁹ Third Five-Year Review, USITC Pub. 4255 at 15.

decisions, and the fact that importers and purchasers had admittedly sought out lower prices for glycine from subject sources, the Commission concluded that underselling was likely to result in significant price effects.¹¹⁰ Accordingly, it found that, if the antidumping duty order were revoked, significant volumes of subject imports likely would undersell the domestic like product to a significant degree in order to gain market share and likely would have significant depressing and/or suppressing effects within the reasonably foreseeable future.¹¹¹

The Current Review. Due to the expedited nature of this review, the record does not contain any additional pricing comparisons. We continue to find that there is a moderately high degree of substitutability between domestically produced glycine and subject imports and that price remains an important factor in purchasing decisions. As previously stated, if the order were revoked, subject producers would likely export significant volumes of glycine to the United States. They would likely sell the subject merchandise at low prices and undersell domestically produced glycine to gain market share, as occurred during the original POI, particularly because there have been no appreciable changes in the pertinent conditions of competition. Indeed, underselling persisted to some extent more recently during the third review even with the order in place.

Because price is important to purchasing decisions, the presence of significant quantities of subject imports that would likely enter the United States in the event of revocation and that would likely undersell the domestic like product would force the domestic industry either to lower prices or lose sales. In light of these considerations, we conclude that absent the disciplining effects of the order, subject imports of glycine would likely have significant depressing or suppressing effects on prices for the domestic like product.

E. Likely Impact

The Original Investigation and Prior Reviews. In the original threat determination, the Commission found that subject imports were likely to have a significant impact on the domestic industry in the imminent future.¹¹² It observed that the domestic industry's production, capacity utilization, employment, and financial performance declined during the final year of the period of investigation.¹¹³ It further observed that increased volumes of subject imports would prevent domestic producers from recovering cost increases and would exacerbate the domestic industry's already declining financial performance.¹¹⁴

In the first five-year review, the Commission found that the antidumping duty order had benefitted the domestic industry such that the industry was no longer in a vulnerable condition.¹¹⁵ The Commission, however, also concluded that, if the order were revoked, likely

¹¹⁰ Third Five-Year Review, USITC Pub. 4255 at 15.

¹¹¹ Third Five-Year Review, USITC Pub. 4255 at 15.

¹¹² Original Determination, USITC Pub. 2863 at I-11-12.

¹¹³ Original Determination, USITC Pub. 2863 at I-12.

¹¹⁴ Original Determination, USITC Pub. 2863 at I-12.

¹¹⁵ First Five-Year Review, USITC Pub. 3315 at 9.

increases in the volume of subject imports at prices lower than those for the domestic like product would have a significant impact on the domestic industry's production, shipments, sales, and revenue, which in turn would likely have an adverse effect on the domestic industry's employment, profitability, and ability to raise capital.¹¹⁶ The Commission therefore determined that revocation of the order would likely have a significant impact on the domestic industry within a reasonably foreseeable time.¹¹⁷

In the second five-year review, the Commission observed that certain indicators of domestic industry performance had declined since 1999, but concluded that the record information was not sufficient for it to make a finding on whether the domestic industry was vulnerable.¹¹⁸ It found that revocation of the order would result in a significant increase in the volume of subject imports at prices significantly lower than those of the domestic like product and that such increased volumes of subject imports would likely depress or suppress the domestic industry's prices significantly.¹¹⁹ It also found that the resultant reduction in the domestic industry's production, sales, and revenue levels would have a direct adverse impact on the industry's employment, profitability, and ability to raise capital and make and maintain necessary capital investments.¹²⁰ Accordingly, the Commission concluded that, if the order were to be revoked, subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.¹²¹

In the third five-year review, the Commission observed that, while the domestic industry's employment indicators showed various declines, the domestic industry's trade and financial performance showed improvements in certain respects, including production, capacity, capacity utilization, net sales, operating income, and operating income margin.¹²² Explaining that the pertinent data indicated that the domestic industry had weathered the recession profitably and was performing comparably or considerably better in 2010 than in nearly all prior years of the period of review except 2009, when it enjoyed record operating income, the Commission found that the domestic industry was not vulnerable.¹²³ Nonetheless, the Commission found that the likely significant increase in subject imports and their accompanying likely significant price effects would likely have a significant impact on the domestic industry's trade, employment, and financial indicators.¹²⁴ Consequently, it found that revocation of the antidumping duty order would likely have a significant impact on the domestic industry within a reasonably foreseeable time.¹²⁵

¹¹⁶ First Five-Year Review, USITC Pub. 3315 at 9.

¹¹⁷ First Five-Year Review, USITC Pub. 3315 at 9.

¹¹⁸ Second Five-Year Review, USITC Pub. 3810 at 13.

¹¹⁹ Second Five-Year Review, USITC Pub. 3810 at 13.

¹²⁰ Second Five-Year Review, USITC Pub. 3810 at 13.

¹²¹ Second Five-Year Review, USITC Pub. 3810 at 13.

¹²² Third Five-Year Review, USITC Pub. 4255 at 16-17.

¹²³ Third Five-Year Review, USITC Pub. 4255 at 17.

¹²⁴ Third Five-Year Review, USITC Pub. 4255 at 17.

¹²⁵ Third Five-Year Review, USITC Pub. 4255 at 17. The Commission also considered the role of nonsubject imports in the U.S. market. Notwithstanding the fact that nonsubject imports increased (Continued...)

The Current Review. Because of the expedited nature of this review, information on the record concerning the performance of the domestic glycine industry since the original investigation and prior reviews is limited. Since the last review, the domestic industry has increased its output and improved its financial performance. Although capacity was lower in 2015 than in 2010, both production and capacity utilization were higher in 2015 than they were in 2010.¹²⁶ Total 2015 U.S. shipments of *** pounds were larger than those reported in 2010.¹²⁷ In 2015, operating income was *** and the ratio of operating income to net sales was *** percent; each of these figures exceeded those reported in 2010.^{128 129 130}

As discussed above, revocation of the antidumping duty order would likely lead to a significant volume of subject imports that would undersell the domestic like product and significantly depress or suppress U.S. prices. Because of the maturity of the market, decreased prices for glycine would not significantly stimulate additional demand, but likely would cause purchasers to switch to lower-priced subject imports. Thus, we find that the volume and price effects of the subject imports would likely have a significant impact on the production, shipment, sales, market share, and revenues of the domestic industry. Declines in these indicators of industry performance would have a direct adverse impact on the industry's profitability and employment, as well as its ability to raise capital and to make and maintain capital investments.

We have also considered the role of factors other than subject imports, including the presence of nonsubject imports, so as not to attribute injury from other factors to the subject

(...Continued)

their market share from 2005 to 2010, the Commission concluded that there was no indication in the record that the increased presence of nonsubject imports would prevent subject imports from aggressively re-entering the U.S. market in significant quantities. Moreover, the limited quarterly pricing data on the record showed that subject imports undersold nonsubject imports; additionally, AUVs of nonsubject imports were generally higher than AUVs for subject imports. The Commission therefore concluded that the record data indicated that subject imports likely would be priced more aggressively than both the domestic like product and nonsubject imports if the order were revoked. Accordingly, the Commission found that, notwithstanding the increasing presence of nonsubject imports in the U.S. market, revocation of the order would likely have a significant impact on the domestic industry. Third Five Year Review, USITC Pub. 4255 at 17-18.

¹²⁶ CR/PR at Table I-3. In 2010, capacity was *** pounds, production was *** pounds, and capacity utilization was *** percent. *Id.* In 2015, capacity was *** pounds, production was *** pounds, and capacity utilization was *** percent. *Id.*

¹²⁷ CR/PR at Table I-3. Total 2010 U.S. shipments were *** pounds. *Id.*

¹²⁸ CR/PR at Table I-3. In 2010, operating income was \$*** and the ratio of operating income to net sales was *** percent. *Id.*

¹²⁹ Chairman Schmittlein and Commissioners Broadbent and Kieff find that the limited information on the record is insufficient to make a finding on whether the domestic industry is vulnerable to the continuation or recurrence of material injury to the industry in the United States producing glycine within a reasonably foreseeable time.

¹³⁰ Vice Chairman Johanson and Commissioners Pinkert and Williamson find that, based on the limited information available, the domestic industry is not vulnerable to the continuation or recurrence of material injury in the event of revocation of the order.

imports. Notwithstanding an increase in nonsubject imports over the period of review,¹³¹ the domestic industry's production, capacity utilization, and profitability were higher in 2015 than in 2010.¹³² Therefore, the likely impact of future subject imports is distinguishable from that of future nonsubject imports.

