

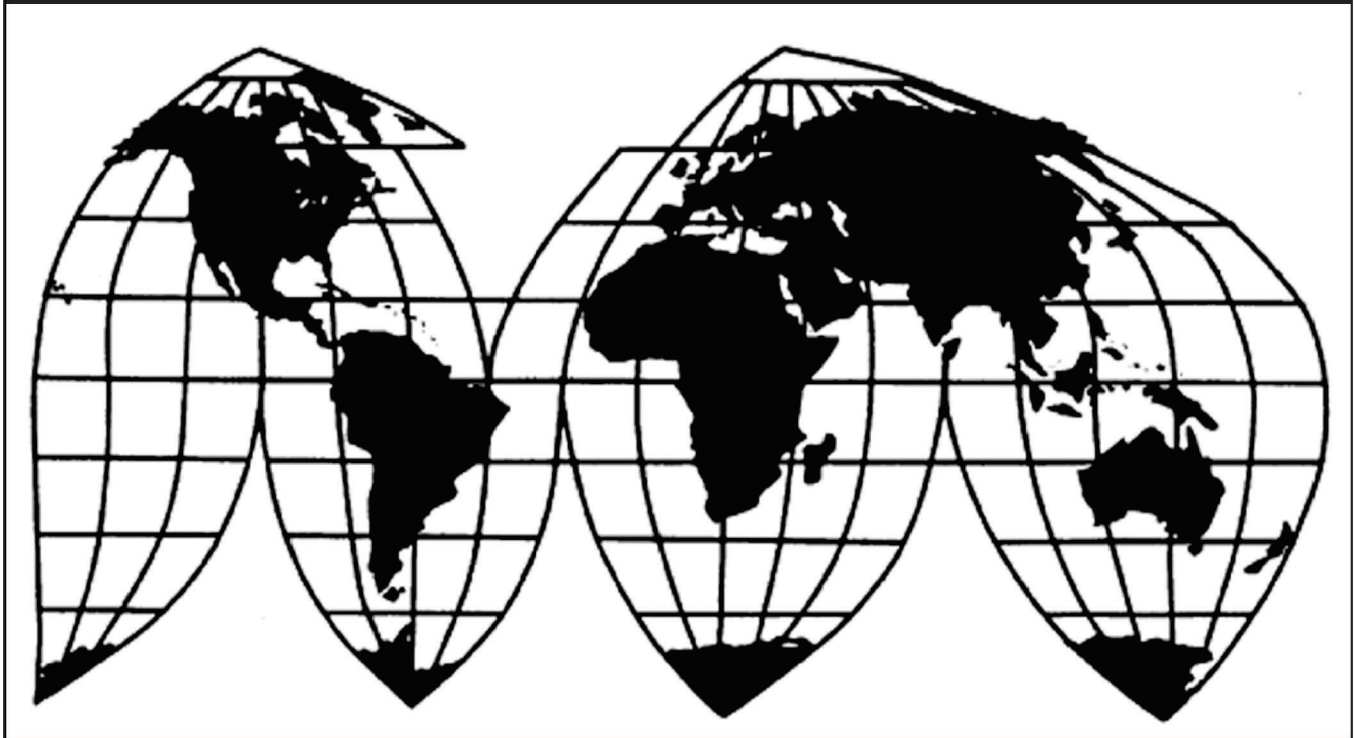
Glycine from China

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

Publication 5347

August 2022

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 (Fifth 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.²

BACKGROUND

The Commission instituted this review on January 3, 2022 (87 FR 112) and determined on April 8, 2022 that it would conduct an expedited review (87 FR 44422, July 26, 2022).

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

² Commissioner Amy A. Karpel not participating.

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

Original Investigation and Prior Reviews. The Commission instituted the original investigation on July 1, 1994, based on a petition filed on behalf of Hampshire Chemical Corp. and Chattem, Inc. (“Chattem”) alleging that an industry in the United States was materially injured or threatened with material injury by reason of less than fair value imports of glycine from China.¹ On March 14, 1995, the Commission determined that an industry in the United States was threatened with material injury by reason of imports of glycine from China that the U.S. Department of Commerce (“Commerce”) determined to be sold in the United States at less than fair value.² Commerce issued an antidumping duty order on glycine from China on March 29, 1995.³

The Commission instituted the first five-year review on February 3, 2000.⁴ On June 30, 2000, after conducting an expedited review,⁵ the Commission determined 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.⁶ Commerce issued a notice of continuation of the order on July 25, 2000.⁷

¹ *Glycine From the People’s Republic of China*, 59 Fed. Reg. 35137 (July 8, 1994).

² *Glycine from The People’s Republic of China*, Inv. No. 731-TA-718 (Final), USITC Pub. 2863 (Mar. 1995) (“*Original Determination*”) at I-3; *Glycine From the People’s Republic of China*, 60 Fed. Reg. 14962 (Mar. 21, 1995). Commissioners Crawford and Bragg determined that an industry in the United States was materially injured by reason of imports of glycine from China. *Original Determination*, USITC Pub. 2863 at I-3, n.3.

³ *Antidumping Duty Order: Glycine From the People’s Republic of China*, 60 Fed. Reg. 16115 (Mar. 29, 1995).

⁴ *Glycine From China*, Inv. No. 731-TA-718 (Review), USITC Pub. 3315 (June 2000) (“*First Review Determination*”) at 1, 3.

⁵ *Glycine From China*, 65 Fed. Reg. 31145 (May 16, 2000).

⁶ *First Review Determination*, USITC Pub. 3315 at 1, 3; *Glycine From China*, 65 Fed. Reg. 43037 (July 12, 2000).

⁷ *Continuation of Antidumping Duty Order: Glycine from the People’s Republic of China*, 65 Fed. Reg. 45752 (July 25, 2000).

The Commission instituted the second review on June 1, 2005.⁸ On October 31, 2005, after conducting an expedited review,⁹ the Commission determined 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.¹⁰ Commerce issued a notice of continuation of the order on November 15, 2005.¹¹

The Commission instituted the third review on October 7, 2010.¹² On August 30, 2011, after conducting a full review,¹³ the Commission determined 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.¹⁴ Commerce issued a notice of continuation of the order on September 19, 2011.¹⁵

The Commission instituted the fourth review on August 1, 2016.¹⁶ On January 31, 2017, after conducting an expedited review,¹⁷ the Commission determined 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.¹⁸ Commerce issued a notice of continuation of the order on February 15, 2017.¹⁹

⁸ *Glycine From China*, Inv. No. 731-TA-718 (Second Review), USITC Pub. 3810 (Oct. 2005) (“*Second Review Determination*”) at 1, 3; *Glycine From China*, 70 Fed. Reg. 31534 (June 1, 2005).

⁹ *Glycine From China*, 70 Fed. Reg. 55625 (Sept. 22, 2005).

¹⁰ *Second Review Determination*, USITC Pub. 3810 at 1, 3; *Glycine From China*, 70 Fed. Reg. 66850 (Nov. 3, 2005).

¹¹ *Glycine from the People's Republic of China; Continuation of Antidumping Duty Order*, 70 Fed. Reg. 69316 (Nov. 15, 2005).

¹² *Glycine From China*, Inv. No. 731-TA-718 (Third Review), USITC Pub. 4255 (Aug. 2011) (“*Third Review Determination*”) at 1, 3; *Glycine From China*, 75 Fed. Reg. 62141 (Oct 7, 2010).

¹³ *Glycine From China*, 76 Fed. Reg. 8771 (Feb. 15, 2011).

¹⁴ *Third Review Determination*, USITC Pub. 4255 at 1, 3; *Glycine From China*, 76 Fed. Reg. 55109 (Sept. 6, 2011).

¹⁵ *Glycine from the People's Republic of China; Continuation of Antidumping Duty Order*, 76 Fed. Reg. 57951 (Sept. 19, 2011).

¹⁶ *Glycine From China*, Inv. No. 731-TA-718 (Fourth Review), USITC Pub. 4667 (Feb. 2017) (“*Fourth Review Determination*”) at 1, 3; *Glycine From China; Institution of a Five-Year Review*, 70 Fed. Reg. 31534 (Oct. 1, 2016).

¹⁷ *Glycine From China; Scheduling of an Expedited Five-Year Review*, 81 Fed. Reg. 87589 (December 5, 2016).

¹⁸ *Fourth Review Determination*, USITC Pub. 4667 at 1, 3; *Glycine From China; Determination*, 82 Fed. Reg. 9223 (Feb. 3, 2017).

¹⁹ *Glycine From the People's Republic of China: Continuation of Antidumping Duty Order*, 82 FR 10745 (Feb. 15, 2017).

Current Review. The Commission instituted this fifth five-year review on January 3, 2022.²⁰ The Commission received a single response to its notice of institution, filed by GEO Specialty Chemicals, Inc. (“GEO”), a domestic producer of glycine.²¹ The Commission did not receive a response from any respondent interested party. On April 8, 2022, the Commission determined that the domestic interested party group response to the notice of institution was adequate and that the respondent interested party group response was inadequate. Finding that no other circumstances warranted conducting a full review, the Commission determined to conduct an expedited review of the order.²² On July 28, 2022, GEO filed comments with the Commission pursuant to 19 C.F.R. § 207.62(d).²³

U.S. industry data are based on the data submitted in response to the notice of institution by GEO, which estimated that it accounted for approximately 79 percent of domestic production of glycine in 2021.²⁴ U.S. import data and related information are based on Commerce’s official import statistics.²⁵ No foreign producer or exporter of glycine participated in this review. Foreign industry data and related information are based on information provided by GEO in its response to the notice of institution and on publicly available information.²⁶ Four U.S. purchasers of glycine responded to the Commission’s adequacy phase questionnaire.²⁷

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.”²⁸ The Tariff Act defines “domestic like product” as “a product which is like, or in the absence of like, most similar in characteristics and

²⁰ *Glycine From China; Institution of a Five-Year Review*, 87 Fed. Reg. 112 (Jan. 3, 2022).

²¹ GEO’s Confidential Response to the Notice of Institution, EDIS Doc. 761784 (Jan. 31, 2022) (“Response”) at 1; GEO’s Confidential Supplemental Response to the Notice of Institution, EDIS Doc. 762780 (Feb. 8, 2022) at 1.

²² Explanation of Commission Determination on Adequacy, EDIS Doc. 768444 (Apr. 18, 2022); *Glycine From China; Scheduling of Expedited Five-Year Review*, 87 Fed. Reg. 44422 (July 26, 2022).

²³ GEO’s Confidential Final Comments, EDIS Doc. 776413 (July 28, 2022) (“Final Comments”).

²⁴ Confidential Report, Memorandum INV-UU-027 (“CR”) at Table I-2 (Mar. 29, 2022); Public Report (“PR”) at Table I-2.

²⁵ CR/PR at Table I-5.

²⁶ See CR/PR at Tables I-7–8.

²⁷ CR/PR at D-3.

