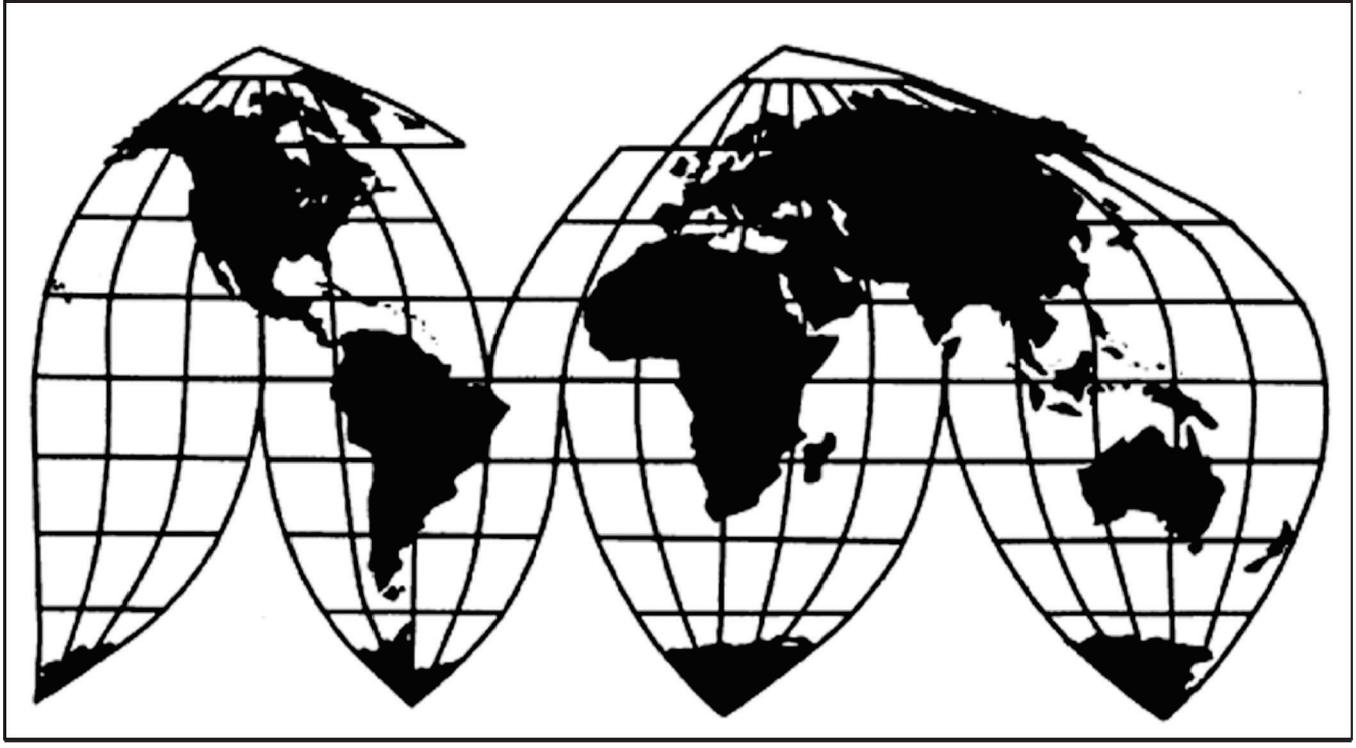
Sodium Gluconate, Gluconic Acid, and Derivative Products from China

Investigation Nos. 701-TA-590 and 731-TA-1397 (Review)

Publication 5498 **March 2024**

U.S. International Trade Commission



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U.S. International Trade Commission

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-590 and 731-TA-1397 (Review)

Sodium Gluconate, Gluconic Acid, and Derivative Products from China

DETERMINATIONS

On the basis of the record[1] developed in the subject five-year reviews, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that revocation of the antidumping and countervailing duty orders on sodium gluconate, gluconic acid, and derivative products from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

BACKGROUND

The Commission instituted these reviews on October 2, 2023 (88 FR 67807) and determined on January 5, 2024 that it would conduct expedited reviews (89 FR 3426, January 18, 2024).

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

Views of the Commission

Based on the record in these five-year reviews, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the antidumping and countervailing duty orders on sodium gluconate, gluconic acid, and derivative products ("GNA products") 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 investigations: On November 30, 2017, PMP Fermentation Products, Inc. ("PMP"), a domestic producer of GNA products, filed antidumping and countervailing duty petitions on imports of GNA products from China.[1] On November 7, 2018, the Commission found that an industry in the United States was materially injured by reason of dumped and subsidized imports of GNA products from China.[2] The U.S. Department of Commerce ("Commerce") issued antidumping and countervailing duty orders on GNA products from China on November 13, 2018.[3]

Current Reviews: On October 2, 2023, the Commission instituted these first five-year reviews of the antidumping and countervailing duty orders on GNA products from China.[4] It received one response to the notice of institution from domestic interested party, PMP, a domestic producer of GNA products.[5] No respondent interested party responded to the notice of institution or otherwise participated in these reviews. On January 5, 2024, the Commission determined that the domestic interested party group response to its notice of institution was adequate and that the respondent interested party group response was inadequate.[6] The

[1] Confidential Report, INV-VV-111 (Dec. 21, 2023) ("CR") at I-1; *Sodium Gluconate, Gluconic Acid, and Derivative Products from China*, Inv. Nos. 701-TA-590 and 731-TA-1397 (Review), USITC Pub. 5498 (Mar. 2024) ("PR") at I-1.

[2] Sodium Gluconate, Gluconic Acid, and Derivative Products from China, Inv. Nos. 701-TA-590 and 731-TA-1397 (Final), USITC Pub. 4834 (Oct. 2018) ("Original Determinations"); Sodium Gluconate, Gluconic Acid, and Derivative Products from China, 83 Fed. Reg. 55739 (Nov. 7, 2018).

[3] Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Antidumping Duty and Countervailing Duty Orders, 83 Fed. Reg. 56299 (Nov. 13, 2018).

[4] 88 Fed. Reg. 67807 (Oct. 2, 2023).

[5] Domestic Industry's Substantive Response to the Notice of Institution, EDIS Doc. 807639 (Nov. 1, 2023) ("Domestic Industry Response") at 1; Domestic Industry's Supplemental Response to the Notice of Institution, EDIS Doc. 808949 (Nov. 20, 2023) ("Domestic Industry Supplemental Response").

[6] Explanation of Commission Determination on Adequacy, EDIS Doc. 812784 (Jan. 29, 2024).

Commission did not find any circumstances that would warrant conducting full reviews and thus determined that it would conduct expedited reviews of the orders.[7]

U.S. industry data are based on information submitted by the domestic interested party in its response to the notice of institution, which is estimated to have accounted for 100 percent of domestic production of GNA products in 2022.[8] U.S. import data and related information are based on Commerce's official import statistics.[9] Foreign industry data and related information are based on information from the original investigations, as well as information submitted by the domestic interested party in these expedited reviews and publicly available information, such as Global Trade Atlas ("GTA") data, gathered by the Commission. Additionally, two purchasers, ***, identified by the domestic interested party as U.S. purchasers of GNA products, responded to the Commission's adequacy phase questionnaire.[10]

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."[11] The Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation under this subtitle."[12] 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.[13]

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[7] Explanation of Commission Determination on Adequacy, EDIS Doc. 812784 (Jan. 29, 2024).