Accordingly, we conclude that, if the antidumping duty order were revoked, subject imports from China would likely have a significant impact on domestic producers of glycine within a reasonably foreseeable time.

IV. Conclusion

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

¹³¹ CR/PR at Table I-5.

¹³² CR/PR at Table I-3.

INFORMATION OBTAINED IN THESE REVIEWS

BACKGROUND

On August 1, 2016, the U.S. International Trade Commission (“Commission”) 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 glycine from China would likely lead to the continuation or recurrence of material injury to a domestic industry.² All interested parties were requested to respond to this notice by submitting certain information requested by the Commission.^{3 4} The following tabulation presents information relating to the background and schedule of this proceeding:

Effective or statutory date	Action
August 1, 2016	Notice of initiation and institution by Commerce and Commission
November 4, 2016	Commission vote on adequacy
November 29, 2016	Commerce results of its expedited review
January 31, 2016	Commission statutory deadline to complete expedited review
July 27, 2017	Commission statutory deadline to complete full review

¹ 19 U.S.C. 1675(c).

² *Glycine From China; Institution of a Five-Year Review*, 81 FR 50547, August 1, 2016. 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 duty order concurrently with the Commission’s notice of institution. *Initiation of Five-Year (“Sunset”) Review*, 81 FR 50462, August 1, 2016. Pertinent *Federal Register* notices are referenced in app. A, and may be found at the Commission’s website (www.usitc.gov).

³ As part of their response to the notice of institution, interested parties were requested to provide company-specific information. That information is presented in app. B. Summary data compiled in prior proceedings is presented in app. C.

⁴ Interested parties were also requested to provide a list of three to five leading purchasers in the U.S. market for the subject merchandise. The following three individual firms were named as the largest purchasers of glycine: ***. Purchaser questionnaires were sent to the firms identified. The responses received from two purchasers (***) are presented in app. D.

RESPONSES TO THE COMMISSION’S NOTICE OF INSTITUTION

Individual responses

The Commission received one submission in response to its notice of institution in the subject review from GEO Specialty Chemicals, Inc. (“GEO” or the “domestic interested party”).

A complete response to the Commission’s notice of institution requires that the responding interested party submit to the Commission all the information listed in the notice. Responding firms are given an opportunity to remedy and explain any deficiencies in their responses. A summary of the number of responses and estimates of coverage for each is shown in table I-1. The Commission did not receive any responses from Chinese producers or importers of the subject merchandise from China.

Table I-1

Glycine: Summary of responses to the Commission’s notice of institution

Type of interested party	Completed responses	
	Number	Coverage
Domestic producer	1	*** ¹
Respondents	0	0%

¹ The coverage figure presented, as provided by the domestic interested party in its response, represents the firms’ aggregate share of total U.S. production of glycine during 2015.

Source: *GEO’s Response to the Notice of Institution*, August 30, 2016, p. 15.

Party comments on adequacy

The Commission received a submission from GEO commenting on the adequacy of responses to the notice of institution and whether the Commission should conduct expedited or full reviews. GEO noted that its response should be deemed as adequate and the responses of the respondent interested parties should be deemed as inadequate. GEO further explained that in the full third five-year review, the Commission unanimously determined that revocation of the antidumping duty order on glycine from China would be likely to lead to the continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. GEO believes that the information on the record in this current five-year review is very similar to the information on the record of the full third five-year review that led to the Commission’s unanimous determination.⁵

⁵ GEO’s Comments on Adequacy of Responses and Expedited Review, October 11, 2016, p. 2.

RECENT DEVELOPMENTS IN THE INDUSTRY

Since the Commission's prior five-year review, the following developments have occurred in the glycine industry:

- 1.) Since 2011, GEO undertook several capital projects to modernize the quality control lab, update lab software, and ensure that the plant has adequate back-up parts.
- 2.) GEO hired a Director of Manufacturing, which has increased glycine production by 586,000 pounds and continues to improve capacity in 2016.
- 3.) The only known manufacturer of glycine in the European Union, Tessenderlo, stopped production in 2010 due to imports of glycine from China.⁶

THE PRODUCT

Commerce's scope

Commerce has defined the subject merchandise as:

...a free-flowing crystalline material, like salt or sugar. Glycine is produced at varying levels of purity and is used as a sweetener/taste enhancer, a buffering agent, reabsorbable amino acid, chemical intermediate, and a metal complexing agent. This order covers glycine of all purity levels. Glycine is currently classified under subheading 2922.49.4020 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheading is provided for convenience and Customs purposes, the written description of the merchandise under the order is dispositive.^{7 8}

Description and uses⁹

Glycine, also known as aminoacetic acid, is an organic chemical with the formula $\text{NH}_2\text{CH}_2\text{COOH}$. Glycine is a nonessential amino acid¹⁰ that is produced naturally by humans and other organisms as a building block for proteins. Commercial production of glycine uses

⁶ GEO's Response to the Notice of Institution, August 30, 2016, p. 16.

⁷ Glycine From the People's Republic of China: Continuation of Antidumping Duty Order, 76 FR 57951, September 19, 2011.

⁸ In a separate scope ruling the Department determined that D(-) Phenylglycine Ethyl Dane Salt is outside the scope of the order. Notice of Scope Rulings, 62 FR 62288, November 21, 1997.

⁹ Unless otherwise noted, this information is based on Glycine from China, Inv. No. 731-TA-718 (Third Review), USITC Publication 4255, August 2011, pp. I-8 through I-9.

¹⁰ Despite their name, nonessential amino acids are necessary for cell function. Nonessential amino acids are synthesized by the body, while essential amino acids must be furnished through the diet.

traditional chemical synthesis. Glycine is most commonly sold in its dry form as a white, free-flowing powder. Glycine is odorless and sweet to the taste.

Glycine is typically sold in two main grades: United States Pharmacopeial Convention (“USP”) grade and technical grade.¹¹ The glycine in these grades is chemically identical; the grades differ by the kind and amounts of impurities in the product. The USP-grade standard is stricter than technical-grade standard. The standard sets maximum allowable concentrations for impurities such as arsenic, heavy metals, and chlorides. For technical-grade glycine, the maximum allowable concentrations for impurities are either less strict or not specified. USP-grade glycine is typically used for pharmaceutical and food applications, while technical-grade glycine is used for industrial applications. Some customers have even stricter requirements for glycine purity than those included in the USP standard. These higher purity products are often referred to as “pharmaceutical grade” glycine, but the purity standards for these products are set by individual customers, not by government or industry organizations.

Glycine is used as a sweetener and flavor enhancer in food, beverage, and pharmaceutical products. Glycine is used to sweeten soft drinks, juice concentrates, and other beverages. Manufacturers of medicaments and personal care products, such as mouthwash and toothpaste, use glycine to mask the bitter taste of some active ingredients. Glycine is also used to enhance the flavor of animal feeds, both those for household pets and those for livestock. Pharmaceutical manufacturers use USP-grade glycine to promote the gastric absorption of certain drugs such as aspirin and to treat diarrhea in humans and animals. USP-grade glycine is required for products made for human or animal consumption.

Glycine is used as a buffering agent in certain products and manufacturing processes to maintain a stable pH. In antacids and analgesics, USP grade glycine helps to reduce the acidity of the digestive tract. In personal care products such as antiperspirants and cosmetics, USP grade glycine is used to reduce the acidity of other ingredients. Technical-grade glycine is used as a buffer in the production of foam rubber sponges.

Glycine can also be used as a starting material for producing other organic chemicals or in metal finishing. USP-grade glycine is typically used in the production of other amino acids and pharmaceuticals. Technical-grade glycine is used in metal finishing to brighten metal surfaces or to enhance the adhesion of rubber to a surface.

Glycine is typically packaged and sold in plastic bags weighing 50 to 200 pounds or in super sacks weighing up to 2,000 pounds. These bags and super sacks are placed on pallets and shipped by truck. Each package of glycine is accompanied by a certificate of analysis that states the levels of moisture and impurities in the product.

¹¹ The USP sets standards for medicines, food ingredients, and dietary supplements. Its standards are used in more than 140 countries, with its drug standards enforceable in the United States by the Food and Drug Administration. See <http://www.usp.org/about-usp>, accessed October 3, 2016.