²⁸ 19 U.S.C. § 1677(4)(A).

uses with, the article subject to an investigation under this subtitle.”²⁹ 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.³⁰

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

{G}lycine, which is 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 proceeding includes glycine of all purity levels.³¹

Glycine is a nonessential amino acid with the formula $\text{NH}_2\text{CH}_2\text{COOH}$; it is produced naturally by humans and other organisms as a building block for proteins.³² Commercial production of glycine uses traditional chemical synthesis.³³ Most commonly sold in its dry form as a white, free-flowing powder, glycine is odorless and sweet to the taste.³⁴

Glycine is typically sold in two main grades: United States Pharmacopeial (“USP”) grade and technical grade.³⁵ USP-grade glycine, which is required for use in products intended for human or animal consumption, has fewer impurities than technical-grade glycine and is typically used as an additive to sweeten foods or beverages, to mask bitter components of medicaments and personal care products, and to enhance the flavor of animal feed.³⁶ It can

²⁹ 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. 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).

³⁰ *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).

³¹ *Glycine From the People’s Republic of China: Final Results of the Expedited Sunset Review of the Antidumping Duty Order*, 87 Fed. Reg. 25446 (Apr. 29, 2022); Issues and Decision Memorandum for the Expedited Sunset Review of the Antidumping Duty Order on Glycine from the People’s Republic of China (Apr. 25, 2022) at 2.

³² CR/PR at I-7.

³³ CR/PR at I-7.

³⁴ CR/PR at I-7.

³⁵ CR/PR at I-7–8.

³⁶ CR/PR at I-8.

also be used in pharmaceutical products to promote gastric absorption of certain drugs and to treat diarrhea in humans and animals.³⁷ Additionally, USP-grade glycine is used as a buffering agent in certain products such as antacids, analgesics, antiperspirants, or cosmetic products to maintain a stable pH or to reduce acidity.³⁸ Technical-grade glycine is used in industrial applications such as metal finishing or rubber adhesion.³⁹

In the original investigation, the Commission defined a single domestic like product, encompassing all grades of glycine, coextensive with the scope.⁴⁰ Considering its traditional six factors, the Commission found in relevant part: (1) that all glycine had the same chemical structure regardless of its form; (2) that there was significant interchangeability between glycine of differing purity levels; (3) that the channels of distribution were similar for all domestically produced glycine; (4) that producers and end users perceived glycine to be a single product regardless of its grade; (5) and that common production processes, facilities, and employees were used to produce the different grades of glycine.⁴¹

In the expedited first and second reviews, the full third review, and the expedited fourth review, no party objected to the domestic like product definition from the original investigation, and the Commission found that none of the additional information collected suggested a reason to depart from its original definition of the domestic like product.⁴² Accordingly, in all four prior reviews, the Commission adopted the domestic like product definition from the original investigation and defined a single domestic like product consisting of all glycine, coextensive with the scope.⁴³

In this fifth review, GEO has raised no objection to the Commission's definition of the domestic like product from the prior proceedings. Moreover, the record of this expedited review contains no new information suggesting that the characteristics or uses of domestically

³⁷ CR/PR at I-8. Some customers require glycine to be produced to higher purity standards than USP-grade glycine and refer to the higher-purity product as "pharmaceutical grade" glycine. CR/PR at I-8.

³⁸ CR/PR at I-8.

³⁹ CR/PR at I-8.

⁴⁰ *Original Determination*, USITC Pub. 2863 at I-6.

⁴¹ *Original Determination*, USITC Pub. 2863 at I-6.

⁴² *First Review Determination*, USITC Pub. 3315 at 4; *Second Review Determination*, USITC Pub. 3810 at 4; *Third Review Determination*, USITC Pub. 4255 at 5; *Fourth Review Determination*, USITC Pub. 4667 at 6.

⁴³ *First Review Determination*, USITC Pub. 3315 at 4; *Second Review Determination*, USITC Pub. 3810 at 4; *Third Review Determination*, USITC Pub. 4255 at 5; *Fourth Review Determination*, USITC Pub. 4667 at 6.

produced glycine have changed since the original investigation or prior reviews.⁴⁴ Accordingly, we again define a single domestic like product consisting of all glycine, 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."⁴⁵ In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

In the original investigation and prior reviews, the Commission defined the domestic industry as all domestic producers of glycine.⁴⁶ There were no related party issues in any of the prior proceedings.⁴⁷

In the current review, GEO raises no objection to the definition of the domestic industry the Commission utilized in the prior proceedings. There are no related party issues in this review.⁴⁸ Accordingly, consistent with our definition of the domestic like product, we again define the domestic industry as consisting of all U.S. producers of glycine.

⁴⁴ See generally CR/PR at I-6-9.

⁴⁵ 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.

⁴⁶ *Original Determination*, USITC Pub. 2863 at I-6; *First Review Determination*, USITC Pub. 3315 at 5; *Second Review Determination*, USITC Pub. 3810 at 5; *Third Review Determination*, USITC Pub. 4255 at 6; *Fourth Review Determination*, USITC Pub. 4667 at 6.

⁴⁷ *Original Determination*, USITC Pub. 2863 at I-6; *First Review Determination*, USITC Pub. 3315 at 5, n.17; *Second Review Determination*, USITC Pub. 3810 at 5, n.19; *Third Review Determination*, USITC Pub. 4255 at 6, n.29; *Fourth Review Determination*, USITC Pub. 4667 at 6.

⁴⁸ Response at 14.

II. 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.”⁴⁹ 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.”⁵⁰ Thus, the likelihood standard is prospective in nature.⁵¹ 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.⁵²

⁴⁹ 19 U.S.C. § 1675a(a).

⁵⁰ 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.

⁵¹ 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.

⁵² 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. App. 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’”).

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.”⁵³ According to the SAA, a “‘reasonably foreseeable time’ will vary from case-to-case, but normally will exceed the ‘imminent’ timeframe applicable in a threat of injury analysis in original investigations.”⁵⁴

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.”⁵⁵ 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).⁵⁶ 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.⁵⁷

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.⁵⁸ 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;

⁵³ 19 U.S.C. § 1675a(a)(5).

⁵⁴ 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.*

⁵⁵ 19 U.S.C. § 1675a(a)(1).

⁵⁶ 19 U.S.C. § 1675a(a)(1). Commerce has not made any duty absorption findings in its expedited sunset review of the order. *See Glycine From the People's Republic of China: Final Results of the Expedited Sunset Review of the Antidumping Duty Order*, 87 Fed. Reg. 25446 (Apr. 29, 2022) and Issues and Decision Memorandum for the Expedited Sunset Review of the Antidumping Duty Order on Glycine from the People’s Republic of China (Apr. 25, 2022).

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

⁵⁸ 19 U.S.C. § 1675a(a)(2).

(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.⁵⁹

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 United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.⁶⁰

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.⁶¹ 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 order under review and whether the industry is vulnerable to material injury upon revocation.⁶²

⁵⁹ 19 U.S.C. § 1675a(a)(2)(A–D).

⁶⁰ 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.

⁶¹ 19 U.S.C. § 1675a(a)(4).

⁶² 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.

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 industry in the United States during the current period of review. Accordingly, for our determination, we rely as appropriate on the facts available from the original investigation and prior reviews, and the limited new information on the record in this fifth review.

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”⁶³ The following conditions of competition inform our determination.

1. Original Investigation

Demand. 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.⁶⁴ Additionally, because glycine accounted for a relatively small cost share of the products in which it is used and because there was a lack of substitute products, the Commission found that changes in glycine prices were unlikely to affect the quantity demanded.⁶⁵ In many of the downstream industries which incorporated glycine into final products, the Commission observed a relatively small number of customers were responsible for a large portion of glycine consumption.⁶⁶ Apparent U.S. consumption of glycine increased throughout the period of investigation (“POI”).⁶⁷

Supply. The Commission found that there were two domestic producers of glycine operating in the United States and that the domestic industry’s share of apparent U.S. consumption declined throughout the POI.⁶⁸ It observed that the subject imports’ share of apparent U.S. consumption increased each year of the POI.⁶⁹

⁶³ 19 U.S.C. § 1675a(a)(4).

⁶⁴ *Original Determination*, USITC Pub. 2863 at I-6–7.

⁶⁵ *Original Determination*, USITC Pub. 2863 at I-7.

⁶⁶ *Original Determination*, USITC Pub. 2863 at I-7.

⁶⁷ *Original Determination*, USITC Pub. 2863 at I-7.

⁶⁸ *Original Determination*, USITC Pub. 2863 at I-6, n.14, I-7.

⁶⁹ *Original Determination*, USITC Pub. 2863 at I-10, n.54.

Substitutability and Other Conditions. The Commission found that domestically produced glycine and subject imports were largely substitutable and were employed in the same range of end uses.⁷⁰ It found that because a relatively small number of customers were responsible for a large portion of glycine consumption, individual customers had the ability to demand and obtain price concessions from glycine producers.⁷¹

2. The Prior Five-Year Reviews

Demand. In the expedited first and second reviews, the full third review, and expedited fourth review, the Commission found that the conditions of competition affecting U.S. demand for glycine observed during the original investigation remained unchanged.⁷² The Commission also found that apparent U.S. consumption of glycine had increased with each successive review. In the expedited first review, the Commission found that apparent U.S. consumption of glycine was higher in 1999 than in any year during the original investigation.⁷³ In the expedited second review, it found that apparent U.S. consumption had increased since the first review and was substantially higher than during the original investigation.⁷⁴ In the full third review, the Commission observed that apparent U.S. consumption increased irregularly from 2005 to 2008, before decreasing irregularly through 2010.⁷⁵ In the expedited fourth review, the Commission found that apparent U.S. consumption was higher in 2015 than in the original investigation and any prior review.⁷⁶

Supply. In the expedited first review, the Commission found that although domestic producers continued to supply a dominant share of glycine to the U.S. market, the volume of nonsubject imports had increased and captured a larger share of the market since the original investigation.⁷⁷ Similarly, in the expedited second review, the Commission found that, while

⁷⁰ *Original Determination*, USITC Pub. 2863 at I-11.

⁷¹ *Original Determination*, USITC Pub. 2863 at I-7.

⁷² *First Review Determination*, USITC Pub. 3315 at 7; *Second Review Determination*, USITC Pub. 3810 at 8; *Third Review Determination*, USITC Pub. 4255 at 10; *Fourth Review Determination*, USITC Pub. 4667 at 11. In the full third review, the Commission found that 61.7 percent of glycine sales were for use as an intermediate material in products intended for human consumption while 29.4 percent were for use as an additive to personal care and cosmetic products. *Third Review Determination*, USITC Pub. 4255 at 10.

⁷³ *First Review Determination*, USITC Pub. 3315 at 7.

⁷⁴ *Second Review Determination*, USITC Pub. 3810 at 8.

⁷⁵ *Third Review Determination*, USITC Pub. 4255 at 10.

⁷⁶ *Fourth Review Determination*, USITC Pub. 4667 at 11.