[8] Domestic Industry Response at 16; CR/PR at Table I-2.

[9] CR/PR at Table I-7. Import data for the 2018-2022 period of review ("POR") are based on imports entered under Harmonized Tariff Schedule ("HTS") statistical reporting numbers 2918.16.1000, 2918.16.5010, and 2932.20.5020. *Id.* at Note.

[10] CR/PR at D-3-D-4. PMP did not file comments with the Commission pursuant to 19 C.F.R. § 207.62(d).

[11] 19 U.S.C. § 1677(4)(A).

[12] 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. Dep't of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

[13] *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-

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

> The scope of the orders covers all grades of sodium gluconate, gluconic acid, liquid gluconate, and glucono delta lactone (GDL) (collectively GNA Products), regardless of physical form (including, but not limited to substrates; solutions; dry granular form or powders, regardless of particle size; or as a slurry). The scope also includes GNA Products that have been blended or are in solution with other product(s) where the resulting mix contains 35 percent or more of sodium gluconate, gluconic acid, liquid gluconate, and/or GDL by dry weight.
>
> Sodium gluconate has a molecular formula of $NaC_6H_{11}O_7$. Sodium gluconate has a Chemical Abstract Service (CAS) registry number of 527– 07–1, and can also be called "sodium salt of gluconic acid" and/or sodium 2,3,4,5,6-pentahydroxyhexanoate. Gluconic acid has a molecular formula of $C_6H_{12}O_7$. Gluconic acid has a CAS registry number of 526–95–4, and can also be called 2,3,4,5,6-pentahydroxycaproic acid. Liquid gluconate is a blend consisting only of gluconic acid and sodium gluconate in an aqueous solution. Liquid gluconate has CAS registry numbers of 527–07–1, 526–95–4, and 7732–18–5, and can also be called 2,3,4,5,6-pentahydroxycaproic acid-hexanoate. GDL has a molecular formula of $C_6H_{10}O_6$. GDL has a CAS registry number of 90–80–2, and can also be called d-glucono-1,5-lactone.[14]

GNA products are chemical products derived primarily from corn-based liquid glucose that are used in a wide variety of overlapping end uses, ranging from industrial and agricultural applications to use in the production of food, household, and personal care products. GNA products include sodium gluconate, gluconic acid, liquid gluconate, glucono-delta-lactone (GDL), and subject blends. Sodium gluconate and GDL are sold in dry, white powder form, while gluconic acid and liquid gluconate are sold in a semi-clear liquid form. Sodium gluconate and liquid gluconate contain sodium, while GDL and gluconic acid are sodium-free. When in dry form, all GNA products are white granular powder, with the result that there is little practical

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).

[14] Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Antidumping Duty and Countervailing Duty Orders, 83 Fed. Reg. 56299 (Nov. 13, 2018).

difference between the four different forms: sodium gluconate, gluconic acid, liquid gluconate, and GDL.[15]

GNA products are excellent sequestrates and chelators, and they are non-corrosive (resistant to oxidation), non-toxic, and biodegradable. Because of these properties, GNA products are used in a multitude of industries including concrete admixtures, the food industry, personal care and household products, and in agriculture. In addition to these major sectors, GNA products are also employed in mining, textiles, plastics, de-icing, electroplating, pharmaceuticals, and pulp and paper.[16]

In the original investigations, the Commission defined a single domestic like product corresponding to the range of GNA products within the scope. The Commission found that all GNA products share physical characteristics, were produced in the same facility, were generally interchangeable with substantial overlap in end uses, were perceived by producers and customers as belonging to a family of products, and were sold through comparable channels of distribution.[17]

In the current reviews, the record does not contain any new information indicating that the pertinent characteristics and uses of GNA products has changed since the original investigations so as to warrant revisiting the Commission's domestic like product definition.[18] PMP agrees with the domestic like product definition the Commission adopted in the original investigations.[19] Consequently, we again define the domestic like product as corresponding to the range of GNA products within the 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."[20] 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.

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[15] *See Original Determinations* at 5-6 and CR/PR at I-7-I-15.

[16] CR/PR at I-7-I-15.

[17] Original Determinations, USITC Pub. 4834 at 6-7.

[18] CR/PR at I-7-I-15.

[19] Domestic Industry Response at 1.

[20] 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.

In the original investigations, the Commission defined the domestic industry as PMP, the sole domestic producer of GNA products.[21]

In the current reviews, PMP agrees with the definition of the domestic industry from the original investigations.[22] There are no issues arising under the related parties provision in these reviews.[23] Accordingly, consistent with our definition of the domestic like product, we define the domestic industry as PMP, the sole domestic producer of GNA products.

III. Revocation of the Antidumping and Countervailing Duty Orders 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."[24] The 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."[25] Thus, the likelihood standard is prospective in nature.[26] The U.S. Court of International Trade ("CIT") has found that

[21] Original Determinations, USITC Pub. 4834 at 7.

[22] Domestic Industry Response at 1.

[23] Domestic Industry Response at 1, 23.

[24] 19 U.S.C. § 1675a(a).

[25] SAA at 883-84. 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.

[26] 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.

"likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[27]

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."[28] 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."[29]

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."[30] 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).[31] The statute further provides

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

[28] 19 U.S.C. § 1675a(a)(5).

[29] 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*.

[30] 19 U.S.C. § 1675a(a)(1).

[31] 19 U.S.C. § 1675a(a)(1). Commerce has made no duty absorption findings. *Issues and Decision Memorandum for the Final Results of the First Expedited Sunset Review of the Antidumping Duty Order on Sodium Gluconate, Gluconic Acid, and Derivative Products from the People's Republic of China*, EDIS Doc. 813193 (Feb. 2, 2024).

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.[32]

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.[33] In doing so, the Commission must consider "all relevant economic factors," including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) the potential for product shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products.[34]

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.[35]

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

[32] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

[33] 19 U.S.C. § 1675a(a)(2).

[34] 19 U.S.C. § 1675a(a)(2)(A-D).

[35] *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.

more advanced version of the domestic like product.[36] 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.[37]

The record contains limited new information with respect to the GNA products industry in China. There also is limited information on the GNA products market in the United States during the POR. Accordingly, for our determinations, we rely as appropriate on the facts available from the original investigations, and the limited new information on the record in these first five-year reviews.

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."[38] The following conditions of competition inform our determinations.

1. Demand Conditions

Original Investigations. In the original investigations, the Commission found that GNA products were sold primarily for industrial/institutional and construction end-use categories, followed by food and agriculture, and that U.S. demand for GNA products was closely tied to the demand for the downstream products in which GNA products are used.[39] It also found that there are limited substitutes for GNA products.[40] Market participants reported mixed perceptions of demand trends over the period of investigation ("POI"), which was 2015-2017 and January-June ("interim") of 2017 and 2018.[41] Apparent U.S. consumption of GNA products increased overall by *** percent from 2015 to 2017, decreasing from *** dry pounds in 2015 to

[36] 19 U.S.C. § 1675a(a)(4).

[37] 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.

[38] 19 U.S.C. § 1675a(a)(4).