Manufacturing process¹²

There are two known processes for the commercial production of glycine: the hydrogen cyanide (“HCN”) process and the monochloroacetic acid (“MCA”) process. Both of these processes can be used to produce both technical and USP grades of glycine. GEO uses the HCN process and Chattem Chemicals, Inc. (“Chattem”), another domestic producer of glycine, uses the MCA process. Most glycine producers in China use the MCA process.

The HCN process uses hydrogen cyanide and formaldehyde (CH₂O) as the primary starting materials. These chemicals are mixed with aqueous ammonia (NH₄OH) in the first reaction step of the process. The reaction product from this first step is then reacted with caustic soda (NaOH) to produce sodium glycinate. Glycine is produced when an acid, such as sulfuric acid, is mixed with sodium glycinate. The glycine solution then goes through one or more crystallization and filtration steps to produce a pure white glycine powder.

For the MCA process, the primary feedstocks are monochloroacetic acid (ClCH₂COOH) and ammonia. These feedstocks are mixed together in the presence of a catalyst to produce glycine. The MCA process is the less economical process in terms of operating cost due to higher raw material and energy costs.

U.S. tariff treatment

Glycine is classifiable in the Harmonized Tariff Schedule of the United States (“HTS”) under subheading 2922.49.40 and reported for statistical purposes under statistical reporting number 2922.49.4020. The current rate of duty for glycine is 4.2 percent *ad valorem*. At the time of the original investigation, general U.S. tariffs on glycine, applicable to U.S. imports that are products of China and classified under these headings, were also 4.2 percent.¹³

The definition of the domestic like product

The domestic like product is defined as the domestically produced product or products which are like, or in the absence of like, most similar in characteristics and uses with, the subject merchandise. In its original determination, expedited first five-year review determination, expedited second five-year review determination, and third five-year review determination, the Commission defined the domestic like product to encompass glycine of all purity levels, coextensive with Commerce’s scope.¹⁴

¹² Unless otherwise noted, this information is based on *Glycine from China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, p. I-9.

¹³ Decisions on the tariff classification and treatment of imported goods are solely within the authority of U.S. Customs and Border Protection.

¹⁴ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. I-6; *Glycine From China, Inv. No. 731-TA-718 (Review)*, USITC Publication 3315, June 2000, p. 4; *Glycine From China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October

(continued...)

In its notice of institution for this review, the Commission solicited comments from interested parties regarding the appropriate domestic like product and domestic industry. GEO did not provide comments regarding the domestic like product.

THE ORIGINAL INVESTIGATION AND SUBSEQUENT REVIEWS

The original investigation

The original investigation resulted from petitions filed on July 1, 1994 alleging that an industry in the United States was materially injured, or was threatened with material injury by reason of imports sold at less than fair value (“LTFV”) from China.¹⁵ The Commission completed the original investigation in March 1995, determining that an industry in the United States was materially injured by reason of LTFV imports from China.¹⁶ Commerce subsequently issued an antidumping order to impose a 155.89 percent *ad valorem* “all companies” duty on imports of glycine from China in March 1995.¹⁷

The first five-year review

On May 5, 2000, the Commission determined that it would conduct an expedited review on the antidumping duty order on glycine from China.¹⁸ On July 3, 2000, the Commission determined that revocation of the antidumping duty order would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.¹⁹ Following affirmative determinations in the five-year reviews by Commerce and the Commission, effective July 25, 2000, Commerce issued a continuation of the antidumping duty order on imports of glycine from China, with an “all companies” rate of 155.89 percent.²⁰

(...continued)

2005, p. 4; *Glycine From China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, p. 5.

¹⁵ The petitions were filed by Chattem Drug and Chemical Co. (“Chattem”), Chattanooga, Tennessee, and Hampshire Chemical Corporation (“Hampshire”), Lexington, Massachusetts.

¹⁶ *Glycine From the People’s Republic of China*, 60 FR 14962, March 21, 1995.

¹⁷ *Antidumping Duty Order: Glycine From the People’s Republic of China*, 60 FR 16116, March 29, 1995.

¹⁸ *Glycine From China*, 65 FR 31145, May 16, 2000. The Commission found that the domestic response was adequate and the respondent foreign industry response was inadequate.

¹⁹ *Glycine From China*, 65 FR 43037, July 12, 2000.

²⁰ *Glycine From the People’s Republic of China; Final Results of Expedited Sunset Review of Antidumping Duty Order*, 65 FR 36405, June 8, 2000; *Continuation of Antidumping Duty Order: Glycine from the People’s Republic of China*, 65 FR 45752, July 25, 2000.

The second five-year review

On September 7, 2005, the Commission determined that it would conduct an expedited review of the antidumping duty order on glycine from China.²¹ On October 31, 2005, the Commission determined that revocation of the antidumping duty order would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.²² Following affirmative determinations in the second five-year reviews by Commerce and the Commission, effective November 15, 2005, Commerce issued a continuation of the antidumping duty order on imports of glycine from China, with an “all companies” rate of 155.89 percent.²³

The third five-year review

On February 9, 2011, the Commission determined that it would conduct a full review of the antidumping duty order on glycine from China.²⁴ On August 30, 2011, the Commission determined that revocation of the antidumping duty order would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.²⁵ Following affirmative determinations in the third five-year reviews by Commerce and the Commission, effective September 19, 2011, Commerce issued a continuation of the antidumping duty order on imports of glycine from China, with an “all companies” rate of 155.89 percent.²⁶

PRIOR RELATED INVESTIGATIONS

Glycine has been the subject of prior antidumping duty investigations in the United States. In 1968, Chattem Drug and Chemical Co., the forerunner of today’s Chattem Chemicals,

²¹ *Glycine From China*, 70 FR 55625, September 22, 2005. The Commission found that the domestic response was adequate and the respondent foreign industry response was inadequate.

²² *Glycine From China*, 70 FR 66850, November 3, 2005.

²³ *Glycine from the People’s Republic of China; Final Results of the Expedited Sunset Review of the Antidumping Duty Order*, 70 FR 58185, October 5, 2005; *Glycine from the People’s Republic of China; Continuation of Antidumping Duty Order*, 70 FR 69316, November 15, 2005.

²⁴ *Glycine From China*, 76 FR 8771, February 15, 2011. Chairman Deanna Tanner Okun and Commissioners Daniel R. Pearson and Shara L. Aranoff concluded that the domestic group response for this review was adequate and the respondent group response was inadequate and voted for a full review. Vice Chairman Irving R. Williamson and Commissioners Charlotte R. Lane and Dean A. Pinkert concluded that the domestic group response for this review was adequate and the respondent group response was inadequate and voted for an expedited review.

²⁵ *Glycine From China*, 76 FR 55109, September 6, 2011.

²⁶ *Notice of Final Results of Expedited Sunset Review of the Antidumping Duty Order: Glycine From the People’s Republic of China*, 76 FR 7150, February 9, 2011; *Glycine from the People’s Republic of China; Continuation of Antidumping Duty Order*, 76 FR 57951, September 19, 2011.

Inc., filed an antidumping petition against imports of glycine from Japan, France, the Federal Republic of Germany, and the Netherlands.²⁷ The Department of Treasury found no sales at LTFV from the Federal Republic of Germany or the Netherlands and issued a negative determination concerning Japan on the basis of the Japanese exporter's agreement to discontinue LTFV sales.²⁸ Antidumping duties were imposed on imports of glycine from France following an affirmative injury determination by the Commission, which was subsequently revoked in 1979.²⁹

On March 30, 2007, GEO filed antidumping duty petitions alleging that the United States is materially injured and threatened with material injury by reason of LTFV imports of glycine from India, Japan, and Korea.³⁰ The Commission issued final negative determinations on Japan, Korea,³¹ and India.³²

ACTIONS AT COMMERCE

Commerce has not made any company revocations, duty absorption findings, or completed scope inquiry reviews since the imposition of the order. In addition, Commerce has not completed any critical circumstances reviews or changed circumstances reviews since the third continuation of the order in 2011.

Anti-circumvention review and scope ruling

Since the third continuation of the antidumping order in 2011, Commerce has completed one anti-circumvention review. On December 18, 2009, the domestic interested parties filed a request for initiation of an anti-circumvention inquiry alleging that two companies, AICO Laboratories ("AICO") and Paras Intermediaries Pvt. Ltd. ("Paras"), were circumventing the order by importing technical-grade glycine from China to India for processing and/or repackaging. The firms then exported the finished product marked as originating in India to the United States. On August 19, 2010, the domestic interested parties filed additional information, which included an anti-circumvention allegation against a third company, Salvi Chemical Industries ("Salvi") as well as its export arm, Nutracare International.³³

²⁷ *Aminoacetic Acid (Glycine) from France, Inv. No. AA1921-61*, USITC Publication 313, February 1970, p. 4.