⁷⁷ *First Review Determination*, USITC Pub. 3315 at 7–8.

the domestic industry remained the dominant supplier of glycine to the U.S. market, its market share had declined substantially from the original investigation and first review.⁷⁸ It found that this decline was largely due to an increase in the market share held by nonsubject imports.⁷⁹

In the full third review, the Commission found that the domestic industry consisted of two domestic producers: Chattem and GEO.⁸⁰ It observed that the domestic industry's market share declined irregularly over the period of review while the market share for subject imports increased from 2005 to 2008 before declining through 2010.⁸¹ Also, it observed that nonsubject imports' market share increased irregularly over the period of review.⁸² The Commission declined to speculate on whether nonsubject imports from India were being transshipped from China, as the alleged transshipment scheme was subject to an ongoing investigation by Commerce.⁸³

In the expedited fourth review, the Commission found that Chattem and GEO remained the sole domestic producers of glycine and that the domestic industry held a lower market share in 2015 than during any of the prior proceedings.⁸⁴ Similarly, the Commission observed that subject imports' market share was lower in 2015 than in any year for which data were collected since the original investigation.⁸⁵ It found, conversely, that the market share held by nonsubject imports was higher in 2015 than in any prior year for which data were collected.⁸⁶

Substitutability and Other Conditions. In the expedited first review, the Commission found that individual U.S. purchasers of glycine maintained the ability to obtain price concessions from producers.⁸⁷ It also found that there was no indication that the level of substitutability between domestically produced glycine and subject imports had changed since the original investigation, when it found domestic and subject glycine to be largely

⁷⁸ *Second Review Determination*, USITC Pub. 3810 at 8.

⁷⁹ *Second Review Determination*, USITC Pub. 3810 at 8. The domestic parties alleged that the increase in nonsubject import volume was due to transshipments of subject imports to South Korea. *Id.* at 8–9, n.43.

⁸⁰ *Third Review Determination*, USITC Pub. 4255 at 10. GEO had purchased a production facility from Hampshire Chemical Corporation in November 2005. *Id.* at III-3, n.8.

⁸¹ *Third Review Determination*, USITC Pub. 4255 at 10–11.

⁸² *Third Review Determination*, USITC Pub. 4255 at 11.

⁸³ *Third Review Determination*, USITC Pub. 4255 at 11.

⁸⁴ *Fourth Review Determination*, USITC Pub. 4667 at 11. The Commission noted that the market share data in 2015 were based on data from one domestic producer, GEO. *Id.* at 11, n.67.

⁸⁵ *Fourth Review Determination*, USITC Pub. 4667 at 11.

⁸⁶ *Fourth Review Determination*, USITC Pub. 4667 at 11.

⁸⁷ *First Review Determination*, USITC Pub. 3315 at 7.

substitutable.⁸⁸ In the expedited second review, full third review, and expedited fourth review, the Commission found that these conditions of competition remained unchanged.⁸⁹ In particular, in the full third review and expedited fourth review, the Commission found that there was a moderately high degree of substitutability between domestically produced glycine and subject imports and that price was an important factor in purchasing decisions.⁹⁰

3. The Current Five-Year Review

Demand. There is no information in the record of this review of any changes in the drivers of glycine demand from those that the Commission found in the prior proceedings.⁹¹ Apparent U.S. consumption of glycine was approximately *** pounds in 2021, which is higher than in the final year of the original investigation and the first three reviews but lower than in the final year of the fourth review.⁹²

One responding U.S. purchaser, *** reported that ***.⁹³ Two responding U.S. purchasers, ***, reported ***.⁹⁴

Supply. In the current review, GEO identified itself and Chattem as the only two domestic glycine producers, as in the third and fourth reviews.⁹⁵ The domestic industry was the second largest source of supply in the U.S. market, accounting for *** percent of apparent U.S. consumption in 2021, which was lower than the industry's share of apparent U.S. consumption in the final years of the periods examined in the original investigation and each prior review.⁹⁶

⁸⁸ *First Review Determination*, USITC Pub. 3315 at 10.

⁸⁹ *Second Review Determination*, USITC Pub. 3810 at 8; *Third Review Determination*, USITC Pub. 4255 at 10; *Fourth Review Determination*, USITC Pub. 4667 at 11.

⁹⁰ *Third Review Determination*, USITC Pub. 4255 at 14; *Fourth Review Determination*, USITC Pub. 4667 at 11–12.

⁹¹ GEO did not identify any changes in the conditions of competition affecting U.S. demand for glycine. See Response at 19–20. *** purchasers that responded to the Commission's questionnaire *** in the end uses or applications for glycine. CR/PR at D-3–7.

⁹² CR/PR at Table I-6. Apparent U.S. consumption of glycine was *** pounds in 1994, *** pounds in 1999, *** pounds in 2004, *** pounds in 2010, and *** pounds in 2015. *Id.*

⁹³ CR/PR at D-3.

⁹⁴ CR/PR at D-6.

⁹⁵ Response at 1; CR/PR at I-11. GEO was purchased by CPS Performance Materials, a unit of Arsenal Capital Partners (a private equity firm) in September 2019. CR/PR at I-11.

⁹⁶ CR/PR at Table I-6. The domestic industry's share of apparent U.S. consumption was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. *Id.* We recognize, however, that the domestic industry's share of apparent U.S. consumption for 1994, 1999, 2004, and 2010 was based on data for two producers accounting for 100 percent of

GEO highlights that it continued to invest in the maintenance and growth of its glycine plant during the period of review, noting that it is *** and ***.⁹⁷

Subject imports, the smallest source of supply in the U.S. market, accounted for *** percent of apparent U.S. consumption in 2021, which was higher than in the final years of the periods examined in the first and fourth reviews but lower than in the final years of the periods examined in the original investigation and second and third reviews.⁹⁸

Nonsubject imports were the largest source of supply for the U.S. glycine market in 2021, accounting for *** percent of apparent U.S. consumption that year, which was higher than in the final years of the periods examined in the original investigation and prior reviews.⁹⁹ In 2021, India, Japan, and Indonesia were the largest sources of nonsubject imports.¹⁰⁰

*** U.S. purchasers responding to the adequacy phase questionnaire, ***, reported ***.¹⁰¹ All four responding purchasers, including ***, expect ***.¹⁰²

Substitutability and Other Conditions. In this review, we again find a moderately high degree of substitutability between the domestic like product and subject imports, and that price is an important factor in purchasing decisions. There is no new information on the record indicating that the substitutability between the domestic like product and subject imports or the importance of price has changed since the prior reviews.¹⁰³ Moreover, according to GEO, a small number of U.S. purchasers have maintained their significant bargaining power and their associated ability to extract price concessions from glycine suppliers.¹⁰⁴

Determinations by Commerce and U.S. Customs and Border Protection (“CBP”) indicate that attempts to circumvent the antidumping duty order have persisted since 2012; CBP also

domestic glycine production, whereas the domestic industry’s market share for 2015 and 2021 was based on data for only one producer, GEO. See CR/PR at Table I-6, note; see also *Fourth Review Determination*, USITC Pub. 4667 at 11, n.67. *** reportedly accounted for an estimated *** percent of domestic glycine production in 2015 and approximately 79.0 percent of domestic production of glycine in 2021. CR/PR at Table I-2.

⁹⁷ Response at 19.

⁹⁸ CR/PR at Table I-6. The share of apparent U.S. consumption held by subject imports was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. *Id.*

⁹⁹ CR/PR at Table I-6. The share of apparent U.S. consumption held by nonsubject imports was *** percent in 1994, *** percent in 1999, *** percent in 2004, *** percent in 2010, and *** percent in 2015. *Id.*

¹⁰⁰ CR/PR at Table I-5.

¹⁰¹ CR/PR at D-3–5.

¹⁰² CR/PR at D-6–7.

¹⁰³ Response at 12.

¹⁰⁴ Response at 12–13.

determined that multiple importers had evaded the order through circumvention during the current period of review.¹⁰⁵

Effective September 24, 2018, glycine imported from China became subject to a 10 percent *ad valorem* duty under Section 301 of the Trade Act of 1974 (“Section 301 tariffs”) (19 U.S.C. § 2411).¹⁰⁶ Effective May 10, 2019, the duty rate applicable to these subject imports increased to 25 percent *ad valorem*.¹⁰⁷

C. Likely Volume of Subject Imports

1. The Original Investigation and Prior Five-Year Reviews

Original Investigation. In the original investigation, the Commission found that increases in the production capacity of the glycine industry in China outpaced increases in its production, resulting in substantial excess production capacity.¹⁰⁸ It found that greater volumes of subject imports would likely be directed to the U.S. market, especially given the substantial increase in subject import volume and market share observed over the POI, and because the U.S. market for glycine was the largest in the world.¹⁰⁹ Consequently, it found that the market penetration of increasing volumes of subject imports would likely increase to injurious levels in the imminent future.¹¹⁰

First Review. In the expedited first review, the Commission found that the imposition of the order had reduced the presence of subject imports in the U.S. market significantly.¹¹¹ It

¹⁰⁵ See *Fourth Review Determination*, USITC Pub. 4667 at I-3 n.8 and I-8–9; *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 Fed. Reg. 21532 (Apr. 10, 2012); *Glycine From the People’s Republic of China: Final Partial Affirmative Determination of Circumvention of the Antidumping Duty Order*, 77 Fed. Reg. 73426 (Dec. 10, 2012) (determining that glycine processed by Salvi Chemical Industries Limited and AICO Laboratories India Ltd. and exported to the United States from India is circumventing the order on glycine from China and including such merchandise within the scope of the order). Similarly, CBP determined that imports of Chinese-origin glycine have been transhipped through India and Cambodia during the current period of review. CR/PR at Table I-5, note.

¹⁰⁶ CR/PR at I-7; *Notice of Modification of Section 301 Action: China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 Fed. Reg. 47974 (Sept. 21, 2018).

¹⁰⁷ CR/PR at I-7; *Notice of Modification of Section 301 Action: China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 84 Fed. Reg. 20459 (May 9, 2019).

¹⁰⁸ *Original Determination*, USITC Pub. 2863 at I-9–10.

¹⁰⁹ *Original Determination*, USITC Pub. 2863 at I-10.

¹¹⁰ *Original Determination*, USITC Pub. 2863 at I-10.

¹¹¹ *First Review Determination*, USITC Pub. 3315 at 8.

also found that glycine production capacity in China had likely increased since the original investigation given the increased number of reported glycine producers in China and the absence of any information indicating existing producers had reduced their production capacity.¹¹² Given the demonstrated ability of the industry in China to increase the volume of its exports to the U.S. market rapidly during the original investigation and the attractiveness of the large U.S. glycine market, the Commission found that the volume of subject imports would likely increase to significant levels if the order were revoked.¹¹³

Second Review. In the expedited second review, the Commission found that excess capacity to produce glycine in China had increased substantially since the original investigation, which would allow producers of subject merchandise to increase glycine exports to the United States substantially if the order were revoked.¹¹⁴ Moreover, the Commission observed that the glycine industry in China had developed the ability to serve all segments of the U.S. market, including the market for pharmaceutical grade glycine.¹¹⁵ It found that, notwithstanding the imposition of the order, the glycine industry in China continued to view the U.S. market as an attractive export destination to which it had shipped significantly increasing volumes of subject glycine since the first review.¹¹⁶ Given subject producers' interest in the U.S. market and their ability to increase shipments of glycine to the United States, the Commission found that subject import volume would likely increase significantly if the order were revoked.¹¹⁷

Third Review. In the full third review, the Commission found that the glycine industry in China continued to have significant production capacity, likely including significant excess capacity to produce non-technical grade (*e.g.*, USP) glycine – a product that accounted for about 90 percent of apparent U.S. consumption.¹¹⁸ It observed that the industry in China was export oriented, primarily exported USP-grade glycine, and continued to view the U.S. market as an attractive export destination as the volume of subject imports had reached their highest levels since the issuance of the order.¹¹⁹ Based on the demonstrated ability of glycine producers in China to increase the volume of subject imports in the U.S. market rapidly, their substantial production capacity and likely unused capacity, their export orientation (particularly

¹¹² *First Review Determination*, USITC Pub. 3315 at 8.