[39] Original Determinations, USITC Pub. 4834 at 11.

[40] Original Determinations, USITC Pub. 4834 at 12.

[41] Original Determinations, USITC Pub. 4834 at 11-12.

*** dry pounds in 2016, and increasing to *** dry pounds in 2017.[42] It was *** dry pounds in interim 2018, compared to *** dry pounds in interim 2017.[43]

Current Reviews. In the current five-year reviews, the information available indicates that demand for GNA products continues to be closely tied to downstream demand for products and services that incorporate sodium gluconate.[44] Notably, the increased use of GNA products in the construction sector, food and beverage industry, printing, textile dyeing, detergents, metal surface water treatment, and personal care products has increased demand for GNA products.[45] PMP reports that this increased demand can be at least partly attributed to the COVID-19 pandemic, which has made consumers more aware of home and personal hygiene and increased demand for household cleaning products and detergents containing GNA products.[46]

Apparent U.S. consumption was *** dry pounds in 2022, up from *** dry pounds in 2017.[47]

2. Supply Conditions

Original Investigations. In the original investigations, the Commission found that PMP was the largest source of supply of GNA products for the U.S. market, followed by nonsubject imports and subject imports.[48] It also found that the market shares of both the domestic industry and subject imports fluctuated over the POI, while the market share of nonsubject imports declined overall.[49]

Current Reviews. In the current five-year reviews, the majority of apparent U.S. consumption continues to be satisfied by the domestic industry, followed by nonsubject imports and subject imports.[50]

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[42] Original Determinations, USITC Pub. 4834 at 12. Final Investigations, Confidential Version ("Confidential Final Opinion"), EDIS Doc. 809518 (Nov. 2018) at 16.

[43] Original Determinations, USITC Pub. 4834 at 12; Confidential Final Opinion at 16.

[44] Domestic Industry Response at 19.

[45] Domestic Industry Response at 19. PMP argues that demand increased from 2018-2022 before declining in 2023. Domestic Industry Response at 18-19. Responding purchaser *** reports that ***, and *** reports that ***. CR/PR at D-3-4.

[46] Domestic Industry Response at 19.

[47] CR/PR at Table I-8.

[48] Original Determinations, USITC Pub. 4834 at 12.

[49] Original Determinations, USITC Pub. 4834 at 12. Confidential Final Opinion at 16-17.

[50] CR/PR at Table I-8.

The domestic industry accounted for *** percent of apparent U.S. consumption in 2022.[51] PMP continues to be the sole domestic producer of GNA products.[52] Since the original investigations, the domestic industry commenced a *** capital investment project expected to *** PMP's production capacity by 2027 in three phases.[53] PMP completed the first phase of its expansion in September 2023, from which it expects to increase its capacity by at least 20 percent.[54]

Subject imports, the smallest source of supply, accounted for *** percent of apparent U.S. consumption in 2022.[55]

Nonsubject imports were the second largest source of supply, accounting for *** percent of apparent U.S. consumption in 2022.[56] The leading sources of nonsubject imports during the POR were France, India, and Italy.[57]

3. Substitutability and Other Conditions

Original Investigations. In the original investigations, the Commission found that there was a high degree of substitutability between subject imports and the domestic like product and that price was an important factor in purchasing decisions.[58] It observed that while all of PMP's production of GNA products was food grade and met all Food Chemical Codex ("FCC") standards, Chinese producers manufactured both technical grade and food grade GNA products, with at least one Chinese producer meeting FCC standards.[59] According to the Commission, despite all of PMP's product meeting FCC standards, food end uses accounted for only approximately four to five percent of PMP's U.S. sales.[60] The Commission found that both subject imports and the domestic like product were sold to many of the same purchasers, through similar channels of distribution, for a variety of end uses, including agricultural,

[51] CR/PR at I-16, Table I-8.

[52] CR/PR at I-13; Domestic Industry Response at 2.

[53] Domestic Industry Response at 20.

[54] CR/PR at Table I-5. *** *** PMP's *** at a cost of ***. ***, scheduled to commence in ***, will ***. *** start date depends on the completion of *** and will involve ***, completing the move to ***. PMP's workforce is approximately *** percent *** than five years ago and the capital improvements will allow PMP to increase its workforce by *** percent. Domestic Industry Response at 20.

[55] CR/PR at Table I-8.

[56] CR/PR at Table I-8.

[57] CR/PR at Table I-7.

[58] Original Determinations, USITC Pub. 4834 at 12.

[59] Original Determinations, USITC Pub. 4834 at 13-14.

[60] Original Determinations, USITC Pub. 4834 at 14.

industrial, and food end uses.[61] It also found that the price of corn-based liquid glucose, also known as glucose syrup or liquid corn sugar, the primary raw material for the production of GNA products, increased during the POI.[62]

Current Reviews. The record in these reviews contains no new information to indicate that the degree of substitutability between the domestic like product and subject imports or the importance of price in purchasing decisions has changed since the original investigations. PMP argues that given the high degree of substitutability between domestically produced GNA products and subject imports, as well as comparable quality and service terms, price is the primary deciding factor in purchasing decisions.[63] Accordingly, we find that there remains a high degree of substitutability between domestically produced GNA products and subject imports and that price continues to be an important factor in purchasing decisions.

Effective September 24, 2018, GNA products originating in China became subject to an additional 10 percent ad valorem duty under section 301 of the Trade Act of 1974. Effective May 10, 2019, the section 301 duty for GNA products from China was increased to 25 percent.[64]

C. Likely Volume of Subject Imports

1. Original Investigations

In the original investigations, the Commission found that the volume of subject imports was significant both in absolute terms and relative to consumption in the United States.[65] The volume of subject imports was 10.6 million dry pounds in 2015, 9.2 million dry pounds in 2016, and 10.5 million dry pounds in 2017; it was 4.4 million dry pounds in interim 2017 and 4.7 million dry pounds in interim 2018.[66] Subject imports accounted for *** percent of the U.S. GNA products market in 2015, *** percent in 2016, and *** percent in 2017; subject import market share was *** percent in interim 2017 and *** percent in interim 2018.[67]

2. The Current Reviews

The information available indicates that the orders have had a restraining effect on the volume of subject imports, which remained lower than in the original investigations throughout

[61] Original Determinations, USITC Pub. 4834 at 14.
[62] Original Determinations, USITC Pub. 4834 at 14.
[63] Domestic Industry Response at 5-6.
[64] CR/PR at I-6.
[65] Original Determinations, USITC Pub. 4834 at 15.
[66] Original Determinations, USITC Pub. 4834 at 15.
[67] Original Determinations, USITC Pub. 4834 at 15. Confidential Final Opinion at 21.

the POR. The volume of subject imports initially declined from 4.8 million dry pounds in 2018 to 290,000 dry pounds in 2019, before increasing to 566,000 dry pounds in 2020, 739,000 dry pounds in 2021, and 7.0 million dry pounds in 2022.[68] Subject imports accounted for *** percent of apparent U.S. consumption in 2022.[69]

The record in these expedited reviews contains limited information on the subject industry in China. Nonetheless, the information available indicates that subject producers continue to have the ability and incentive to export significant volumes of subject merchandise to the U.S. market in the event of revocation of the orders. PMP identified 43 possible producers of GNA products in China.[70]