²⁸ *Aminoacetic Acid (Glycine) From France*, 34 FR 18559, November 12, 1969; *Aminoacetic Acid From France*, 35 FR 4676, February 17, 1970.

²⁹ *Aminoacetic Acid (Glycine) From France*, 35 FR 5009, March 18, 1979; *Notice of Modification or Revocation of Dumping Findings*; 44 FR 12417, February 28, 1979.

³⁰ *Glycine from India, Japan, and Korea*, 72 FR 17580, April 9, 2007.

³¹ *Glycine From Japan and Korea*, 73 FR 3484, January 18, 2008.

³² *Glycine From India; Determination*, 73 FR 26413, May 9, 2008.

³³ *Glycine From the People's Republic of China: Initiation of Antidumping Anti-circumvention Inquiry*, 75 FR 66352, October 28, 2010.

In both its preliminary and final determinations, Commerce found Salvi and AICO were circumventing the order by exporting glycine from India while using Chinese-origin inputs. Commerce also found that Paras was not circumventing the order because its exports of glycine from India were produced from inputs originating in India.³⁴ On December 3, 2012, Commerce determined that glycine exported from China that is further processed in India is within the scope of the antidumping duty order.³⁵

New shipper review

On September 28, 2012, Commerce received a request for a new shipper review from Donghua Fine Chemical and its affiliate, Hebei Donghua Jiheng Chemical Co., Ltd. (“Donghua Chemical”). They certified that they did not export subject merchandise to the United States and are not affiliated with any company that exported subject merchandise to the United States during the period of investigation.³⁶ On December 9, 2013, Commerce rescinded the new shipper review of Donghua Fine Chemical. Commerce found that Donghua Fine Chemical appeared affiliated with Chinese firms that had previously shipped subject merchandise to the United States, therefore failing to certify to its first U.S. entry, U.S. shipment, and U.S. sale. In addition, Donghua Fine Chemical failed to report its first U.S. entry and/or U.S. shipment within the deadline of one year of its request for a new shipper review.³⁷

Administrative reviews

Since the third continuation of the antidumping order in 2011, Commerce has completed four administrative reviews of glycine from China as shown in table I-2. Commerce also initiated an administrative review on April 30, 2015 for the period between March 1, 2014 and February 28, 2015.³⁸

³⁴ *Glycine From the People’s Republic of China: Preliminary Partial Affirmative Determination of Circumvention of the Antidumping Duty Order and Initiation of Scope Inquiry*, 77 FR 21532, April 10, 2012; *Glycine From the People’s Republic of China: Final Partial Affirmative Determination of Circumvention of the Antidumping Duty Order*, 77 FR 73426, December 10, 2012.

³⁵ *Notice of Scope Rulings*, 78 FR 32372, May 30, 2013.

³⁶ *Glycine From the People’s Republic of China: Notice of Initiation of Antidumping Duty New Shipper Review*, 77 FR 65669, October 30, 2012.

³⁷ *Glycine From the People’s Republic of China: Final Rescission of Antidumping Duty New Shipper Review*; 2012, 78 FR 73837, December 9, 2013.

³⁸ *Initiation of Antidumping and Countervailing Duty Administrative Reviews*, 80 FR 24233, April 30, 2015.

Table I-2

Glycine: Commerce’s administrative reviews of the antidumping duty order concerning China

Date results published	Producer or exporter	Period of review	Margin (percent)
October 18, 2012 (77 FR 64100)	Baoding Mantong Fine Chemistry Co., Ltd.	03/01/10-02/28/11	453.79
April 8, 2013 (78 FR 20891)	PRC-wide entity (including Baoding Mantong Fine Chemistry Co., Ltd.)	03/01/11-02/29/12	453.79
October 31, 2014 (79 FR 64746), amended December 16, 2015 (80 FR 78170)	PRC-wide entity (including Hebei Donghua Jiheng Fine Chemical Co., Ltd.)		453.79
	Evonik	03/01/12-02/28/13	155.89
October 15, 2015 (80 FR 62027)	Baoding Mantong Fine Chemistry Co. Ltd.	03/01/13-02/28/14	143.87

Source: Cited *Federal Register* notices.

Five-year review results

Commerce calculated a PRC-wide weighted-average dumping margin of 155.89 percent in its original investigation,³⁹ a PRC-wide weighted-average dumping margin of 155.59 percent in its expedited first five-year review,⁴⁰ and a PRC-wide weight-average dumping margin of 155.89 percent in its expedited second five-year review⁴¹ and third five-year review.⁴²

Commerce notified the Commission that it had not received adequate responses from the respondent interested parties to its notice initiating this current five-year review of the antidumping duty order on imports of glycine from China. As a result, Commerce intends to conduct an expedited review of the order and to issue its final result by November 29, 2016.⁴³

³⁹ *Notice of Final Determination of Sales at Less Than Fair Value: Glycine From the People’s Republic of China*, 60 FR 5620, January 30, 1995.

⁴⁰ *Glycine From the People’s Republic of China; Final Results of Expedited Sunset Review of Antidumping Duty Order*, 65 FR 36405, June 8, 2000.

⁴¹ In its expedited second five-year review, Commerce also calculated a weighted-average dumping margin of 155.89 percent for Baoding Mantong Fine Chemistry Co., Ltd. and Nantong Dongchang Chemical Industry Corporation. *Glycine from the People’s Republic of China; Final Results of the Expedited Sunset Review of the Antidumping Duty Order*, 70 FR 58185, October 5, 2005.

⁴² *Notice of Final Results of Expedited Sunset Review of the Antidumping Duty Order: Glycine From the People’s Republic of China*, 76 FR 7150, February 9, 2011.

⁴³ Jim Doyle, Director, Office V, AD/CVD Operations, Enforcement and Compliance, Department of Commerce, letter to Michael Anderson, September 20, 2016.

THE INDUSTRY IN THE UNITED STATES

U.S. producers

During the original investigation, the two petitioners, Chattem and Hampshire, supplied the Commission with information on their U.S. glycine operations. These two firms accounted for all U.S. production of glycine in 1994.⁴⁴ Chattem and Hampshire continued to be the only U.S. producers of glycine during the expedited first five-year review and expedited second five-year review.^{45 46} In the third five-year review, the Commission received two questionnaire responses from the two U.S. producers, Chattem and GEO Specialty Chemicals, Inc. (“GEO”), which is the successor to Hampshire, accounting for all U.S. production of glycine in 2010.⁴⁷ In this current fourth five-year review, GEO identified itself and Chattem as the only two producers of the domestic like product.⁴⁸

Definition of the domestic industry and related party issues

The domestic industry is defined as the U.S. producers as a whole of the domestic like product, or those producers whose collective output of the domestic like product constitutes a major proportion of the total domestic production of the product. In its original determination, expedited first five-year review determination, and expedited second five-year review determination, the Commission defined the domestic industry as all U.S. producers of the domestic like product, which at the time included Chattem and Hampshire.⁴⁹ In its third five-

⁴⁴ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. II-12.

⁴⁵ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 3315, June 2000, p. I-6; *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 3810, October 2005, p. I-6

⁴⁶ During the 1992-94 period, Hampshire accounted for *** percent of U.S. production of glycine with Chattem producing the remaining *** percent. In 1999, Hampshire manufactured *** percent of U.S.-produced glycine and Chattem accounted for the remaining *** percent. In 2004, Hampshire accounted for *** percent of U.S. production of glycine with Chattem producing the remaining *** percent. In addition, neither Chattem nor Hampshire had imported glycine from China during the original investigation, expedited first five-year review and expedited second five-year review. *Investigation No. 731-TA-718 (Review): Glycine from China—Staff Report*, INV-X-120, June 2, 2000, p. I-9; *Investigation No. 731-TA-718 (Second Review): Glycine from China—Staff Report*, INV-CC-165, September 29, 2005, table I-3.

⁴⁷ GEO accounted for *** percent of U.S. production of glycine with Chattem producing the remaining *** percent during 2010. *Investigation No. 731-TA-718 (Third Review): Glycine from China—Staff Report*, INV-JJ-079, July 28, 2011, p. I-17.

⁴⁸ *GEO’s Response to the Notice of Institution*, August 30, 2016, p. 13.