¹¹³ *First Review Determination*, USITC Pub. 3315 at 9.

¹¹⁴ *Second Review Determination*, USITC Pub. 3810 at 9–10.

¹¹⁵ *Second Review Determination*, USITC Pub. 3810 at 10.

¹¹⁶ *Second Review Determination*, USITC Pub. 3810 at 10.

¹¹⁷ *Second Review Determination*, USITC Pub. 3810 at 11.

¹¹⁸ *Third Review Determination*, USITC Pub. 4255 at 13.

¹¹⁹ *Third Review Determination*, USITC Pub. 4255 at 13.

with respect to USP-grade glycine), 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.¹²⁰

Fourth Review. In the expedited fourth review, the Commission found that the glycine industry in China had the ability and the incentive to increase its exports of glycine to the U.S. market after revocation. Specifically, the Commission found that subject producers possessed large amounts of production capacity and more excess production capacity than in any prior proceeding, vastly exceeding apparent U.S. consumption in 2015.¹²¹ Available information indicated that the glycine industry in China remained export oriented, as China was the world's largest exporter of glycine.¹²² The Commission also found that subject imports continued to be present in the U.S. market in substantial quantities during portions of the period of review and that glycine producers in China maintained existing distribution networks in the United States.¹²³ Given subject producers' excess capacity, their export orientation, and their historic interest in the U.S. market, the Commission found that glycine producers in China would use established channels of distribution to increase their exports to the United States if the order were revoked.¹²⁴ Accordingly, the Commission found that the volume of subject imports would likely be significant in the event of revocation.¹²⁵

2. The Current Review

The record in this review shows that subject imports maintained a presence in the U.S. market throughout the period of review. During the period of review, the volume of subject imports ranged from a low of 134,000 pounds in 2018 to a high of 734,000 pounds in 2017, and was 490,000 pounds in 2021, equivalent to *** percent of apparent U.S. consumption that year.¹²⁶ The volume of subject imports present in the U.S. market in 2021 was lower than in

¹²⁰ *Third Review Determination*, USITC Pub. 4255 at 13.

¹²¹ *Fourth Review Determination*, USITC Pub. 4667 at 13.

¹²² *Fourth Review Determination*, USITC Pub. 4667 at 14.

¹²³ *Fourth Review Determination*, USITC Pub. 4667 at 14.

¹²⁴ *Fourth Review Determination*, USITC Pub. 4667 at 14.

¹²⁵ *Fourth Review Determination*, USITC Pub. 4667 at 14.

¹²⁶ CR/PR at Table I-5. The volume of subject imports was 261,000 pounds in 2016, 734,000 pounds in 2017, 134,000 pounds in 2018, 316,000 pounds in 2019, 274,000 pounds in 2020, and 490,000 in 2021. *Id.*

the final year of the original investigation and second and third reviews but higher than in the final year of the first and fourth reviews.¹²⁷

Due to the expedited nature of this review, the record contains limited information on the glycine industry in China. The information available indicates that subject producers have the means and incentive to increase their exports of subject merchandise to the U.S. market to significant levels if the order were revoked. Public information submitted by GEO indicates that the glycine industry in China has continued to expand its production capacity since the prior review, resulting in approximately 1.6 billion pounds of production capacity in 2020.¹²⁸ Moreover, available information indicates that China's glycine industry was operating at a 55 percent capacity utilization rate in 2020, which would have yielded excess capacity (720 million pounds) that far exceeded total apparent U.S. consumption of glycine in 2021 (***) pounds).¹²⁹ ***, leaving ample excess capacity.¹³⁰ Accordingly, the Chinese glycine industry would have the ability to substantially increase its exports of glycine to the United States if the order were revoked.

Information on the record also indicates that the glycine industry in China continues to be export oriented and that it views the U.S. market as an attractive export destination.¹³¹ China was the world's largest country exporter of glycine and other amino acids, a category including glycine and out-of-scope merchandise, in each year from 2016 to 2020 and accounted for 45.7 percent of all such exports in 2020.¹³² In 2021, producers in China exported 906.4 million pounds of glycine and other amino acids.¹³³ Notwithstanding the imposition of the

¹²⁷ CR/PR at Table I-6. Subject import volume during the period of review may be understated as CBP determined that imports of glycine from China were transshipped through India and Cambodia during the POR. CR/PR at Table I-5, note. The volume of subject imports was 1.6 million pounds in 1994, 29,000 pounds in 1999, 555,000 pounds in 2004, 1.2 million pounds in 2010, and 15,000 pounds in 2015. CR/PR at Table I-6.

¹²⁸ Response at 11, citing *Production and Market of Glycine in China* (The Tenth Edition) (August 2021) at 6. The glycine industry in China has planned further production capacity expansions through 2025. Response, Exh. 1 at 14.

¹²⁹ Response at 11, citing *Production and Market of Glycine in China* (The Tenth Edition) (August 2021) at 6, appended as Exhibit 1; Final Comments at 6; CR/PR at Table I-6.

¹³⁰ CR/PR at I-19.

¹³¹ The record indicates that the subject merchandise is not subject to antidumping or countervailing duty orders in markets other than the United States. CR/PR at I-16. In September 2021, however, the Government of India initiated an antidumping duty investigation on imports of glycine from China, which may provide a barrier to importation into India for the glycine industry in China and thereby increase the attractiveness of the U.S. market. *Id.* at I-20.

¹³² *Calculated from* CR/PR at Table I-8; *see also id.* at Table I-8 note.

¹³³ CR/PR at Table I-7.

order and, in 2018, duties under Section 301, subject imports remained present in the U.S. market during the review period, thereby maintaining ready distribution networks in the United States.¹³⁴ Indeed, the United States was the largest destination for the Chinese industry's exports of glycine and other amino acids in 2021.¹³⁵

Given the rapid increase in the volume of subject imports during the original investigation, the continued presence of subject imports in the U.S. market during the period of review, the subject industry's substantial excess capacity and export orientation, and the attractiveness of the U.S. market to subject producers, we find that the volume of subject imports would likely be significant, both in absolute terms and relative to consumption in the United States, if the order were revoked.¹³⁶

D. Likely Price Effects

1. The Original Investigation and Prior Five-Year Reviews

Original Investigation. In the original investigation, the Commission found that the subject imports would likely enter the U.S. market at prices that would have a depressing or suppressing effect on prices for the domestic like product.¹³⁷ It observed that subject import prices had declined over the POI, and had undersold the domestic like product in the vast majority of pricing comparisons.¹³⁸ Because subject imports were largely substitutable for the domestic like product, and because decreases in glycine prices would not stimulate demand, it found that increasing volumes 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 U.S. glycine purchasers.¹³⁹

First Review. In the expedited first review, the Commission reiterated its finding from the original investigation that subject imports would likely have significant suppressing or

¹³⁴ CR/PR at Tables I-5 and I-6.

¹³⁵ CR/PR at Table I-7.

¹³⁶ No responding U.S. purchaser reported that the current Section 301 duties have had an effect on either the supply of or demand for subject imports or that they anticipated such effects in the reasonably foreseeable future. CR/PR at D-3–7. Furthermore, the volume of subject imports was higher in 2021 than it was in 2016, despite the imposition of Section 301 duties in 2018. CR/PR at Table I-5.

We also observe that the record in this expedited review contains no information concerning inventories of the subject merchandise or the potential for product shifting.

¹³⁷ *Original Determination*, USITC Pub. 2863 at I-11.

¹³⁸ *Original Determination*, USITC Pub. 2863 at I-11.

¹³⁹ *Original Determination*, USITC Pub. 2863 at I-11.

depressing effects on prices for the domestic like product.¹⁴⁰ Due to the limited pricing data available on the record, the Commission used average unit value (“AUV”) data as the facts available to compare pricing trends for subject imports and the domestic like product.¹⁴¹ It found that subject import AUVs had declined since the original investigation, and were lower than the AUVs for the domestic like product in the last full year of the period of review.¹⁴² The Commission found that, given the trend in the AUV data, the underselling observed during the original investigation, and the level of substitutability between subject imports and the domestic like product, subject imports would likely have significant price-depressing or price-suppressing effects on prices for the domestic like product if the order were revoked.¹⁴³

Second Review. In the expedited second review, the Commission again compared the AUVs of subject imports and the domestic like product and found that subject import AUVs remained well below the AUVs for shipments of the domestic like product in the final year of the period of review.¹⁴⁴ Accordingly, it found that the underselling found in the original investigation would likely recur in the event of revocation.¹⁴⁵ Given 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, the Commission found that a significant increase in low-priced subject imports would likely depress and suppress prices for the domestic like product.¹⁴⁶ Given these considerations, it found that revocation of the order would likely result in significant price effects.¹⁴⁷

Third Review. In the full third review, the Commission collected quarterly pricing data for three products.¹⁴⁸ It observed that subject imports *** the domestic like product in the *** 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 order was revoked because they primarily occurred in 2008, an atypical year in which peak demand coincided with a global glycine shortage and ***.¹⁴⁹ It found that prices

¹⁴⁰ *First Review Determination*, USITC Pub. 3315 at 9.

¹⁴¹ *First Review Determination*, USITC Pub. 3315 at 9–10.

¹⁴² *First Review Determination*, USITC Pub. 3315 at 10.

¹⁴³ *First Review Determination*, USITC Pub. 3315 at 10.

¹⁴⁴ *Second Review Determination*, USITC Pub. 3810 at 12.

¹⁴⁵ *Second Review Determination*, USITC Pub. 3810 at 12.

¹⁴⁶ *Second Review Determination*, USITC Pub. 3810 at 12.

¹⁴⁷ *Second Review Determination*, USITC Pub. 3810 at 12.

¹⁴⁸ *Third Review Determination*, USITC Pub. 4255 at 14.

¹⁴⁹ *Third Review Determination*, USITC Pub. 4255 at 14–15; *Confidential Third Review Views*, EDIS Doc. 762866 at 21.

for U.S.-produced glycine increased between the first quarter of 2005 and the last quarter of 2010, and that subject import prices followed a similar trend.¹⁵⁰ It found that subject producers in China likely would resume their aggressive underselling practices, which had persisted to some extent even with the order in place, to increase their U.S. market share.¹⁵¹ Given the high degree of interchangeability between subject imports and domestically produced glycine, the importance of price in purchasing decisions, and the fact that importers and purchasers had admittedly sought out lower glycine prices, the Commission concluded that underselling was likely to result in significant price effects.¹⁵² Accordingly, it found that, if the order was 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 on prices of the domestic like product.¹⁵³

Fourth Review. In the expedited fourth review, the Commission found that, if the order was revoked, subject imports would likely undersell the domestic like product to gain market share, as during the original investigation.¹⁵⁴ The Commission found that significant subject import underselling was particularly likely after revocation because the pertinent conditions of competition had not changed since the original investigation and underselling had persisted in the third review with the order in place.¹⁵⁵ In light of the importance of price in purchasing decisions, it found that significant quantities of low-priced subject imports would likely undersell the domestic like product after revocation, forcing domestic producers to either lower prices or lose sales.¹⁵⁶ Accordingly, the Commission found that, absent the discipline of the order, subject imports would likely have significant depressing or suppressing effects on prices for the domestic like product.¹⁵⁷

2. The Current Review

As previously discussed in Section III.B.3., we have found a moderately high degree of substitutability between the domestic like product and subject imports and that price is an important factor in purchasing decisions. Due to the expedited nature of this review, the

¹⁵⁰ *Third Review Determination*, USITC Pub. 4255 at 14.