The information available indicates that subject producers in China have substantial capacity, including excess capacity, that could be used to increase exports of GNA products to the U.S. market if the orders were revoked.[71] According to a market assessment report submitted by PMP, prepared by Global Information Inc., the subject industry in China accounts for 50 percent of global production of GNA products, with the top five subject producers alone accounting for over 10 percent.[72] This same report identifies ten Chinese producers of GNA products that possess capacities ranging from 60,000 tons to 300,000 tons and totaling 1.2 million tons.[73] PMP cites to the results of a sunset review of the European Union's ("EU's") antidumping duty order on GNA products from China issued by the European Commission ("EC") in April 2023, which found that the estimated total production capacity in China for sodium gluconate was 1,306,800 tons while the estimated total output in China was 701,400 tons, yielding a capacity utilization rate of 54 percent and unused capacity of 605,400 tons. This total excess capacity is equivalent to 11 times apparent U.S. consumption in 2022.[74]

The information available also indicates that subject producers in China have plans to expand their capacity. Citing the results of the EC's sunset review, PMP claims that at least three subject producers have announced plans to expand their capacity by 290,000 tons per year, starting in 2022.[75] PMP also contends that the Chinese government has targeted the sodium gluconate industry for growth, based on provincial policy directives aimed at promoting

[68] CR/PR at Table I-7.
[69] CR/PR at Table I-8.
[70] CR/PR at I-21; Domestic Industry Response at Exhibits B-D.
[71] Domestic Industry Response at 6-11, Exhibit B.
[72] Domestic Industry Response at 6-7, Exhibit A.
[73] Domestic Industry Response at 7, Exhibit A.
[74] Domestic Industry Response at 7.
[75] Domestic Industry Response at 8.

the industry from 2021 through 2025.[76] For example, information from the Jilin province's website indicates that a project of 100,000 tons per year of sodium gluconate was announced; that the output of the Chinese GNA products industry has maintained an aggregate growth rate of nearly 33 percent over the past decade, with a total annual production capacity of more than 600,000 tons; and that the Chinese GNA products industry is among the industries targeted for support in China's "overall plan for the development of strategic emerging industries."[77] PMP claims that the Shandong and Heilongjiang provinces have also issued five-year plans aimed at promoting the production of GNA products in those provinces, based on information from their respective websites.[78]

The information available also indicates that the Chinese industry remains a large exporter of GNA products. According to GTA data concerning GNA products under Harmonized Schedule ("HS") subheadings 2918.16 and 2932.20, which includes GNA products and out-of-scope products, China was the world's largest exporter of such merchandise throughout the POR.[79] These data also show that China's total exports of such merchandise steadily increased during the POR, by quantity, from 522.7 million dry pounds in 2018 to 622.4 million dry pounds in 2022.[80] The market assessment report submitted by PMP indicates that low internal consumption of GNA products in China, combined with an oversupply of GNA products produced in China, resulted in a *** percent increase in Chinese exports of GNA products from 2018 to 2022.[81]

The information available also indicates that the U.S. market remains attractive to subject producers in China. Subject imports maintained a presence in the U.S. market throughout the POR, accounting for *** percent of apparent U.S. consumption in 2022, thereby

[76] Domestic Industry Response at 10.

[77] Domestic Industry Response at 10-11.

[78] Domestic Industry Response at 11.

[79] CR/PR at Table I-13.

[80] CR/PR at Table I-13. According to GTA data, the quantity of Chinese exports of GNA products and out-of-scope products, increased throughout the POR from 552.7 million dry pounds in 2018, to 577.4 million dry pounds in 2019, 602.3 million dry pounds in 2020, 623 million dry pounds in 2021, and 662.4 million dry pounds in 2022.

[81] Domestic Industry Response at 8-9, Exhibit A. According to the same market report, China is progressively growing as the primary source of gluconate ***, with several leading subject producers producing GNA products primarily for export. *Id.* at 9-10, Exhibit A. Specifically, according to the report, Shandong Definly Chemical Co., Ltd. exports GNA products to over 50 countries, encompassing regions such as Australia, Germany, the United States, Turkey, the United Arab Emirates, India, Singapore, and Canada. Shandong Definly Chemical, with a capacity of around 60,000 tons, exports 99 percent of its output to diverse global markets. *Id*. Another producer, *** *Id*.

maintaining ready distribution networks and customers in the United States.[82] GTA data indicate that the United States was the second-largest destination market for Chinese exports of GNA products under HS subheadings 2918.16 and 2932.20 (including GNA products and out-of-scope product) throughout the POR.[83] The information available also indicates that the relatively higher prices available in the U.S. market would provide subject producers with an economic incentive to increase their exports to the United States after revocation.[84] Finally, the antidumping duty order imposed on GNA products from China by the EU in 2010, most recently extended in 2023, would also make the U.S. market relatively more attractive in the event of revocation of the orders.[85]

Given the foregoing, including the significant volume of subject imports during the original investigations, the continued presence of subject imports in the U.S. market during the POR, the subject industry's large capacity, including excess capacity, and exports of GNA products, and the attractiveness of the U.S. market, we find that the volume of subject imports would likely be significant, both in absolute terms and relative to U.S. consumption, if the orders were revoked.[86]

D. Likely Price Effects

1. Original Investigations

In the original investigations, the Commission found that subject import underselling was significant, based on the pervasive underselling at increasing margins and the importance

[82] CR/PR at Table I-8. Domestic Industry Response at 4.

[83] CR/PR at Table I-10.

[84] The average unit value of subject imports in 2022, $0.70 per pound, was *** higher than the prices being offered by Chinese exporters that year according to PMP, ***. CR/PR at Table I-7; Domestic Industry Response at 13.

[85] CR/PR at I-24; Domestic Industry Response at 5, 7.

[86] Although subject imports from China are currently subject to a 25 percent *ad valorem* duty under section 301, neither PMP nor the responding purchasers indicated that this duty would prevent subject imports from entering the U.S. market at significant levels if the orders were revoked. *See, generally,* Domestic Industry Response; CR/PR at D-3-4. Indeed, section 301 duties did not prevent subject imports from increasing irregularly by 48 percent from 2018 to 2022. *Id.* at Table I-7. Given this, as well as the large size and exports of the GNA industry in China, the attractiveness of the U.S. market, and the fact that section 301 duties did not prevent an increase in the volume and market share of subject imports in 2022, we find that the section 301 duties would not likely prevent subject imports from China being significant if the orders were revoked.