⁴⁹ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. I-6; *Glycine From China, Inv. No. 731-TA-718 (Review)*, USITC Publication 3315, June

(continued...)

year review determination, the Commission defined the domestic industry as all U.S. producers of the domestic like product, which at the time included Chattem and GEO.⁵⁰ In this current fourth five-year review, GEO did not provide comments regarding the domestic industry.

There were no related party issues in the original investigation, the expedited first five-year review, the expedited second five-year review, and the third five-year review as neither Chattem nor GEO (formerly Hampshire) imported glycine or were related to any exporter or importer of glycine during the periods examined.⁵¹ In this current fourth five-year review, GEO indicated that it does not know of any related parties that import or export Chinese glycine.⁵²

U.S. producers' trade and financial data

The Commission asked domestic interested parties to provide trade and financial data in their response to the notice of institution of the current five-year review.⁵³ Table I-3 presents a compilation of the data submitted from the responding U.S. producer in this current five-year review as well as trade and financial data submitted by U.S. producers in the original investigation, expedited first five-year review, expedited second five-year review, and full third five-year review.

Table I-3

Glycine: Trade and financial data submitted by U.S. producers, 1994, 1999, 2004, 2010, and 2015

* * * * *

U.S. IMPORTS AND APPARENT CONSUMPTION

U.S. importers

In the final phase of the original investigation, the Commission issued U.S. importer questionnaires to 16 firms believed to be importers of glycine. The Commission received usable questionnaire responses from 12 U.S. importers, accounting for 94 percent of U.S. imports of

(...continued)

2000, p. 5; *Glycine From China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, p. 5.

⁵⁰ *Glycine From China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, p. 6.

⁵¹ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. I-6; *Glycine From China, Inv. No. 731-TA-718 (Review)*, USITC Publication 3315, June 2000, p. 5, n.17; *Glycine From China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, p. 5, n.19; *Glycine From China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, p. 6, n.29.

⁵² *GEO's Response to the Notice of Institution*, August 30, 2016, p. 13.

⁵³ Individual company trade and financial data are presented in app. B.

glycine from China during 1994.⁵⁴ The expedited first five-year review and the expedited second five-year review did not utilize U.S. importer questionnaires.⁵⁵

In the third five-year review, the Commission issued U.S. importer questionnaires to 39 firms believed to be importers of glycine, as well as to all U.S. producers of glycine. The Commission received usable questionnaire responses from 15 firms, accounting for virtually all imports of glycine from China in 2010, 51.2 percent of total subject imports during 2005-10, and 30.7 percent of total U.S. imports during 2005-10.⁵⁶ Of the 15 U.S. importers who provided usable data, nine of these firms imported glycine from China.⁵⁷

In its response to the Commission's notice of institution in the current fourth five-year review, GEO provided a list of 13 U.S. importers that may be importing or have imported glycine from China.⁵⁸

U.S. imports

In its original investigation, the Commission found that substantial underutilized Chinese glycine capacity would likely be directed to the U.S. market due to a large increase in subject import volume and market share during 1992-94. In addition, the U.S. market for products made of glycine was the world's largest market for glycine at the time.⁵⁹ The market share of the quantity of subject imports had increased from *** percent in 1992 to *** percent in 1993 and to *** percent in 1994.⁶⁰ The Commission therefore concluded that the market share for subject imports would likely increase to injurious levels in the imminent future.⁶¹

In the expedited first five-year review, the Commission found that the antidumping duty order had significantly reduced the presence of subject imports in the U.S. market. In addition, the Commission found that Chinese capacity to produce glycine had increased since the original

⁵⁴ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. II-25, n.96.

⁵⁵ *Glycine From China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, p. I-10.

⁵⁶ *Ibid.*, pp. I-10, IV-1.

⁵⁷ *Ibid.*, p. I-10. The Commission also received a U.S. importer questionnaire response from ***, an importer of glycine from China and India, which was not usable. Furthermore, the Commission received a U.S. importer questionnaire response from ***, an importer of glycine from China in 2008 and 2009, whose data was excluded because of the altering/overbalance effect that its high-end product would have had on overall trends. *Investigation No. 731-TA-718 (Third Review): Glycine from China—Staff Report*, INV-JJ-079, July 28, 2011, p. I-18, n.39.

⁵⁸ *GEO's Response to the Notice of Institution*, August 30, 2016, pp. 13-14.

⁵⁹ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. II-9.

⁶⁰ *Investigation No. 731-TA-718 (Final): Glycine from China—Staff Report*, INV-S-020, February 27, 1995, p. I-60.

⁶¹ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. II-12.

investigation since the number of Chinese producers of glycine had increased.⁶² Since the antidumping duty order was imposed in 1995, there were minimal amount of imports of glycine into the United States from China, although there was somewhat more glycine imports from all sources in 1999 than in 1994, primarily from nonsubject countries.⁶³ Since the United States remained the world's largest market for products containing glycine and Chinese producers had demonstrated their ability to increase subject imports sharply during the original investigation, the Commission concluded that subject imports would likely increase to a significant level if the order were to be revoked.⁶⁴

In the expedited second five-year review, the Commission concluded that Chinese producers possessed the capacity to substantially increase glycine exports to the United States if the order were to be revoked.⁶⁵ During this review, subject imports increased in all but one year between 2000 and 2004, reaching 0.5 million more pounds (over 3,100 percent higher) in 2004 than in 2000, while nonsubject imports fluctuated, trending upwards over the period, with 1.0 million more pounds (29.5 percent higher) of imports in 2004 than in 2000.⁶⁶ The Commission noted that underutilized glycine capacity in China had increased substantially since the original investigation. Representatives of foreign producers and importers testified that capacity was between 22 million and 33 million pounds during the original investigation and new Chinese glycine producers were identified during the expedited first five-year review.⁶⁷ The Commission also noted that the domestic interested parties had provided market research indicating that Chinese glycine capacity was over *** million pounds in 2004, and an independent market research source indicated that the four main Chinese glycine producers alone possessed a capacity of 50 million pounds in 2002.⁶⁸ In addition, the Commission found that a significant portion of that capacity was not utilized.⁶⁹

The Commission also found in the expedited second five-year review that Chinese producers considered the U.S. market to be attractive and were likely to use their underutilized capacity to significantly increase exports of glycine to the United States in the event of revocation. The Commission noted that subject imports had increased significantly since the

⁶² *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Review)*, USITC Publication 3315, June 2000, p. 8.

⁶³ *Ibid*, p. 1-8.

⁶⁴ *Ibid*, p. 9.

⁶⁵ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, pp. 11.

⁶⁶ *Ibid*, p. 1-12.

⁶⁷ *Ibid*, pp. 9-10.

⁶⁸ *Glycine from China, Inv. No. 731-TA-718 (Second Review)*, Confidential Views, pp. 16-17.

⁶⁹ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, pp. 10. Chinese producers of glycine also substantially increased their exports of glycine to the European Union after the European Council declined to impose antidumping measures of imports of glycine from China in 2000, which demonstrated their ability to increase glycine exports rapidly. *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, pp. 10, n.58.

expedited first five-year review notwithstanding the restraining effect of the antidumping duty order. Chinese glycine producers had also developed the ability to serve all segments of the U.S. glycine market since 1999, including the market for pharmaceutical grade glycine, and substantial administrative and judicial efforts, albeit unsuccessful, were exerted by a leading Chinese producer to have Commerce issue an individual duty deposit rate lower than the “all others” rate of 155.89 percent. The Commission consequently concluded that Chinese producers had the capacity and interest to produce additional glycine for export to the United States, particularly if the order were revoked.⁷⁰

In the full third five-year review, the Commission found that the likely volume of subject imports, both in absolute terms and as a share of the U.S. market, would be significant if the order were revoked. During this review, the volume of subject imports from China increased from 1.9 million pounds in 2005 to 3.6 million pounds in 2008, decreased to 126,000 pounds in 2009, and increased to 1.2 million pounds in 2010.⁷¹ During this review, the domestic producers ***.⁷² The Commission’s conclusion was therefore based on the demonstrated ability of Chinese producers of glycine to increase the level of imports in the U.S. market rapidly, their substantial production capacity and likely unused capacity, their export orientation, particularly with respect to USP grade glycine, and the attractiveness of the U.S. market.⁷³

In its response to the Commission’s notice of institution in this current five-year review, GEO noted that Chinese glycine exporters would “inundate the U.S. market with their excess capacity at prices that would depress and suppress domestic industry prices if the Commission were to revoke the antidumping duty order on glycine from China.”⁷⁴ The domestic interested party believes that subject import volume would likely increase significantly if the order were revoked.⁷⁵

⁷⁰ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, pp. 10-11.