¹⁵¹ *Third Review Determination*, USITC Pub. 4255 at 15.

¹⁵² *Third Review Determination*, USITC Pub. 4255 at 15.

¹⁵³ *Third Review Determination*, USITC Pub. 4255 at 15.

¹⁵⁴ *Fourth Review Determination*, USITC Pub. 4667 at 16.

¹⁵⁵ *Fourth Review Determination*, USITC Pub. 4667 at 16.

¹⁵⁶ *Fourth Review Determination*, USITC Pub. 4667 at 16.

¹⁵⁷ *Fourth Review Determination*, USITC Pub. 4667 at 16.

record does not contain new product-specific pricing information. Given subject import underselling during the original investigation and full third review, we find that subject imports are likely to undersell the domestic like product to a significant degree after revocation, as a means of gaining market share. In light of the moderately high degree of substitutability between domestically produced glycine and subject imports, and the importance of price to purchasing decisions, the significant volumes of low-priced subject imports that are likely after revocation would force the domestic industry to reduce prices or lose sales. Accordingly, we find that if the order were revoked, significant likely volumes of subject imports would likely undersell the domestic like product to gain market share and/or have significant depressing or suppressing effects on prices of the domestic like product.

E. Likely Impact

1. The Original Investigation and Prior Five-Year Reviews

Original Investigation. In the original investigation, the Commission found that the domestic industry's production, capacity utilization, employment, and financial performance declined between 1993 and 1994, while the domestic industry's raw material costs increased substantially.¹⁵⁸ The Commission found that certain domestic producers would be required to spread costs across reduced production volumes which would increase unit costs and decrease yields.¹⁵⁹ Furthermore, it found that increased volumes of subject imports would prevent domestic producers from raising prices to cover increased costs, which would exacerbate the domestic industry's declining financial performance.¹⁶⁰ Accordingly, the Commission concluded that subject imports were likely to have a significant adverse impact on the domestic industry in the imminent future.¹⁶¹

First Review. In the expedited first review, the Commission found that the imposition of the order had benefitted the domestic industry such that the industry was no longer in a vulnerable condition.¹⁶² In the event of revocation, however, the Commission found that significant increases in the volume of low-priced subject imports would have a significant adverse impact on the domestic industry's production, shipments, sales, and revenue, which would have a direct impact on the domestic industry's employment, profitability, and ability to

¹⁵⁸ *Original Determination*, USITC Pub. 2863 at I-12.

¹⁵⁹ *Original Determination*, USITC Pub. 2863 at I-12.

¹⁶⁰ *Original Determination*, USITC Pub. 2863 at I-12.

¹⁶¹ *Original Determination*, USITC Pub. 2863 at I-11–12.

¹⁶² *First Review Determination*, USITC Pub. 3315 at 11.

raise capital.¹⁶³ The Commission, therefore, concluded that revocation of the order would likely have a significant adverse impact on the domestic industry within a reasonably foreseeable time.¹⁶⁴

Second Review. In the expedited second review, the Commission observed that certain indicators of domestic industry performance had declined since 1999, but found that information on the record was insufficient for it to make a vulnerability finding.¹⁶⁵ It found that revocation of the order would result in a significant increase in the volume of low-priced subject imports, which would likely depress or suppress the domestic industry's prices to a significant degree.¹⁶⁶ Furthermore, it found that this would result in reductions in the domestic industry's production, sales, and revenue levels which would have a direct adverse impact on the industry's employment, profitability, and ability to raise capital and make and maintain necessary capital investments.¹⁶⁷ Accordingly, the Commission concluded that subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time if the order was revoked.¹⁶⁸

Third Review. In the full third review, the Commission observed that certain measures of the domestic industry's trade performance, including production, capacity utilization, U.S. shipments, and net sales, exhibited improvements in the first three years of the period of review before declining to a greater degree in 2009 and 2010.¹⁶⁹ The domestic industry's financial performance, however, exhibited a different pattern; the Commission found that its operating income and operating income margin had declined from 2005 to 2007, improved substantially in 2008 and 2009, and declined in 2010.¹⁷⁰ It also found that the domestic industry's employment metrics had declined irregularly over the period of review.¹⁷¹ Explaining that the pertinent data indicated that the domestic industry had weathered the recession profitably and was performing comparably or 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

¹⁶³ *First Review Determination*, USITC Pub. 3315 at 11.

¹⁶⁴ *First Review Determination*, USITC Pub. 3315 at 11.

¹⁶⁵ *Second Review Determination*, USITC Pub. 3810 at 13.

¹⁶⁶ *Second Review Determination*, USITC Pub. 3810 at 13.

¹⁶⁷ *Second Review Determination*, USITC Pub. 3810 at 13.

¹⁶⁸ *Second Review Determination*, USITC Pub. 3810 at 13.

¹⁶⁹ *Third Review Determination*, USITC Pub. 4255 at 16; *Confidential Third Review Views*, EDIS Doc. 762886 at 24.

¹⁷⁰ *Third Review Determination*, USITC Pub. 4255 at 17.

¹⁷¹ *Third Review Determination*, USITC Pub. 4255 at 16–17.

the domestic industry was not in a vulnerable condition.¹⁷² Nonetheless, the Commission found that the likely significant increase in the volume of low-priced subject imports and their associated price depressing and/or suppressing effects would likely have a significant adverse impact on the domestic industry's trade, employment, and financial indicators.¹⁷³ Consequently, it concluded that revocation of the order would likely have a significant adverse impact on the domestic industry within a reasonably foreseeable time.¹⁷⁴

Fourth Review. In the expedited fourth review, the Commission observed that the domestic industry's output and financial performance had increased since the prior review, and that the industry's production, capacity utilization, operating income, and operating income ratio were higher in 2015 than in 2010, the final year of the prior review.¹⁷⁵ Three Commissioners found that the domestic industry was not in a vulnerable condition while the other three Commissioners found the limited information available was insufficient to make a finding on the issue.¹⁷⁶ The Commission found that, if the order was revoked, the likely increase in low-priced subject imports, and their price effects, would have a significant impact on the domestic industry's production, shipments, sales, market share, and revenues which would in turn have a direct adverse impact on its profitability and employment, as well as its ability to raise capital and to make and maintain capital investments.¹⁷⁷ The Commission concluded that

¹⁷² *Third Review Determination*, USITC Pub. 4255 at 17.

¹⁷³ *Third Review Determination*, USITC Pub. 4255 at 17.

¹⁷⁴ *Third Review Determination*, USITC Pub. 4255 at 18. The Commission also considered the role of nonsubject imports in the U.S. market. Notwithstanding the fact that nonsubject imports increased 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 were lower priced than 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 was revoked. *Third Review Determination*, USITC Pub. 4255 at 17–18.

¹⁷⁵ *Fourth Review Determination*, USITC Pub. 4667 at 18.

¹⁷⁶ *Fourth Review Determination*, USITC Pub. 4667 at 18, nn.129, 130.

¹⁷⁷ *Fourth Review Determination*, USITC Pub. 4667 at 18. The Commission also considered the role of nonsubject imports so as not to attribute injury from nonsubject imports to the subject imports. The Commission observed that, notwithstanding the increase in nonsubject imports over the period of review, the domestic industry's production, capacity utilization, and profitability had all improved, making the likely impact of future subject imports distinguishable from that of future nonsubject imports. *Id.* at 18–19.

subject imports would likely have a significant impact on the domestic industry within a reasonably foreseeable time if the order was revoked.¹⁷⁸

2. The Current Review

Due to the expedited nature of this review, the record contains limited information on the domestic industry's performance since the prior proceedings. The information available indicates that the domestic industry's performance was generally weaker in 2021 than in 2015, the last year examined in the fourth review, but stronger than in 1994, the last year examined in the original investigation.¹⁷⁹ These data indicate that, in 2021, the domestic industry's production capacity was *** pounds, its production was *** pounds, and its capacity utilization rate was *** percent.¹⁸⁰ Its U.S. shipments in 2021 totaled *** pounds which had a value of \$***.¹⁸¹ In 2021, its reported net sales totaled \$***, its cost of goods sold ("COGS") totaled \$***, and its operating income totaled \$***, resulting in an operating income margin of *** percent.¹⁸² We find that the limited data on the record pertaining to the domestic industry's condition is insufficient for us to make a finding as to whether the industry is vulnerable to the continuation or recurrence of material injury.

Based on the information available in this review, we find that revocation of the antidumping duty order on glycine from China would likely result in significant volumes of subject imports that would undersell the domestic like product causing the domestic industry to lose sales and market share and/or significantly depress or suppress prices for the domestic like product. Accordingly, we find that the likely significant volume of subject imports and their price effects would likely have a significant adverse impact on the production, shipments, sales, market share, and revenues of the domestic industry. These declines, in turn, would likely have an adverse impact on the domestic industry's profitability, employment, and its ability to raise capital and make and maintain capital investments.

¹⁷⁸ *Fourth Review Determination*, USITC Pub. 4667 at 19.

¹⁷⁹ See CR/PR at Table I-4. We recognize that comparisons of the domestic industry's performance in 2021 to its performance in prior periods is influenced by the lower coverage of the domestic industry in this review as compared to that in the original investigation and first, second, and third reviews. See *id.* at I-10-11.

¹⁸⁰ CR/PR at Table I-4. All of these metrics were *** than in 1994, the final year of the original investigation, but *** than in 2015, the final year of the fourth period of review. *Id.*

¹⁸¹ CR/PR at Table I-4. Both of these figures were *** than in 1994 but *** than in 2015. *Id.*

¹⁸² CR/PR at Table I-4. The domestic industry's net sales, COGS, operating income, and operating income margin were all *** than in 1994. *Id.* Its net sales, operating income, and operating income margin were all *** than in 2015 while its COGS were ***. *Id.*

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 imports. Although nonsubject imports were the largest source of glycine in the U.S. market in 2021, accounting for *** percent of apparent U.S. consumption that year, the record does not provide any indication that the presence of nonsubject imports would prevent subject imports from entering the U.S. market in significant volumes or adversely affecting the domestic industry's prices after revocation of the order. Given the fact that the domestic industry supplies over *** of apparent U.S. consumption, the moderately high substitutability between domestic and subject glycine, and the importance of price to purchasers, the presence of nonsubject imports in the U.S. market would likely not prevent the significant volume of low-priced subject imports that is likely after revocation from taking market share from the domestic industry, or from forcing domestic producers to lower their prices or forgo price increases in order to maintain market share. In light of these considerations, we find that the likely impact of future subject imports is distinguishable from any impact of nonsubject imports.

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

III. Conclusion

For the above reasons, we determine 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.