The record of these expedited reviews contains no information concerning product shifting or inventories of subject merchandise.

of price to purchasing decisions.[87] It observed that subject imports undersold the domestic like product in all 28 quarterly comparisons, involving reported subject import sales of 23.7 million dry pounds.[88] The Commission further found that the significant volume of low-priced subject imports had depressed U.S. prices to a significant degree, explaining that domestic prices had declined from 2015 to 2017 despite strong demand and rising costs, and increased only after the filing of the petitions.[89] The Commission also found that subject imports prevented price increases for the domestic like product that otherwise would have occurred, as the competitive pressure from the low and falling prices of subject imports prevented PMP from raising prices for its GNA products commensurately with its costs.[90] The Commission also found that several purchasers had been offered subject imports at aggressively low prices, three purchasers had reported that PMP had reduced its prices to compete with subject imports, and six purchasers had reported switching to subject imports due to their lower price.[91]

The Commission rejected respondent's contention that subject imports did not have significant price effects because competition with subject imports was attenuated, with subject imports consisting of a technical grade while the domestic like product satisfied FCC standards.[92] It found that competition was not attenuated by these distinctions because some subject imports also satisfied FCC standards and the majority of PMP's sales of GNA products were to end uses that would not require food grade products.[93]

The Commission also rejected respondent's assertion that competition was attenuated because subject imports were concentrated in agricultural end uses in California.[94] It found that subject imports and domestic GNA products were sold throughout the United States for a variety of end uses and to the same customers. It also found that respondent's claim was based on the experience of a single purchaser, but that purchaser also indicated that price was the primary reason that it had purchased subject imports rather than domestically produced GNA products.[95]

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[87] Original Determinations, USITC Pub. 4834 at 16-17.
[88] Original Determinations, USITC Pub. 4834 at 16.
[89] Original Determinations, USITC Pub. 4834 at 16-17.
[90] Original Determinations, USITC Pub. 4834 at 17.
[91] Original Determinations, USITC Pub. 4834 at 17.
[92] Original Determinations, USITC Pub. 4834 at 18.
[93] Original Determinations, USITC Pub. 4834 at 18.
[94] Original Determinations, USITC Pub. 4834 at 18.
[95] Original Determinations, USITC Pub. 4834 at 18. The purchaser further responded that had subject imports been priced higher than the domestically produced GNA products, it would have purchased from PMP instead. *Id.*

Finally, the Commission rejected respondent's argument that the domestic industry's cost-price squeeze resulted from PMP's manufacturing process and not subject imports, explaining that it based its analysis of price suppression on PMP's actual costs and publicly available information on its raw material costs.[96]

The Commission concluded that subject imports had significant price effects on domestically produced GNA products.[97]

2. The Current Reviews

As discussed in section III.B.3 above, we continue to find a high degree of substitutability between the domestic like product and subject imports and that price remains an important factor in purchasing decisions.

The record in these expedited reviews does not contain new product-specific pricing information. Based on the available information, including the high degree of substitutability between the domestic like product and subject imports, the importance of price in purchasing decisions, and the universal underselling by subject imports in the original investigations, we find that if the orders were revoked, the likely significant volumes of subject imports would likely undersell the domestic like product to a significant degree, as they did in the original investigations.[98] Absent the discipline of the orders, the significant volumes of low-priced subject imports would likely take sales and market share from domestic producers and/or force the domestic industry to cut prices or restrain price increases necessary to cover increasing costs, thereby depressing or suppressing prices for the domestic like product. Consequently, we find that if the orders were revoked, significant volumes of subject imports would likely have significant price effects.

[96] Original Determinations, USITC Pub. 4834 at 18-19.

[97] Original Determinations, USITC Pub. 4834 at 19.

[98] As evidence that significant subject import underselling is likely to recur after revocation, PMP contends that its parent company, Fuso, reports that Chinese Sodium Gluconate exporters are offering GNA products at substantially lower prices, ***, than the AUV of subject imports in the U.S. market, $0.70 per pound, in 2022. Moreover, PMP claims that its customers have confirmed that PMP's main competition is from lower-priced subject imports. Domestic Industry Response at 13.

E. Likely Impact[99]

1. Original Investigations

In the original investigations, the Commission found that subject imports from China had a significant impact on the domestic industry.[100] Although some measures of the domestic industry's performance improved over the POI in an environment of growing demand, including its production, capacity utilization, U.S. shipments, and sales revenues, the industry's financial performance declined as a result of competition with low-priced subject imports.[101] The Commission found that the significant volume of low-priced subject imports had caused the domestic industry to receive less revenue than it would have otherwise by depressing and suppressing prices for the domestic like product.[102]

The Commission rejected respondent's arguments that competition between domestically produced GNA products and subject imports was attenuated, finding that both competed on price throughout the U.S. market, in overlapping end uses and for many of the same customers.[103] It also rejected arguments that PMP was not injured by subject imports because, if adjusted to exclude expenses related to ***, PMP's operating income would have been higher in interim 2018 than in interim 2017.[104] The Commission found that the domestic industry's gross income, net income, and operating income all fell from 2015 through 2017, as subject imports prevented the industry from increasing its prices sufficiently to cover its rising costs.[105] Moreover, it found that even if such expenses were excluded, the fact that the domestic industry would have realized higher operating income in interim 2018 than interim 2017 did not demonstrate that the domestic industry was not materially injured by subject

[99] In its expedited review of the antidumping duty order, Commerce determined that revocation of the order would likely result in the continuation or recurrence of dumping with margins of up to 213.15 percent for China. *Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Final Results of Expedited First Sunset Review of the Antidumping Duty Order*, 89 Fed. Reg. 7369 (Feb. 2, 2024). Commerce also determined that revocation of the countervailing duty order on GNA products from China would likely result in the continuation or recurrence of countervailing subsidies at rates up to 194.67 percent. *Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Final Results of the Expedited First Sunset Review of the Countervailing Duty Order*, 89 Fed. Reg. 7375 (Feb. 2, 2024).

[100] Original Determinations, USITC Pub. 4834 at 22.

[101] Original Determinations, USITC Pub. 4834 at 20-22.

[102] Original Determinations, USITC Pub. 4834 at 22.

[103] Original Determinations, USITC Pub. 4834 at 22.

[104] Original Determinations, USITC Pub. 4834 at 22. Confidential Final Opinion at 34.

[105] Original Determinations, USITC Pub. 4834 at 22-23.

imports.[106] Noting that the domestic industry's gross profits excluded such expenses, the Commission found that the domestic industry's gross profits were higher in interim 2018 than in interim 2017 because PMP was able to raise prices after the filing of the petitions, and that the unit value of gross profits and the ratio of gross profits to net sales were lower in interim 2018 than at the beginning or the POI in 2015 or 2016.[107]

For purposes of non-attribution, the Commission found that nonsubject imports had declined overall in terms of volume and market share during the POI, and consisted largely of GDL, which tended to be higher priced than the sodium gluconate that accounted for most domestic industry and subject import U.S. shipments.[108] Thus, the Commission concluded that nonsubject imports did not cause the adverse price effects attributed to subject imports.[109]

2. The Current Reviews

The record in these expedited reviews contains limited information concerning the domestic industry's performance since the original investigations.

The available information indicates that the domestic industry's performance in 2022 was generally better than in 2017, the last year examined in the original investigations. In 2022, the domestic industry's capacity was *** dry pounds, its production was *** dry pounds, and its capacity utilization was *** percent, which were all higher than in 2017.[110] The industry's U.S. shipments, at *** dry pounds, were higher than in 2017,[111] while its share of apparent U.S. consumption, at *** percent, was lower.[112] The industry's net sales value in 2022, at $***, was higher than in 2017.[113] Its gross profit, at $***, operating income, at $***, and ratio of operating income to net sales, at *** percent, were also higher in 2022 than in 2017.[114] This limited information is insufficient for us to make a finding as to whether the domestic industry is vulnerable to continuation or recurrence of material injury in the event of revocation of the orders.