⁷¹ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, pp. 12-13.

⁷² *Glycine from China, Inv. No. 731-TA-718 (Third Review)*, Confidential Views, p. 18.

⁷³ *Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Third Review)*, USITC Publication 4255, August 2011, p. 13.

⁷⁴ *GEO’s Response to the Notice of Institution*, August 30, 2016, p. 9.

⁷⁵ *Ibid.*, p. 11.

Table I-4 presents the quantity, value, and unit value for imports from China as well as the other top sources of U.S. imports using official Commerce statistics during 2011-15 (shown in descending order of 2015 imports by quantity). During this period, there were no imports from Taiwan and Thailand until 2014. The overall quantity of U.S. imports of glycine from China peaked in 2011 and decreased by 99.7 percent from 2011 to 2015, while total U.S. imports of glycine increased by 88.9 percent from 2012 to 2015 after decreasing by 18.3 percent from 2011 to 2012. The overall value of U.S. imports of glycine from China also peaked in 2011 and decreased by 99.6 percent from 2011 to 2015, while the total value of U.S. imports of glycine increased by 111.2 percent from 2012 to 2015 after decreasing by 7.9 percent from 2011 to 2012. Japan had the largest quantity and value of imports in 2015 even after reaching its peak quantity and value in 2014.⁷⁶

⁷⁶ GEO noted that it is not aware of any sources of information on national or regional prices for domestic glycine or Chinese glycine in the U.S. market or other markets. However, GEO explained that it monitors pricing offered by Chinese glycine exporters. Chinese exporters offer to sell glycine, which is substitutable with the domestic like product, between \$1.22 and \$1.33 per pound delivered duty-paid, which is far below GEO's cost to produce glycine. *Ibid.*, pp. 11-15.

Table I-4
Glycine: U.S. imports, 2011-15

Item	Calendar year				
	2011	2012	2013	2014	2015
Quantity (1,000 pounds)					
China (subject)	5,027	2,199	1,063	62	15
Japan	416	2,253	6,245	7,281	6,011
Thailand	0	0	0	265	3,895
India	3,323	2,555	4,286	4,139	2,926
Malaysia	0	0	132	260	340
Taiwan	0	0	0	0 ¹	198
All other imports (nonsubject)	176	295	216	312	409
Total imports	8,941	7,302	11,942	12,319	13,795
Landed, duty-paid value (\$1,000)					
China (subject)	6,838	3,073	924	69	25
Japan	1,007	4,733	13,332	15,595	12,450
Thailand	0	0	0	644	8,665
India	6,632	5,414	8,192	8,295	6,008
Malaysia	0	0	147	317	415
Taiwan	0	0	0	3	379
All other imports (nonsubject)	265	360	264	546	744
Total imports	14,742	13,579	22,859	25,469	28,685
Unit value (dollars per pound)					
China (subject)	1.36	1.40	0.87	1.11	1.67
Japan	2.42	2.10	2.13	2.14	2.07
Thailand	--	--	--	2.43	2.22
India	2.00	2.12	1.91	2.00	2.05
Malaysia	--	--	1.11	1.22	1.22
Taiwan	--	--	--	(²)	1.91
All other imports (nonsubject)	1.51	1.22	1.22	1.75	1.82
Total imports	1.65	1.86	1.91	2.07	2.08

¹ Less than 0.1.

² Official import statistics report an average unit value of 54.55 dollars per pound on imports of glycine from Taiwan in 2014. Staff believes that this average unit value is an error.

Note.--Figures may not add to total shown due to rounding.

Source: Official statistics of Commerce for HTS statistical reporting number 2922.49.4020, accessed on August 17, 2016.

Apparent U.S. consumption and market shares

Table I-5 presents data on U.S. producers' U.S. shipments, U.S. imports, and apparent U.S. consumption, while table I-6 presents data on U.S. market shares of U.S. apparent consumption. The quantity of U.S. apparent consumption has increased overall since the original investigation and since each subsequent five-year review. Market share of imports of glycine from China decreased substantially during the expedited first five-year review, increased in the expedited second five-year review and the full third five-year review, and again decreased substantially during this current fourth five-year review. Market share of total U.S. imports decreased in the expedited first five-year review and have increased in each subsequent five-year review.

Table I-5

Glycine: U.S. producers' U.S. shipments, U.S. imports, and apparent U.S. consumption, 1994, 1999, 2004, 2010, and 2015

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Table I-6

Glycine: Apparent U.S. consumption and U.S. market shares, 1994, 1999, 2004, 2010, and 2015

* * * * *

THE INDUSTRY IN CHINA

During the original investigation, the Commission sent questionnaires to five major producers of glycine in China: Suzhou Comtech Chemical Industrial Co., Ltd. ("Suzhou Comtech"); Dong Fang Mancheng Chemical Plant; Baoding Zhongyuan Chemical Industrial Plant ("Baoding Zhongyuan"); Tiancheng Pharmaceutical Co., Ltd. ("Tiancheng"); and Ba Fen Shen.⁷⁷ Three Chinese firms (Baoding Zhongyuan, Suzhou Comtech, and Tiancheng) provided usable responses whose U.S. exports accounted for *** percent of total U.S. imports of glycine during 1994. These firms reported total shipments of *** pounds during 1994 of which *** pounds were exported to the United States. These exports accounted for *** percent of total Chinese exports and *** percent of all shipments.⁷⁸ Estimates of China's annual production capacity ranged from 22 million to 33 million pounds in 1994.⁷⁹

In the expedited first five-year review, the Commission did not receive any information from Chinese producers. Based on additional research during this five-year review, Staff found

⁷⁷ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Final)*, USITC Publication 2863, March 1995, p. II-23.

⁷⁸ *Investigation No. 731-TA-718 (Final): Glycine from China—Staff Report*, INV-S-090, February 27, 1995, p. I-54.

⁷⁹ *Ibid.*, p. I-54, n.86. ***. *Ibid.*, p. I-57.

additional Chinese firms who manufacture glycine. This increase in the number of producers in China as well as an increase in demand for glycine to produce the herbicide glyphosate therefore indicated an increase in production capacity for glycine in China since the original investigation.⁸⁰

In the expedited second five-year review, the Commission did not directly receive any additional information on production capacity or shipments from Chinese firms. However, a domestic interested party identified 14 producers of glycine in China.⁸¹ The domestic interested party also submitted ***.⁸² Another source reported a lower production capacity of approximately 50 million in 2002. A possible reason for the different estimate of production could be differences in reporting for production of glycine that is further processed into glyphosate and glycine that is produced for commercial sale. However, even the lower estimate of production capacity indicated a large increase in Chinese capacity since the original investigation.⁸³

In the full third five-year review, the Commission again did not receive information directly from Chinese producers. ***. In addition, information collected during the third five-year review indicated that ***.⁸⁴

In its response to the Commission's notice of institution in the current fourth five-year review, GEO noted that Chinese glycine producers exhibit a significant export orientation, with the United States being the world's largest market for products made from glycine.⁸⁵ In addition, "despite anemic utilization rates, Chinese producers continue to add to their already significantly underutilized capacity."⁸⁶ According to a market study commissioned for this current five-year review, Chinese producers maintained a capacity to produce over 661,000 short tons although each manufacturer's capacity utilization rarely exceeded 50 percent in 2015. The market study also predicts that Chinese producers will have a capacity of over 992,000 short tons by 2020.⁸⁷

⁸⁰ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Review)*, USITC Publication 3315, June 2000, p. I-14.

⁸¹ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, p. I-20.

⁸² *Investigation No. 731-TA-718 (Second Review): Glycine from China—Staff Report*, INV-CC-165, September 29, 2005, p. I-35, table I-11.

⁸³ *Glycine from The People's Republic of China, Inv. No. 731-TA-718 (Second Review)*, USITC Publication 3810, October 2005, pp. I-20 – I-21.

⁸⁴ *Investigation No. 731-TA-718 (Third Review): Glycine from China—Staff Report*, INV-JJ-079, July 28, 2011, pp. IV-6 – IV-7. ***. This estimate of production of glyphosate from glycine in China was much larger than the reported production capacity from another industry source. ***. *Ibid.*, p. IV-7.

⁸⁵ *GEO's Response to this Notice of Institution*, August 31, 2016, p. 4.

⁸⁶ *Ibid.*, p. 9.

⁸⁷ *Ibid.* p. 10.