Information obtained in this review

Background

On January 3, 2022, 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 be likely to lead to continuation or recurrence of material injury.² All interested parties were requested to respond to this notice by submitting certain information requested by the Commission.³ ⁴ Table I-1 presents information relating to the background and schedule of this proceeding:

Table I-1
Glycine: Information relating to the background and schedule of this proceeding

Effective date	Action
January 3, 2022	Notice of initiation by Commerce (87 FR 76, January 3, 2022)
January 3, 2022	Notice of institution by Commission (87 FR 112, January 3, 2022)
April 8, 2022	Commission’s vote on adequacy
April 29, 2022	Commerce’s results of its expedited review
August 30, 2022	Commission’s determination and views

¹ 19 U.S.C. 1675(c).

² 87 FR 112, January 3, 2022. 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. 87 FR 76, January 3, 2022. 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 the original investigation and subsequent full review are 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 domestic like product and the subject merchandise. Presented in app. D are the responses received from purchaser surveys transmitted to the purchasers identified in this proceeding.

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. It was filed on behalf of GEO Specialty Chemicals, Inc. (“GEO”), a domestic producer of glycine (referred to herein as “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-2.

Table I-2

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

Interested party	Type	Number of firms	Coverage
U.S. producer	Domestic	1	79%

Note: The U.S. producer coverage figure presented is the domestic interested party’s estimate of its share of total U.S. production of glycine during 2021. The domestic interested party based this estimate on its disbursements outlined in the U.S. Customs and Border Protection’s (“CBP”) 2014 annual report for the Continued Dumping and Subsidy Offset Act (“CDSOA”), which was the last time both of the known U.S. producers of glycine simultaneously applied for a CDSOA disbursement. The domestic interested party believes that this estimate of its share of total U.S. production of glycine remains accurate in 2021. Domestic interested party’s supplemental response to the notice of institution, February 8, 2022, p. 2.

Party comments on adequacy

The Commission received party comments on the adequacy of responses to the notice of institution and whether the Commission should conduct an expedited or full review from domestic interested party GEO. GEO requests that the Commission conduct an expedited review of the antidumping duty order on glycine.⁵

The original investigation and subsequent reviews

The original investigation

The original investigation resulted from a petition filed on July 1, 1994 with Commerce and the Commission by Hampshire Chemical Corp., Lexington, Massachusetts and Chattem,

⁵ Domestic interested party’s comments on adequacy, March 17, 2022, p. 2.

Inc., Chattanooga, Tennessee.⁶ On January 30, 1995, Commerce determined that imports of glycine from China were being sold at less than fair value (“LTFV”).⁷ The Commission determined on March 14, 1995 that the domestic industry was threatened with material injury by reason of LTFV imports of glycine from China.⁸ On March 29, 1995, Commerce issued its antidumping duty order with the final weighted-average dumping margin of 155.89 percent.⁹

The first five-year review

On May 5, 2000, the Commission determined that it would conduct an expedited review of the antidumping duty order on glycine from China.¹⁰ On June 8, 2000, Commerce determined that revocation of the antidumping duty order on glycine from China would be likely to lead to continuation or recurrence of dumping.¹¹ On June 30, 2000, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.¹² 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.¹³

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.¹⁴ On October 5, 2005, Commerce determined that revocation of the antidumping duty order on glycine from China would be likely to lead to continuation or recurrence of dumping.¹⁵ On October 31, 2005, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.¹⁶ Following affirmative determinations in the five-year reviews by Commerce

⁶ Glycine from The People’s Republic of China, Inv. No. 731-TA-718 (Final), USITC Publication 2863, March 1995 (“Original publication”), p. II-3.

⁷ 60 FR 5620, January 30, 1995.

⁸ 60 FR 14962, March 21, 1995.

⁹ 60 FR 16116, March 29, 1995.

¹⁰ 65 FR 31145, May 16, 2000.

¹¹ 65 FR 36405, June 8, 2000.

¹² 65 FR 43037, July 12, 2000.

¹³ 65 FR 45752, July 25, 2000.

¹⁴ 70 FR 55625, September 22, 2005.

¹⁵ 70 FR 58185, October 5, 2005.

¹⁶ 70 FR 66850, November 3, 2005.

and the Commission, effective November 15, 2005, Commerce issued a continuation of the antidumping duty order on imports of glycine from China.¹⁷

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.¹⁸ On February 9, 2011, Commerce determined that revocation of the antidumping duty order on glycine from China would be likely to lead to continuation or recurrence of dumping.¹⁹ On August 30, 2011, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.²⁰ Following affirmative determinations in the 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.²¹

The fourth five-year review

On November 4, 2016, the Commission determined that it would conduct an expedited review of the antidumping duty order on glycine from China.²² On December 8, 2016, Commerce determined that revocation of the antidumping duty order on glycine from China would be likely to lead to continuation or recurrence of dumping.²³ On January 31, 2017, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.²⁴ Following affirmative determinations in the five-year reviews by Commerce and the Commission, effective February 15, 2017, Commerce issued a continuation of the antidumping duty order on imports of glycine from China.²⁵

¹⁷ 70 FR 69316, November 15, 2005.

¹⁸ 76 FR 8771, February 15, 2011.

¹⁹ 76 FR 7150, February 9, 2011.

²⁰ 76 FR 55109, September 6, 2011.

²¹ 76 FR 57951, September 19, 2011.

²² 81 FR 87589, December 5, 2016.

²³ 81 FR 88663, December 8, 2016.

²⁴ 82 FR 9223, February 3, 2017.

²⁵ 82 FR 10745, February 15, 2017.

Previous and related investigations

The Commission has conducted a number of previous import relief investigations on glycine. Table I-3 presents information on previous and related title VII investigations.

Table I-3
Glycine: Previous and related Commission proceedings and status of orders

Date	Number	Country	Determination	Current Status of Order
1969	AA1921-61	France	Affirmative	Order revoked, March 7, 1979
2007	731-TA-1111	India	Negative	NA
2007	731-TA-1112	Japan	Negative	NA
2007	731-TA-1113	Korea	Negative	NA
2018	701-TA-603	China	Affirmative	First review scheduled for institution on May 1, 2024
2018	701-TA-604	India	Affirmative	First review scheduled for institution on May 1, 2024
2018	701-TA-605	Thailand	Negative	NA
2018	731-TA-1413	India	Affirmative	First review scheduled for institution on May 1, 2024
2018	731-TA-1414	Japan	Affirmative	First review scheduled for institution on May 1, 2024
2018	731-TA-1415	Thailand	Affirmative	First review scheduled for institution on May 1, 2024

Source: U.S. International Trade Commission publications and Federal Register notices.

Note: "Date" refers to the year in which the investigation was instituted by the Commission.

Commerce's five-year review

Commerce announced that it would conduct an expedited review with respect to the antidumping duty order on imports of glycine from China with the intent of issuing the final results of this review based on the facts available not later than May 3, 2022.²⁶ Commerce publishes its Issues and Decision Memoranda and its final results concurrently, accessible upon publication at <http://enforcement.trade.gov/frn/>. Issues and Decision Memoranda contain complete and up-to-date information regarding the background and history of the order, including scope rulings, duty absorption, changed circumstances reviews, and anticircumvention, as well as any decisions that may have been pending at the issuance of this report. Any foreign producers/exporters that are not currently subject to the antidumping duty order on imports of glycine from China are noted in the sections titled "The original investigation" and "U.S. imports," if applicable.

The product

Commerce's scope

Commerce has defined the scope as follows:

*{G}lycine, which is 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.*²⁷

²⁶ Letter from Melissa G. Skinner, Senior Director, AD/CVD Operations, Enforcement and Compliance, U.S. Department of Commerce to Nannette Christ, Director of Investigations, February 22, 2022.

²⁷ 82 FR 10745, February 15, 2017.

U.S. tariff treatment

Glycine is currently provided for in subheading 2922.49.43 of the Harmonized Tariff Schedule of the United States (“HTS”).²⁸ Glycine produced in China is imported into the U.S. market at a column 1-general duty rate of 4.2 percent *ad valorem*. Effective September 24, 2018, glycine produced in China was subject to an additional 10 percent *ad valorem* duty under Section 301 of the Trade Act of 1974, increasing to 25 percent as of May 10, 2019.²⁹ Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Description and uses³⁰

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 acid that is produced naturally by humans and other organisms as a building block for proteins.³¹ Commercial production of glycine uses traditional chemical synthesis. Glycine is most commonly sold in its dry form as a white, free-flowing powder and is odorless and sweet to the taste. Glycine has the Chemical Abstracts Service (CAS) registry number of 56-40-6.

Glycine is typically sold in two main grades:³² United States Pharmacopeial Convention

²⁸ As of July 1, 2017, the import classification for glycine changed from HTS subheading 2922.49.4020 to HTS subheading 2922.49.4300, as a result of Presidential Proclamation 9625.

²⁹ “Notice of Modification of Section 301 Action: China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation,” 83 FR 47974, September 21, 2018, <https://ustr.gov/sites/default/files/enforcement/301Investigations/83%20FR%2047974.pdf>; “Notice of Modification of Section 301 Action: China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation,” 84 FR 20459, May 9, 2019, <https://ustr.gov/sites/default/files/enforcement/301Investigations/84 FR 20459.pdf>. Also as noted in HTS Chapter 99 (Rev. 2, 2022), “For the purposes of heading 9903.88.03, products of China, as provided for in this note, shall be subject to an additional 25 percent ad valorem rate of duty. The products of China that are subject to an additional 25 percent ad valorem rate of duty under heading 9903.88.03 are products of China that are classified in the subheadings enumerated in U.S. note 20(f) to subchapter III.”

³⁰ Unless otherwise noted, this information is based on Glycine from China, Inv. No. 731-TA-718 (Fourth Review), USITC Publication 4667, February 2017 (“Fourth review publication”), pp. I-3-I-4.

³¹ 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.

³² Glycine is sold in various grades under various names but there does not seem to be an industrywide consensus on the names of the grades. Many agree on the terms “technical” (e.g., glycine used in industrial applications) and “USP-grade” (e.g., glycine used as a sweetener or flavor enhancer in foods and pharmaceuticals). There is also a higher-purity grade (“ultra-pure”) used as either an API

(continued...)

(“USP”) grade and technical grade.³³ 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 the 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 feed for household pets and 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.

(sometimes called “pharmaceutical grade”; “USP-NF pharmaceutical grade”; or “IV-grade”) or in the manufacture of semiconductors. Glycine from China, India, Japan, and Thailand, Inv. Nos. 701-TA-603-604 and 731-TA-1413- 1414 (Final), USITC Publication 4900, June 2019, pp. 1-14.

³³ 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>, retrieved February 26, 2022.

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.

Manufacturing process³⁴

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.

³⁴ Unless otherwise noted, this information is based on fourth review publication, p. I-5.