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[106] Original Determinations, USITC Pub. 4834 at 23.

[107] Original Determinations, USITC Pub. 4834 at 23.

[108] Original Determinations, USITC Pub. 4834 at 23.

[109] Original Determinations, USITC Pub. 4834 at 23.

[110] CR/PR at Table I-6. In 2017, the domestic industry's capacity was *** dry pounds, its production was *** dry pounds, and its capacity utilization was *** percent. *Id.*

[111] CR/PR at Table I-6. The domestic industry's U.S. shipments were *** dry pounds in 2017. *Id.*

[112] CR/PR at Table I-8. The domestic industry's share of apparent U.S. consumption was *** percent in 2017. *Id.*

[113] CR/PR at Table I-6. The industry's net sales were $*** in 2017. *Id*

[114] CR/PR at Table I-6. In 2017, the industry's gross profit was $***, its operating income was $***, and its ratio of operating income to net sales was *** percent.

Based on the information available in these reviews, we find that revocation of the orders would likely result in a significant volume of subject imports that would likely undersell the domestic like product to a significant degree. Given the high degree of substitutability between the domestic like product and subject imports, the importance of price to purchasers, and the universal underselling by subject imports in the original investigations, significant volumes of low-priced subject imports would likely capture sales and market share from the domestic industry and/or significantly depress or suppress prices for the domestic like product. The likely significant volume of subject imports and their adverse price effects would likely have a significant adverse impact on the domestic industry's production, shipments, sales, market share, and revenues, which in turn would have a direct adverse impact on the industry's profitability and employment, as well as its ability to raise capital and make and maintain necessary capital investments.

We have also considered the role of factors other than subject imports, including the presence of nonsubject imports. The information available indicates that nonsubject imports have increased their presence in the U.S. market since the original investigations, increasing their share of apparent U.S. consumption from *** percent in 2017 to *** percent in 2022.[115] Nonetheless, the record provides no indication that the presence of nonsubject imports would prevent subject imports from entering the U.S. market in significant quantities, adversely affecting domestic prices. Given the high degree of substitutability between the domestic like product and subject imports and the importance of price in purchasing decisions,[116] the presence of nonsubject imports in the U.S. market would not prevent the significant volume of dumped and subsidized low-priced subject imports that is likely after revocation from taking market share at least in part from the domestic industry, as well as from nonsubject imports, or from forcing domestic producers to lower their prices or forgo price increases in order to retain market share. For these reasons, we find that any effects of nonsubject imports would not preclude the likely effects on the domestic industry attributable to the subject imports.

In sum, we conclude that if the antidumping and countervailing duty orders on GNA products from China were revoked, subject imports would likely have a significant impact on the domestic industry within a reasonably foreseeable time.

[115] CR/PR at Table I-8.

[116] As noted above, the average unit value of subject imports in 2022, $0.70 per pound, was *** higher than the prices being offered by Chinese exporters that year according to PMP, ***. CR/PR at Table I-7; Domestic Industry Response at 13.

IV. Conclusion

For the foregoing reasons, we determine that revocation of the antidumping and countervailing duty orders on GNA products 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 these reviews

Background

On October 2, 2023, 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 reviews to determine whether revocation of antidumping and countervailing duty orders on sodium gluconate, gluconic acid, and derivative products ("GNA products") from China would likely lead to the continuation or recurrence of material injury to a domestic industry.[2] All interested parties were requested to respond to this notice by submitting certain information requested by the Commission.[3] [4] Table I-1 presents information relating to the background and schedule of this proceeding:

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

Effective date	Action
October 2, 2023	Notice of initiation by Commerce (88 FR 67729, October 2, 2023)
October 2, 2023	Notice of institution by Commission (88 FR 67807, October 2, 2023)
January 5, 2024	Commission's vote on adequacy
February 2, 2024	Commerce's results of its expedited reviews
March 15, 2024	Commission's determinations and views

[1] 19 U.S.C. 1675(c).

[2] 88 FR 67807, October 2, 2023. In accordance with section 751(c) of the Act, the U.S. Department of Commerce ("Commerce") published a notice of initiation of five-year reviews of the subject antidumping and countervailing duty orders. 88 FR 67729, October 2, 2023. 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 investigations 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 reviews. It was filed on behalf of PMP Fermentation Products Inc., a domestic producer of GNA products (referred to herein as "PMP" or "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 or explain deficiencies in their responses and to provide clarifying details where appropriate. A summary of the number of responses and estimates of coverage for each is shown in table I-2.

Table I-2
GNA products: Summary of responses to the Commission's notice of institution

Interested party type	Number	Coverage
U.S. producer	1	100.0%

Note: The U.S. producer coverage figure presented is the domestic interested party's estimate of its share of total U.S. production of GNA products during 2022. Domestic interested party's response to the notice of institution, November 1, 2023, p. 16.

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 expedited or full reviews from PMP. PMP requests that the Commission conduct expedited reviews of the antidumping and countervailing duty orders on GNA products.[5]

[5] Domestic interested party's comments on adequacy, December 12, 2023, p. 1.

The original investigations

The original investigations resulted from petitions filed on November 30, 2017 with Commerce and the Commission by PMP, Peoria, Illinois.[6] [7] On September 21, 2018, Commerce determined that imports of GNA products from China were being sold at less than fair value ("LTFV") and subsidized by the Government of China.[8] The Commission determined on October 31, 2018 that the domestic industry was materially injured by reason of LTFV and subsidized imports of GNA products from China.[9] On November 13, 2018, Commerce issued its antidumping and countervailing duty orders with the final weighted-average dumping margin of 213.15 percent and net subsidy rate of 194.67 percent.[10]

Previous and related investigations

Sodium gluconate has been the subject of one prior countervailing duty investigation in the United States. The Commission conducted a countervailing duty investigation with respect to the European Communities.[11] On June 16, 1981, a petition was filed by Pfizer, Inc. alleging that the European Communities were providing subsidies for the production and exportation of sodium gluconate and that, by reason of imports of this allegedly subsidized merchandise, an industry in the United States was being injured or threatened with material injury.[12] On September 16, 1981, the Commission issued a preliminary affirmative determination with

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[6] Sodium Gluconate, Gluconic Acid, and Derivative Products from China, Inv. Nos. 701-TA-590 and 731-TA-1397 (Final), USITC Publication 4834, October 2018 ("Original publication"), p. I-1.

[7] The preliminary phase of the original investigations also included an antidumping duty investigation on imports of GNA products from France. On January 16, 2018, the Commission determined that there was no reasonable indication that an industry in the United States was materially injured or threatened with material injury by reason of imports of GNA products from France that were alleged to be sold in the United States at less than fair value. The investigation concerning imports of GNA products from France was subsequently terminated. Chairman Rhonda K. Schmidtlein dissented and separately determined that there was a reasonable indication that an industry in the United States was materially injured by reason of imports of GNA products from China and France. 83 FR 3021, January 22, 2018.

[8] 83 FR 47876, September 21, 2018.

[9] 83 FR 55739, November 7, 2018.

[10] 83 FR 56299, November 13, 2018.

[11] The European Communities, a precursor to the European Union, was comprised of three international organizations governed by common institutions and incorporated into the European Union in 1993.