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

There have been no antidumping duty, countervailing duty, or safeguard investigations on glycine in any other country.

THE GLOBAL MARKET

Global trade of glycine is tracked under the HTS heading 2922.49, a basket category covering glycine and other amino acids. Table I-7 presents global exports under this heading during 2011-15. In this basket category, China was the largest exporter in every year during 2011-15, with its proportion of total global exports increasing by quantity from 23.0 percent in 2011 to 32.7 percent in 2015.

Table I-7
Glycine: Global exports by major sources, 2011-15

Item	Calendar year				
	2011	2012	2013	2014	2015
Quantity (1,000 pounds)					
China	236,194	262,568	297,349	383,775	400,925
Germany	231,771	240,488	248,295	254,625	282,735
Netherlands	148,550	148,152	160,351	167,994	146,301
United States	150,260	131,572	128,098	147,643	138,987
Belgium	16,875	17,596	16,636	24,252	49,701
All other countries	242,444	247,997	247,623	235,853	206,939
Total global exports	1,026,093	1,048,353	1,098,353	1,214,142	1,225,589
Value (\$1,000)					
China	514,228	582,031	652,929	744,453	719,870
Germany	342,355	271,325	291,008	311,464	277,319
Netherlands	160,074	171,879	171,030	195,109	177,651
United States	217,751	165,779	167,854	202,980	206,723
Belgium	1,654,872	2,355,978	2,956,322	2,250,223	2,957,637
All other countries	3,869,009	4,451,479	4,153,722	3,949,259	4,617,808
Total global exports	6,758,289	7,998,471	8,392,865	7,653,488	8,957,008
Unit value (dollars per pound)					
China	2.18	2.22	2.20	1.94	1.80
Germany	1.48	1.13	1.17	1.22	0.98
Netherlands	1.08	1.16	1.07	1.16	1.21
United States	1.45	1.26	1.31	1.37	1.49
Belgium	98.07	133.89	177.70	92.79	59.51
All other countries	15.96	17.95	16.77	16.74	22.31
Total global exports	6.59	7.63	7.64	6.30	7.31

Note.--Figures may not add to total shown due to rounding.

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS subheading 2922.49, accessed on October 19, 2016.

In addition to exports of the basket category, exports of glycine itself are available for two of the top five sources of U.S. imports identified in Table I-3: India and Thailand. During 2011-15, India's exports of glycine varied between 2.6 million and 4.5 million pounds. During this period, 94.7 percent of India's exports went to the United States. Table I-8 presents exports from India during 2011-15.

Table I-8
Glycine: India's exports by volume, 2011-15

Item	Calendar year				
	2011	2012	2013	2014	2015
Quantity (1,000 pounds)					
United States	3,042	2,531	4,310	4,035	3,143
Other Countries	449	92	144	90	176
Total	3,490	2,623	4,454	4,125	3,318

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS subheading 2922.49.10. Accessed October 5, 2016.

During 2011-15, Thailand's exports of glycine increased from 22,000 to 4.3 million pounds, with 98.6 percent of exports going to the United States. Table I-9 presents exports from Thailand during 2011-15.

Table I-9
Glycine: Thailand's exports by volume (1,000 pounds), 2011-15

Item	Calendar year				
	2011	2012	2013	2014	2015
Quantity (1,000 pounds)					
United States	0	0	0	265	4,285
Other Countries	22	45	0	40	0
Total	22	45	0	304	4,285

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS (11-digit) statistical reporting number 2922.49.90005. Accessed October 5, 2016.

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
81 FR 50462 August 1, 2016	<i>Initiation of Five-Year ("Sunset") Review</i>	https://www.gpo.gov/fdsys/pkg/FR-2016-08-01/pdf/2016-18297.pdf
81 FR 50547 August 1, 2016	<i>Glycine From China; Institution of a Five-Year Review</i>	https://www.gpo.gov/fdsys/pkg/FR-2016-08-01/pdf/2016-17679.pdf

APPENDIX B
COMPANY-SPECIFIC DATA

RESPONSE CHECKLIST FOR U.S. PRODUCER

Item	GEO Specialty Chemicals, Inc.	
	Quantity=1,000 pounds; value=1,000 dollars	
Nature of operation	✓	
Statement of intent to participate	✓	
Statement of likely effects of revoking the order	✓	
U.S. producer list	✓	
U.S. importer/foreign producer list	✓	
List of 3-5 leading purchasers	✓	
List of sources for national/regional prices	?	
Production:		
Quantity		***
Percent of total reported		***
Capacity		***
Commercial shipments:		
Quantity		***
Value		***
Internal consumption:		
Quantity		***
Value		***
Net sales		***
COGS		***
Gross profit or (loss)		***
SG&A expenses		***
Operating income or (loss)		***
Changes in supply/demand	✓	
<p>Note.—The production, capacity, and shipment data presented are for calendar year 2015. The financial data are for fiscal year ended 2015.</p> <p>✓ = response provided; ? = indicated that the information was not known.</p>		

APPENDIX C

SUMMARY DATA COMPILED IN PRIOR INVESTIGATIONS

Table A-1
Glycine: Summary data concerning the U.S. market, 1992-94¹

(Quantity = 1,000 pounds; value = 1,000 dollars; unit values and unit labor costs are *per pound*; period changes = *percent, except where noted*)

Item	Reported data			Period changes		
	1992	1993	1994	1992-94	1992-93	1993-94
U.S. consumption quantity:						
Amount	***	***	***	***	***	***
Producers' share ²	***	***	***	***	***	***
Importers' share: ²						
China	***	***	***	***	***	***
Other sources	***	***	***	***	***	***
Total	***	***	***	***	***	***
U.S. consumption value:						
Amount	***	***	***	***	***	***
Producers' share ²	***	***	***	***	***	***
Importers' share: ²						
China	***	***	***	***	***	***
Other sources	***	***	***	***	***	***
Total	***	***	***	***	***	***
U.S. importers' imports from--						
China:						
Imports quantity	112	905	1,606	(3)	+704.6	+77.6
Imports value	190	1,381	2,216	(3)	+627.4	+60.4
Unit value	\$1.69	\$1.53	\$1.38	-18.3	-9.6	-9.7
Ending inventory quantity	***	252	501	***	***	+98.7
Other sources:						
Imports quantity	61	333	582	+853.0	+444.9	+74.9
Imports value	397	875	1,565	+294.6	+120.5	+79.0
Unit value	\$6.49	\$2.63	\$2.69	-58.6	-59.5	+2.3
All sources:						
Imports quantity	174	1,238	2,189	(3)	+613.1	+76.9
Imports value	587	2,256	3,781	+544.6	+284.5	+67.6
Unit value	\$3.38	\$1.82	\$1.73	-48.9	-46.1	-5.2
U.S. producers'--						
Average capacity quantity	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***
Capacity utilization ²	***	***	***	***	***	***
U.S. shipments:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Export shipments:						
Quantity	***	***	***	***	***	***
Exports/total shipments ²	***	***	***	***	***	***
Value	***	***	***	***	***	***

Table continued on following page.

Table A-1--Continued
 Glycine: Summary data concerning the U.S. market, 1992-94¹

(Quantity=1,000 pounds; value=1,000 dollars; unit values and unit labor costs are *per pound*; period changes=*percent, except where noted*)

Item	Reported data			Period changes		
	1992	1993	1994	1992-94	1992-93	1993-94
U.S. producers'--						
Export shipments:						
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
Inventory/total shipments ³	***	***	***	***	***	***
Production workers	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***
Total compensation (\$1,000)	***	***	***	***	***	***
Hourly total compensation	***	***	***	***	***	***
Productivity (lbs./hour)	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***
Net sales--						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***
Gross profit (loss)	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***
COGS/sales ²	***	***	***	***	***	***
Operating income (loss)/sales ²	***	***	***	***	***	***

¹ Chatterm's data are for fiscal years ending November 30.

² "Reported data" are in percent and "period changes" are in percentage points.