The industry in the United States

U.S. producers

During the final phase of the original investigation, the Commission received U.S. producer questionnaires from two firms, Chattem, Inc. (“Chattem”) and Hampshire Chemical Corp. (“Hampshire”), which were the only known producers of glycine in the United States during the original period of investigation, 1992-94.³⁵

During the first expedited five-year review, domestic interested parties identified two firms (Chattem and Hampshire) as the only producers of glycine in the United States at that time.³⁶ U.S. industry data in the first five-year review were based on a response filed on behalf of two firms that were believed to account for 100 percent of total U.S. production of glycine during 1999.³⁷

Similarly, during the second expedited five-year review, the domestic interested party identified two firms (Chattem and Hampshire) as the only producers of glycine in the United States at that time.³⁸ U.S. industry data in the second five-year review were based on a response filed on behalf of two firms that were believed to account for 100 percent of total U.S. production of glycine during 2004.³⁹

During the third full five-year review, the Commission received U.S. producer questionnaires from two firms (Chattem and GEO, the successor to Hampshire), which were believed to account for 100 percent of U.S. production of glycine during 2010.⁴⁰

During the fourth expedited five-year review, the domestic interested party identified two known U.S. producers of glycine (Chattem and GEO), which accounted for all U.S. production of glycine during 2015.⁴¹ U.S. industry data in the fourth five-year review were

³⁵ Original publication, pp. II-12, II-14.

³⁶ Glycine from China, Investigation No. 731-TA-718 (First Review), USITC Publication 3315, June 2000 (“First review publication”), p. I-6.

³⁷ *Ibid.*, p. I-3, I-7.

³⁸ Glycine from China, Investigation No. 731-TA-718 (Second Review), USITC Publication 3810, October 2005 (“Second review publication”), p. I-7.

³⁹ *Ibid.*, pp. I-1, I-7.

⁴⁰ Glycine from China, Investigation No. 731-TA-718 (Third Review), USITC Publication 4255, August 2011 (“Third review publication”), p. I-10.

⁴¹ Fourth review publication, p. I-11.

based on a response filed on behalf of one firm that accounted for an estimated *** percent of total U.S. production of glycine in 2015.⁴²

In response to the Commission's notice of institution in this fifth five-year review, the domestic interested party identified two known and currently operating U.S. producers of glycine: Chattem and GEO.⁴³ Moreover, one firm (GEO) provided U.S. industry data in response to the Commission's notice of institution and estimated that it accounted for approximately 79 percent of total glycine production in the United States during 2021.⁴⁴

Recent developments

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

- GEO Specialty Chemicals has continued to invest in capital improvements and staffing since 2017. GEO updated its quality control lab; updated necessary software; and ensured a sufficient flow of parts. GEO also created a new position for a Lead Quality Control Technician and filled the position in April 2020.⁴⁵
- GEO Specialty Chemicals was bought by CPS Performance Materials, a unit of Arsenal Capital Partners (a private equity firm) in September 2019.⁴⁶

⁴² Investigation No. 731-TA-718 (Fourth Review): Glycine from China, Confidential Report, INV-OO-096, October 20, 2016, p. I-2.

⁴³ Domestic interested party's response to the notice of institution, January 28, 2022, p. 14.

⁴⁴ Domestic interested party's supplemental response to the notice of institution, February 8, 2022, p. 2.

⁴⁵ Domestic interested party's response to the notice of institution, January 28, 2022, p. 19.

⁴⁶ Marc S. Reisch, "Arsenal buys Geo Specialty Chemicals," *c&en*, September 6, 2019, <https://cen.acs.org/business/mergers-acquisitions/Arsenal-buys-Geo-Specialty-Chemicals/97/i35>; "CPS Performance Materials Group Acquires GEO Specialty Chemicals," press release, September 3, 2019, <https://www.oilandgas360.com/cps-performance-materials-group-acquires-geo-specialty-chemicals/>. The *c&en* article mentions "Over the past few years, Geo has had a series of cash-flow problems and has battled competitors it accused of dumping glycine into the US market."

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 in the current five-year review.⁴⁷ Table I-4 presents a compilation of the trade and financial data submitted from all responding U.S. producers in the original investigation and subsequent five-year reviews.

Table I-4
Glycine: Trade and financial data submitted by U.S. producers, by period

Quantity in 1,000 pounds; Value in 1,000 dollars; Unit value in dollars per pound; Ratios are in percent

Item	Measure	1994	1999	2004	2010	2015	2021
Capacity	Quantity	***	NA	***	***	***	***
Production	Quantity	***	***	***	***	***	***
Capacity utilization	Ratio	***	NA	***	***	***	***
U.S. shipments	Quantity	***	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***	***
Net sales	Value	***	NA	NA	***	***	***
COGS	Value	***	NA	NA	***	***	***
COGS to net sales	Ratio	***	NA	NA	***	***	***
Gross profit or (loss)	Value	***	NA	NA	***	***	***
SG&A expenses	Value	***	NA	NA	***	***	***
Operating income or (loss)	Value	***	NA	NA	***	***	***
Operating income or (loss) to net sales	Ratio	***	NA	NA	***	***	***

Source: For the years 1994, 1999, 2004, 2010, and 2015, data are compiled using data submitted in the Commission's original investigation, first five-year review, second five-year review, third five-year review, and fourth five-year review, respectively. For the year 2021, data are compiled using data submitted by the domestic interested party. Domestic interested party's response to the notice of institution, January 28, 2022, pp. 18-19.

Note: For a discussion of data coverage, please see "U.S. producers" section.

⁴⁷ Individual company trade and financial data are presented in app. B.

Definitions of the domestic like product and domestic industry

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. 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. Under the related parties provision, the Commission may exclude a U.S. producer from the domestic industry for purposes of its injury determination if “appropriate circumstances” exist.⁴⁸

In its original determination, its expedited first and second five-year review determinations, its full third five-year review determination, and its expedited fourth five-year review determination, the Commission defined the domestic like product as all glycine, coextensive with Commerce’s scope. In its original determination and its four prior five-year review determinations, the Commission defined the domestic industry as all domestic producers of glycine.⁴⁹

U.S. imports

U.S. importers

During the final phase of the original investigation, the Commission received usable U.S. importer questionnaires from 13 firms.⁵⁰ Import data presented in the original investigation are based on official Commerce statistics. The Commission did not receive responses from any respondent interested parties in its first expedited five-year review. Import data presented in the first five-year review are based on official Commerce statistics.⁵¹ Although the Commission did not receive responses from any respondent interested parties in its second expedited five-year review, the domestic interested party provided a list of 12 firms that may have imported glycine from China at that time.⁵² Import data presented in the second five-year review are based on official Commerce statistics. During the third full five-year review, the Commission received U.S. importer questionnaires from 15 firms, which were believed to account for

⁴⁸ Section 771(4)(B) of the Tariff Act of 1930, 19 U.S.C. § 1677(4)(B).

⁴⁹ 87 FR 112, January 3, 2022.

⁵⁰ Original publication, p. II-13.

⁵¹ First review publication, pp. I-8 and I-10.

⁵² Second review publication, p. I-7.

virtually all U.S. imports from China in 2010.⁵³ Import data presented in the third five-year review are based on official Commerce statistics. Although the Commission did not receive responses from any respondent interested parties in its fourth expedited five-year review, the domestic interested party provided a list of 13 firms that may have imported glycine from China at that time.⁵⁴ Import data presented in the fourth five-year review are based on official Commerce statistics.

Although the Commission did not receive responses from any respondent interested parties in this current fifth five-year review, in its response to the Commission's notice of institution, the domestic interested party provided a list of 22 potential U.S. importers of glycine from China.⁵⁵

U.S. imports

Table I-5 presents the quantity, value, and unit value of U.S. imports from China as well as the other top sources of U.S. imports (shown in descending order of 2021 imports by quantity).⁵⁶

⁵³ Third review publication, p. I-10.

⁵⁴ Fourth review publication, p. I-13.

⁵⁵ Domestic interested party's response to the notice of institution, January 28, 2022, pp. 15-17.

⁵⁶ U.S. imports of glycine from Indonesia appeared for the first year in 2021—amounting to 1.9 million pounds—but CBP initiated an investigation under the Enforce and Protect Act (“EAPA”) in October 2021 against U.S. importers Nutrawave Co., Ltd.; Starille, Ltd.; and Newtrend USA Co., Ltd. (“Newtrend USA”) as to whether these U.S. imports were transshipments from Thailand, potentially evading the U.S. antidumping duty order on glycine from Thailand. EAPA Case No. 7663: Nutrawave Co., Ltd., Starille, Ltd., and Newtrend USA Co., Ltd. (Notice of Initiation of Investigation and Interim Measures, October 26, 2021), <https://www.cbp.gov/sites/default/files/assets/documents/2021-Nov/10-26-2021%20-%20TRLED%20-%20Initiation%20Notice%20%28508%20compliant%29-%20%28Cons%20Case%207663%29%20-%20PV.pdf>.

Previously, CBP examined an allegation that U.S. importer Newtrend USA evaded the antidumping duty order on glycine from China by transshipping Chinese-origin glycine through Thailand. On September 25, 2019, following an EAPA investigation, CBP made a negative final determination as to evasion. EAPA Case No. 7270: Newtrend USA Co., Ltd. (Notice of Final Determination as to Evasion, September 25, 2019), <https://www.cbp.gov/sites/default/files/assets/documents/2019-Oct/TRLED%20-%20Final%20Determination%20%287270%29%20-%20PV%20%28508%20Compliant%29.pdf>.

Table I-5
Glycine: U.S. imports, by source and period

Quantity in 1,000 pounds; value in 1,000 dollars

U.S. imports from	Measure	2016	2017	2018	2019	2020	2021
China (subject)	Quantity	261	734	134	316	274	490
India	Quantity	4,260	3,903	1,136	5,219	6,769	6,509
Japan	Quantity	4,629	5,305	3,568	3,489	5,317	4,449
Indonesia	Quantity	---	---	---	---	---	1,922
Thailand	Quantity	1,356	2,720	6,003	867	---	---
All other sources	Quantity	556	174	82	68	353	850
Nonsubject sources	Quantity	10,802	12,101	10,788	9,643	12,439	13,730
All import sources	Quantity	11,063	12,836	10,923	9,959	12,713	14,220
China (subject)	Value	419	1,324	252	763	920	1,733
India	Value	8,146	7,030	1,859	10,133	12,875	13,637
Japan	Value	9,807	10,206	7,046	7,334	10,502	10,110
Indonesia	Value	---	---	---	---	---	3,837
Thailand	Value	3,014	4,592	9,268	1,334	---	---
All other sources	Value	942	480	207	204	1,160	2,725
Nonsubject sources	Value	21,909	22,308	18,380	19,004	24,538	30,310
All import sources	Value	22,328	23,632	18,632	19,767	25,458	32,043

Table continued.

Table I-5 Continued
Glycine: U.S. imports, by source and period

Unit value in dollars per pound

U.S. imports from	Measure	2016	2017	2018	2019	2020	2021
China (subject)	Unit value	1.60	1.80	1.88	2.41	3.35	3.54
India	Unit value	1.91	1.80	1.64	1.94	1.90	2.09
Japan	Unit value	2.12	1.92	1.97	2.10	1.98	2.27
Indonesia	Unit value	---	---	---	---	---	2.00
Thailand	Unit value	2.22	1.69	1.54	1.54	---	---
All other sources	Unit value	1.69	2.75	2.53	3.01	3.29	3.21
Nonsubject sources	Unit value	2.03	1.84	1.70	1.97	1.97	2.21
All import sources	Unit value	2.02	1.84	1.71	1.98	2.00	2.25

Source: Compiled from official Commerce statistics for HTS statistical reporting numbers 2922.49.4020 and 2922.49.4300, accessed February 11, 2022.