[12] Sodium Gluconate from the European Communities, Inv. No. 701-TA-79 (Preliminary), USITC Publication 1169, July 1981, p. 1.

respect to the countervailing duty investigation regarding imports of sodium gluconate from the European Communities.[13] Subsequently, the Commission suspended the countervailing duty investigation on November 24, 1981, based on an agreement reached between Commerce and Joh A. Benckiser, a German producer and exporter of sodium gluconate that accounted for virtually all of the imported subject merchandise.[14]

Commerce's five-year reviews

Commerce announced that it would conduct expedited reviews with respect to the orders on imports of GNA products from China with the intent of issuing the final results of these reviews based on the facts available not later than January 30, 2024.[15] Commerce publishes its Issues and Decision Memoranda and its final results concurrently, accessible upon publication at https://access.trade.gov/public/FRNoticesListLayout.aspx. 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 and countervailing duty orders on imports of GNA products from China are noted in the sections titled "The original investigations" and "U.S. imports," if applicable.

[13] 46 FR 40839, August 12, 1981.
[14] 46 FR 60288, December 9, 1981.
[15] Letter from Eric B. Greynolds, Director, AD/CVD Operations, Enforcement and Compliance, U.S. Department of Commerce to Nannette Christ, Director of Investigations, November 17, 2023.

The product

Commerce's scope

Commerce has defined the scope as follows:

> *The scope of the orders covers all grades of sodium gluconate, gluconic acid, liquid gluconate, and glucono delta lactone (GDL) (collectively GNA Products), regardless of physical form (including, but not limited to substrates; solutions; dry granular form or powders, regardless of particle size; or as a slurry). The scope also includes GNA Products that have been blended or are in solution with other product(s) where the resulting mix contains 35 percent or more of sodium gluconate, gluconic acid, liquid gluconate, and/or GDL by dry weight.*
>
> *Sodium gluconate has a molecular formula of $NaC_6 H_{11} O_7$. Sodium gluconate has a Chemical Abstract Service (CAS) registry number of 527–07–1, and can also be called "sodium salt of gluconic acid" and/or sodium 2, 3, 4, 5, 6 pentahydroxyhexanoate. Gluconic acid has a molecular formula of $C_6 H_{12} O_7$. Gluconic acid has a CAS registry number of 526–95–4, and can also be called 2, 3, 4, 5, 6 pentahydroxycaproic acid. Liquid gluconate is a blend consisting only of gluconic acid and sodium gluconate in an aqueous solution. Liquid gluconate has CAS registry numbers of 527–07–1, 526–95–4, and 7732–18–5, and can also be called 2, 3, 4, 5, 6-pentahydroxycaproic acid-hexanoate. GDL has a molecular formula of $C_6 H_{10} O_6$. GDL has a CAS registry number of 90–80–2, and can also be called d-glucono-1,5-lactone.*[16]

[16] 83 FR 56299, November 13, 2018.

U.S. tariff treatment

GNA products are currently imported under Harmonized Tariff Schedule of the United States ("HTS") statistical reporting numbers 2918.16.1000, 2918.16.5010, and 2932.20.5020. The merchandise subject to these reviews may also be provided under the following HTS statistical reporting numbers: 2918.16.5050, 3824.99.2900, and 3824.99.9397.[17] The general rate of duty is 6.0 percent ad valorem for HTS statistical reporting number 2918.16.1000 and 3.7 percent ad valorem for HTS statistical reporting numbers 2918.16.5010 and 2932.20.5020.[18] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Effective September 24, 2018, GNA products imported under 2918.16.1000, 2918.16.5010, 2918.16.5050, 3824.99.2900, and 3824.99.9397 originating in China are subject to an additional 10 percent ad valorem duty under section 301 of the Trade Act of 1974. Effective May 10, 2019, the section 301 duty for these statistical reporting numbers was increased to 25 percent.[19]

[17] These tariff classifications contain products outside the scope of these reviews (e.g., calcium gluconate and magnesium gluconate). The general rate of duty is 3.7 percent ad valorem for HTS statistical reporting number 2918.16.5050, 6.5 percent ad valorem for HTS statistical reporting number 3824.99.2900, and 5 percent ad valorem for HTS statistical reporting number 3824.99.9397. USITC, HTS (2023) Basic Revision 11, Publication 5462, September 2023, pp. 29-60, 38-23, 38-26.

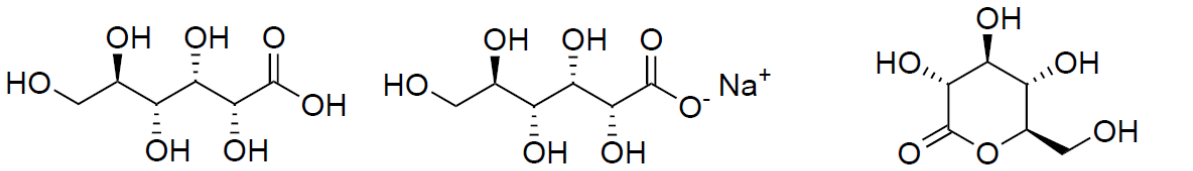
[18] USITC, HTS (2023) Basic Revision 11, Publication 5462, September 2023, pp. 29-60, 29-114.

[19] 83 FR 47974, September 21, 2018; 84 FR 20459, May 9, 2019. See also HTS headings 9903.88.03 and 9903.88.04 and U.S. notes 20(e)–20(g) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2023) Basic Revision 11, Publication 5462, September 2023, pp. 99-III-27–99-III-52, 99-III-301–99-III-302. Goods exported from China to the United States prior to May 10, 2019, and entering the United States prior to June 1, 2019, were not subject to the escalated 25 percent duty (84 FR 21892, May 15, 2019).

Description and uses[20]

The imported products subject to these reviews are collectively referred to as GNA products: gluconic acid ("GA," $C_6H_{12}O_7$), sodium gluconate ("GNA," $NaC_6H_{11}O_7$), glucono-delta-lactone ("GDL," $C_6H_{10}O_6$),[21] (figure I-1) along with liquid gluconate ("LG"),[22] and subject blends. GDL and GNA are sold in dry form, while GA and LG are sold in liquid form (table I-3).

Figure I-1
Chemical structures of GA, GNA, and GDL; LG contains a mixture of GA and GNA



Source: Based on original publication, p. I-9 (figure I-1).

Table I-3
GNA products continuum

Product	Dry	Liquid	Containing Sodium	Sodium Free
GNA	x		x	
LG		x	x	
GA		x		x
GDL	x			x

Source: Based on original publication, p. I-9 (table I-3).