³ An increase of 1,000 percent or more.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated from the unrounded figures, using data of firms supplying both numerator and denominator information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Figure A-1
 Glycine: Salient data for the U.S. market, 1992-94

* * * * *

Table I-1

Glycine: Comparative data from the original investigation, first review, second review and current review

* * * * *

Table C-1
Glycine: Summary data concerning the U.S. market, 2005-10

(Quantity=1,000 pounds, value=1,000 dollars, unit values, unit labor costs, and unit expenses are per pound; period changes=percent, except where noted)

Item	Reported data						Period changes					
	2005	2006	2007	2008	2009	2010	2005-10	2005-06	2006-07	2007-08	2008-09	2009-10
U.S. consumption quantity:												
Amount	***	***	***	***	***	***	***	***	***	***	***	***
Producers' share (1)	***	***	***	***	***	***	***	***	***	***	***	***
Importers' share (1):												
China	***	***	***	***	***	***	***	***	***	***	***	***
Nonsubject countries:												
India	***	***	***	***	***	***	***	***	***	***	***	***
Japan	***	***	***	***	***	***	***	***	***	***	***	***
Korea	***	***	***	***	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***	***	***	***	***
Total imports	***	***	***	***	***	***	***	***	***	***	***	***
U.S. consumption value:												
Amount	***	***	***	***	***	***	***	***	***	***	***	***
Producers' share (1)	***	***	***	***	***	***	***	***	***	***	***	***
Importers' share (1):												
China	***	***	***	***	***	***	***	***	***	***	***	***
Nonsubject countries:												
India	***	***	***	***	***	***	***	***	***	***	***	***
Japan	***	***	***	***	***	***	***	***	***	***	***	***
Korea	***	***	***	***	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***	***	***	***	***
Total imports	***	***	***	***	***	***	***	***	***	***	***	***
U.S. imports from:												
China:												
Quantity	1,915	2,177	2,184	3,630	126	1,190	-37.9	13.7	0.3	66.2	-96.5	846.9
Value	2,397	2,598	2,866	11,535	222	1,724	-28.1	8.4	10.3	302.5	-98.1	675.9
Unit value	\$1.25	\$1.19	\$1.31	\$3.18	\$1.77	\$1.45	15.7	-4.7	9.9	142.2	-44.3	-18.1
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***
Nonsubject countries:												
India:												
Quantity	2,030	2,233	828	2,588	2,944	4,048	99.4	10.0	-62.9	212.5	13.8	37.5
Value	2,798	2,882	1,119	7,124	6,529	8,236	194.4	3.0	-61.2	536.9	-8.4	26.1
Unit value	\$1.38	\$1.29	\$1.35	\$2.75	\$2.22	\$2.03	47.6	-6.3	4.7	103.8	-19.4	-8.3
Japan:												
Quantity	2,047	2,610	3,726	2,596	2,628	3,382	65.2	27.5	42.8	-30.3	1.2	28.7
Value	2,808	3,310	4,438	9,494	6,865	8,402	199.2	17.9	34.1	113.9	-27.7	22.4
Unit value	\$1.37	\$1.27	\$1.19	\$3.66	\$2.61	\$2.48	81.1	-7.5	-6.1	207.0	-28.6	-4.9
Korea:												
Quantity	992	1,124	444	0	0	0	-100.0	13.3	-60.5	-100.0	(2)	(2)
Value	1,278	1,300	570	0	0	0	-100.0	1.7	-56.1	-100.0	(2)	(2)
Unit value	\$1.29	\$1.16	\$1.28	(2)	(2)	(2)	(2)	***	-10.3	11.0	-100.0	(2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***
All other sources:												
Quantity	359	392	225	807	215	415	15.5	9.3	-42.5	257.9	-73.3	92.8
Value	837	936	558	2,581	449	971	16.0	11.9	-40.4	362.7	-82.6	116.1
Unit value	7,343	8,537	7,408	9,621	5,913	9,034	23.0	16.3	-13.2	29.9	-38.5	52.8
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***
All sources:												
Quantity	7,343	8,537	7,408	9,621	5,913	9,034	23.0	16.3	-13.2	29.9	-38.5	52.8
Value	10,118	11,026	9,550	30,733	14,066	19,333	91.1	9.0	-13.4	221.8	-54.2	37.4
Unit value	\$1.38	\$1.29	\$1.29	\$3.19	\$2.38	\$2.14	55.3	-6.3	-0.2	147.8	-25.5	-10.0
Ending inventory quantity	683	714	209	236	120	211	-69.1	4.5	-70.7	12.9	-49.2	75.8

Table C--1--Continued
Glycine: Summary data concerning the U.S. market, 2005-10

(Quantity=1,000 pounds, value=1,000 dollars, unit values, unit labor costs, and unit expenses are per pound; period changes=percent, except where noted)

Item	Reported data						Period changes					
	2005	2006	2007	2008	2009	2010	2005-10	2005-06	2006-07	2007-08	2008-09	2009-10
U.S. producers:												
Average capacity quantity	***	***	***	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***	***	***	***
Capacity utilization (1)	***	***	***	***	***	***	***	***	***	***	***	***
U.S. shipments:												
Quantity	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***
Export shipments:												
Quantity	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***
Inventories/total shipments (1)	***	***	***	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***	***	***	***
Wages paid (\$1,000s)	***	***	***	***	***	***	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***	***	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***	***	***	***
Net sales:												
Quantity	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***	***	***	***
COGS/sales (1)	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)/ sales (1)	***	***	***	***	***	***	***	***	***	***	***	***

(1) "Reported data" are in percent and "period changes" are in percentage points.

(2) Not applicable or not meaningful.

Note.--Financial data are reported on a fiscal year basis and may not necessarily be comparable to data reported on a calendar year basis. Because of rounding, figures may not add to the totals shown. Unit values and shares are calculated from the unrounded figures.

Source: Compiled from data submitted in response to Commission questionnaires and from official Commerce statistics.

APPENDIX D
PURCHASER QUESTIONNAIRE RESPONSES

As part of their response to the notice of institution, interested parties were asked to provide a list of three to five leading purchasers in the U.S. market for the domestic like product. A response was received from domestic interested parties and it named the following three firms as the top purchasers of glycine: ***. Purchaser questionnaires were sent to these three firms and two firms (***) provided responses which are presented below.

1. a.) Have any changes occurred in technology; production methods; or development efforts to produce glycine that affected the availability of glycine in the U.S. market or in the market for glycine in China since 2011?

b.) Do you anticipate any changes in technology; production methods; or development efforts to produce glycine that will affect the availability of glycine in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	No.	No.
***	No.	No.

2. a.) Have any changes occurred in the ability to increase production of glycine (including the shift of production facilities used for other products and the use, cost, or availability of major inputs into production) that affected the availability of glycine in the U.S. market or in the market for glycine in China since 2011?

b.) Do you anticipate any changes in the ability to increase production (including the shift of production facilities used for other products and the use, cost, or availability of major inputs into production) that will affect the availability of glycine in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	No.	No.
***	No.	No.

3. a.) Have any changes occurred in factors related to the ability to shift supply of glycine among different national markets (including barriers to importation in foreign markets or changes in market demand abroad) that affected the availability of glycine in the U.S. market or in the market for glycine in China since 2011?

b.) Do you anticipate any changes in factors related to the ability to shift supply among different national markets (including barriers to importation in foreign markets or changes in market demand abroad) that will affect the availability of glycine in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	No.	No.
***	No.	No.

4. a.) Have there been any changes in the end uses and applications of glycine in the U.S. market or in the market for glycine in China since 2011?

b.) Do you anticipate any changes in the end uses and applications of glycine in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	No.	No.
***	Usage in nutritional supplements has reduced significantly since 2014.	No.

5. a.) Have there been any changes in the existence and availability of substitute products for glycine in the U.S. market or in the market for glycine in China since 2011?

b.) Do you anticipate any changes in the existence and availability of substitute products for glycine in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	No.	No.
***	No.	No.

6. a.) Have there been any changes in the level of competition between glycine produced in the United States, glycine produced in China, and such merchandise from other countries in the U.S. market or in the market for glycine in China since 2011?

b.) Do you anticipate any changes in the level of competition between glycine produced in the United States, glycine produced in China, and such merchandise from other countries in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	Competitive product is now readily available from Thailand.	No.
***	Competition has increased significantly due to Indian material and/or Chinese material being imported through India since ~2012. There is also tough competition for material out of Cambodia, which is believed to be produced in China and routed through Cambodia to avoid the higher duty rate. There are also rumors of Chinese glycine being imported as lysine or other compounds, and getting relabeled as glycine in the US. All of this has contributed to drastic erosion of the US market price of glycine.	Chinese suppliers are expected to continue to look for ways in order to import without the higher duty rate.

7. a.) Have there been any changes in the business cycle for glycine in the U.S. market or in the market for glycine in China since 2011?
- b.) Do you anticipate any changes in the business cycle for glycine in the U.S. market or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Changes that have occurred	Anticipated changes
***	No.	No.
***	No.	No.