Note: U.S. imports of glycine from China are likely understated based on CBP determinations made during the current period of review (2016-21) that imports of Chinese-origin glycine had been transshipped through India and Cambodia. EAPA Case No. 7208: Ceka Nutrition, Inc. (Notice of Final Determination as to Evasion, July 2, 2018), <https://www.cbp.gov/sites/default/files/assets/documents/2018-Jul/TRLED%20Final%20Determination%20for%20Case%207208%20-%20PV.pdf>; EAPA Case No. 7320: Brio USA, LLC (Notice of Final Determination as to Evasion, May 19, 2020), <https://www.cbp.gov/sites/default/files/assets/documents/2020-May/05192020%20-%20TRLED%20Notice%20of%20Final%20Determination%20%28508%20compliant%29%20-%20%287320%29%20-%20PV.pdf>; and Domestic interested party's response to the notice of institution, January 28, 2022, p. 15.

Note: Since July 1, 2017, glycine is classified under HTS statistical reporting number 2922.49.4300; before that date, glycine was classified under HTS statistical reporting number 2922.49.4020.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Note: Because of rounding, figure may not add to total shown.

Apparent U.S. consumption and market shares

Table I-6 presents data on U.S. producers' U.S. shipments, U.S. imports, apparent U.S. consumption, and market shares.

Table I-6
Glycine: Apparent U.S. consumption and market shares, by source and period

Quantity in 1,000 pounds; value in 1,000 dollars; share of quantity is the share of apparent U.S. consumption by quantity in percent; share of value is the share of apparent U.S. consumption by value in percent

Source	Measure	1994	1999	2004	2010	2015	2021
U.S. producers	Quantity	***	***	***	***	***	***
China (subject)	Quantity	1,606	29	555	1,190	15	490
Nonsubject sources	Quantity	582	2,471	4,450	7,844	13,780	13,730
All import sources	Quantity	2,189	2,500	5,005	9,034	13,795	14,220
Apparent U.S. consumption	Quantity	***	***	***	***	***	***
U.S. producers	Value	***	***	***	***	***	***
China (subject)	Value	2,216	40	578	1,724	25	1,733
Nonsubject sources	Value	1,565	4,365	6,068	17,608	28,660	30,310
All import sources	Value	3,781	4,403	6,646	19,333	28,685	32,043
Apparent U.S. consumption	Value	***	***	***	***	***	***
U.S. producers	Share of quantity	***	***	***	***	***	***
China (subject)	Share of quantity	***	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***	***
All import sources	Share of quantity	***	***	***	***	***	***
U.S. producers	Share of value	***	***	***	***	***	***
China (subject)	Share of value	***	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***	***
All import sources	Share of value	***	***	***	***	***	***

Source: For the years 1994, 1999, 2004, 2010, and 2015, data are compiled using data submitted in the Commission's original investigation, first five-year review, second five-year review, third five-year review, and fourth five-year review, respectively. For the year 2021, U.S. producers' U.S. shipments are compiled from the domestic interested party's response to the Commission's notice of institution and U.S. imports are compiled using official Commerce statistics under HTS statistical reporting numbers 2922.49.4020 and 2922.49.4300, accessed February 11, 2022.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Note: For a discussion of data coverage, please see "U.S. producers" and "U.S. importers" sections.

The industry in China

During the final phase of the original investigation, the Commission received foreign producer/exporter questionnaires from three firms whose exports of glycine to the United States accounted for *** percent of total U.S. imports of glycine from China during 1994.⁵⁷ Although the Commission did not receive responses from any respondent interested parties in its first expedited five-year review, Commission staff identified *** possible Chinese producers of glycine at that time through third-party research sources.⁵⁸ Although the Commission did not receive responses from any respondent interested parties in its second expedited five-year review, the domestic interested party provided a list of 17 possible producers of glycine in China during that proceeding.⁵⁹ During the third full five-year review, the Commission did not receive any responses to its foreign producer/exporter questionnaire. However, *** during that proceeding.⁶⁰ Although the Commission did not receive responses from any respondent interested parties in its fourth expedited five-year review, the domestic interested party noted that Chinese glycine producers exhibited a significant export orientation in that proceeding.⁶¹

Although the Commission did not receive responses from any respondent interested parties in this current fifth five-year review, the domestic interested party provided a list of 26 possible producers of glycine in China.⁶²

In its response to the Commission's notice of institution in the current fifth five-year review, domestic interested party GEO noted that glycine producers from China have substantially increased production capacity, stating (as in the prior review) that "despite anemic utilization rates, Chinese producers continue to add to their already significantly underutilized capacity."⁶³ GEO also states that, according to a market study commissioned for this current

⁵⁷ Investigation No. 731-TA-718 (Final): Glycine from China, Confidential Report, INV-S-020, February 27, 1995, as revised in INV-S-022, March 2, 1995, p. I-54.

⁵⁸ Investigation No. 731-TA-718 (Review): Glycine from China, Confidential Report, INV-X-120, June 2, 2000, pp. I-20-I-21. Commission staff identified these possible Chinese producers of glycine through ***.

⁵⁹ Second review publication, p. I-20.

⁶⁰ Investigation No. 731-TA-718 (Third Review): Glycine from China, Confidential Report, INV-JJ-079, July 28, 2011, p. IV-6.

⁶¹ Fourth review publication, p. I-30.

⁶² Domestic interested party's response to the notice of institution, January 28, 2022, exh. 1.

⁶³ Domestic interested party's response to the notice of institution, January 28, 2022, p. 10.

five-year review, Chinese production capacity for glycine amounted to nearly 1.6 billion pounds in 2020. While glycine production in 2020 was 882 million pounds, the capacity utilization rate was about 55 percent, and the overcapacity (and related underutilization) is likely to continue during the next few years.^{64 ***}⁶⁵

Table I-7 presents export data for HS 2922.49, a category that includes glycine and out-of-scope products, from China (by export destination in descending order of quantity for 2021).

Table I-7
Glycine and other amino acids: Quantity of exports from China, by destination and period

Quantity in 1,000 pounds

Destination market	2016	2017	2018	2019	2020	2021
United States	69,967	86,604	91,380	73,002	97,996	150,804
Netherlands	60,089	75,103	79,671	89,712	105,462	136,357
Germany	45,390	49,351	68,059	62,893	63,655	67,556
India	36,936	38,055	40,490	52,608	60,222	52,854
Japan	40,357	47,949	44,279	48,551	48,686	49,435
Russia	12,303	16,808	21,517	29,559	36,983	42,735
Spain	14,987	21,990	24,410	29,944	34,785	36,041
Poland	12,835	15,436	15,380	22,271	26,140	32,773
Brazil	7,305	8,949	16,602	18,718	25,997	32,089
South Korea	16,611	18,211	19,881	22,281	24,416	27,562
All other markets	140,703	158,933	169,837	209,724	253,555	278,213
All markets	457,484	537,390	591,506	659,262	777,897	906,419

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS subheading 2922.49, accessed March 8, 2022. These data may be overstated as HS subheading 2922.49 may contain products outside the scope of this review.

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

⁶⁴ Domestic interested party's response to the notice of institution, January 28, 2022, pp. 11 and 13.

⁶⁵ ***.

Third-country trade actions

On September 30, 2021, the Government of India initiated an antidumping duty investigation on India's imports of glycine from China.⁶⁶ The initiating notice of the antidumping case notes that India's imports of glycine are classified in HS codes 2922.49.10 and 2922.49.90, each having a tariff rate of 10 percent.⁶⁷ The scope of the investigation is described below:

The scope of this investigation covers 'glycine' known by any name. Because glycine is produced at varying levels of purity or grades, it has a number of commercial names based on its level of purity or grade such as crude, industrial, technical-grade, feed-grade, food-grade, U.S. Pharmacopeia- or USP-grade, IP Grade, Food Grade, and pharmaceutical-grade. The scope of this investigation covers glycine of all grades.⁶⁸

The global market

Global trade in glycine is tracked under the HS heading 2922.49, a basket category covering glycine and other amino acids. Table I-8 presents export data for HS 2922.49 by source in descending order of quantity for 2020. As shown in table I-8, China was the largest exporter in every year during 2016-20 for this basket category and its share of total global exports by quantity increased from 33.4 percent in 2016 to 45.7 percent in 2020.

⁶⁶ "Anti-dumping investigation concerning imports of Glycine originating in or exported from China PR, "Case No. : 6/14/2021-DGTR, Product: Glycine, Country: China PR. <https://dgtr.gov.in/anti-dumping-cases/anti-dumping-investigation-concerning-imports-glycine-originating-or-exported>.

⁶⁷ <https://www.dgtr.gov.in/sites/default/files/Glycine.pdf>.

⁶⁸ <https://www.dgtr.gov.in/sites/default/files/Glycine.pdf>.

Table I-8
Glycine and other amino acids: Quantity of global exports, by country and period

Quantity in 1,000 pounds

Exporting country	2016	2017	2018	2019	2020
China	457,484	537,390	591,506	659,262	777,897
Netherlands	189,977	200,394	218,684	246,226	258,571
Germany	313,268	288,246	265,182	259,523	233,637
United States	134,548	173,258	164,611	169,752	128,417
Belgium	52,765	66,240	63,324	79,388	69,207
France	51,437	40,292	40,869	55,480	64,358
Japan	25,299	25,996	23,722	22,454	24,614
South Korea	14,578	17,518	17,584	18,893	19,219
India	17,836	14,215	12,582	18,156	19,111
United Kingdom	14,910	15,340	19,447	16,840	15,159
All other exporters	97,945	117,276	124,879	103,834	91,516
All exporters	1,370,049	1,496,164	1,542,392	1,649,809	1,701,705

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS subheading 2922.49, accessed on March 8, 2022. These data may be overstated as HS subheading 2922.49 may contain products outside the scope of this review. Also, data for 2021 are not presented because of data availability issues.

Note: Because of rounding, figures may not add to total shown.

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
87 FR 76 January 3, 2022	<i>Initiation of Five-Year (Sunset) Reviews</i>	https://www.govinfo.gov/content/pkg/FR-2022-01-03/pdf/2021-28405.pdf
87 FR 112, January 3, 2022	<i>Glycine From China; Institution of a Five-Year Review</i>	https://www.govinfo.gov/content/pkg/FR-2022-01-03/pdf/2021-28355.pdf

APPENDIX B
COMPANY-SPECIFIC DATA

* * * * *

APPENDIX C
SUMMARY DATA COMPILED IN PRIOR PROCEEDINGS

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 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 party GEO and it named the following four firms as top purchasers of glycine: ***. Purchaser questionnaires were sent to these four firms and all four firms (***) provided responses, which are presented below.

1. Have there been any significant changes in the supply and demand conditions for glycine that have occurred in the United States or in the market for glycine in China since January 1, 2016?

Purchaser	Yes / No	Changes that have occurred
***	***	***

Purchaser	Yes / No	Changes that have occurred
***	***	***

Purchaser	Yes / No	Changes that have occurred
***	***	*** .
***	***	*** .

2. Do you anticipate any significant changes in the supply and demand conditions for glycine in the United States or in the market for glycine in China within a reasonably foreseeable time?

Purchaser	Yes / No	Anticipated changes
***	***	*** .
***	***	*** .

Purchaser	Yes / No	Anticipated changes
***	***	***
***	***	***