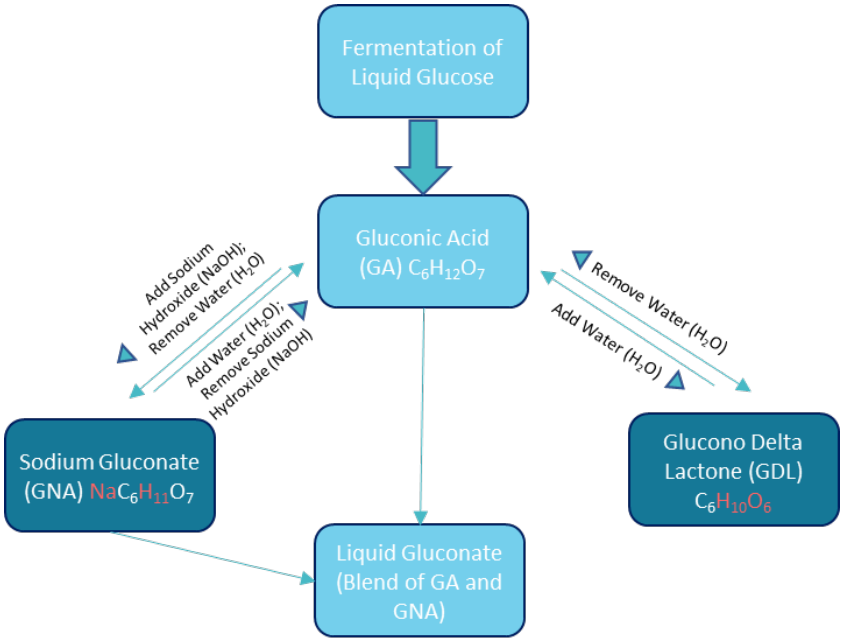
[20] Unless otherwise noted, this information is based on original publication, pp. I-7-I-12 and Investigation Nos. 701-TA-590 and 731-TA-1397 (Final): Sodium Gluconate, Gluconic Acid, and Derivative Products from China, Confidential Report, INV-QQ-109, October 3, 2018 ("Original confidential report"), pp. I-9-I-16.

[21] GDL is a neutral cyclic ester of GA and can also be denoted as glucono-δ-lactone.

[22] LG, for the purposes of this investigation solely, refers to a blend of gluconic acid (GA) and sodium gluconate (GNA). LG sold by PMP usually contains 60 percent or more of the active ingredient. PMP can sell LG that has an active ingredient concentration of up to 90 percent.

These products are imported under different HTS numbers; however, they are closely related to one another (figure I-2),[23] and it is easy to convert from one GNA product to another.[24]

Figure I-2
Relationship and interchangeability between GNA products



Source: Adapted from original publication, p. I-10 (figure I-2).

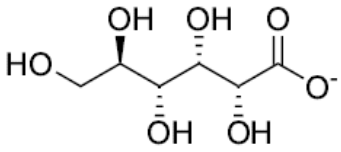
When in dry form, all GNA products are white granular powder, and it is difficult to distinguish between the four different forms: GNA, LG, GA, and GDL. Beyond the physical similarities, the subject products are interchangeable according to the petitioner because GNA products either contain, or can be readily converted to, the active gluconate anion (figure I-3).[25]

[23] Differences in chemical formulas differ to account for sodium and water content.

[24] Starting with GA, if water is removed and the product is dried, GDL is obtained. If water is added to GDL, then GA is obtained. If sodium hydroxide is added to GA, and then dried, the resulting product is GNA.

[25] An anion is an ionic species having negative charge.

Figure I-3
Chemical structure of gluconate anion



gluconate anion

Source: NIH TOXNET "Gluconate ion," https://chem.nlm.nih.gov/chemidplus/rn/608-59-3,retrieved November 9, 2023.

GNA products are excellent sequestrates and chelators.[26] GNA products are also noted for being non-corrosive (resistant to oxidation), non-toxic, and biodegradable. These properties make GNA products of great use in a multitude of industries including concrete admixtures, the food industry, personal care and household products, and in agriculture. In the concrete admixture industry, GNA products are used to reduce water, improve resistance to freeze-thawing, and retard the setting of concrete. GNA products are also utilized in the food industry as a debitterant in artificial sweeteners, as an ingredient in soft cheeses and sausages, and as a salt substitute.[27] In the personal care and household products industries, GNA products are utilized as chelators. GNA products soften the water in dishwasher detergents and act as an anti-redeposition agent. They increase lather in shampoo and other cleaners, and in toothpaste, GNA sequesters calcium, assisting in the prevention of gingivitis. GNA products also have applications in the agricultural sector, where the product is used to enhance the uptake of micronutrients from the soil to the plant.[28] In addition to these major sectors, GNA is also employed in mining, textiles, plastics, de-icing,[29] electroplating, pharmaceuticals, and pulp and paper.[30] PMP argues that all GNA products can be used for any application that end users

[26] GNA products are noteworthy chelates and are useful in eliminating interference from calcium, iron, copper, aluminum, and other "heavy metals." Sequestrates form a stable compound with an ion and are sometimes referred to as chelants. A chelant binds to metal ions and once a metal ion is bound to a chelator the metal ion can no longer form new deposits.

[27] GDL is widely used in tofu production.

[28] Plants naturally make GA for the purposes of micronutrient uptake and the addition of GNA products to the fertilizer puts less stress on the plant and assists in better overall yields.

[29] As of 2018, use of GNA products, specifically GNA, has grown in the past several years for use in de-icing, and demand in this sector is expected to grow significantly.

[30] FDA lists GNA as a generally recognized as safe (GRAS) sequestrant. FDA Select Committee on GRAS Substances Database, https://www.accessdata.fda.gov/scripts/fdcc/?set=SCOGS&sort=Sortsubstance&order=ASC&startrow=1&type=basic&search=gluconate, retrieved November 7, 2023.

ultimately determine which member of the GNA product family to use depending on their particular needs and desired properties.

Out of the four subject products, GDL has the unique property of being able to adjust the pH of a solution progressively over time as a function of temperature. When other organic acids in powder from (e.g., lactic acid) are added to water, the acid will hydrolyze immediately, while GDL, by comparison, hydrolyzes progressively. This property makes GDL desirable for use in the food industry.

The majority of PMP's domestic sales of GNA products consist of GNA, not LG or GA. All of PMP's GNA products meet Food Chemical Codex (FCC) standards.[31] PMP contended in 2018 that it is likely that Chinese produced GNA products meet FCC standards due to the basic quality levels needed for of the fermentation of glucose. Respondant Valudor states that the vast majority of subject product imports consisted of technical grade sodium gluconate that does not meet FCC standards.[32] Comparison of the product specification sheets from the petitioner and the respondent demonstrate that the *** domestic GNA and ***[33] imported GNA *** meet the standards defined in the FCC, as outlined in table I-4.

[31] FCC certification indicates that the GNA products meet purification levels and standards that are accepted by the FDA. FCC is a collection of internationally recognized standards for the purity and identity of ingredients. FCC, "Food Chemicals Codex (FCC)," https://www.foodchemicalscodex.org/, retrieved November 27, 2023.

[32] Beyond FCC specifications, respondents state that Chinese food grade GNA products "generally fail" to meet U.S. food safety regulations such as Foreign Supplier Verification Program (FSVP).

[33] ***.

Table I-4
Comparison of GNA Technical Data Sheets to FCC Acceptance Criteria

* * * * * * *

Source: Original confidential report, p. I-15 (table I-4).

Note: This information is based on technical control sheets provided during the original investigations in 2018.

Corn, specifically corn syrup, is a major feedstock in the production of GNA products, and non-GMO certification can be obtained for the subject merchandise. PMP currently has a "non-GMO statement" and PMP's corn syrup supplier also has a "non-GMO statement," but PMP's GNA products are not certified as non-GMO. PMP customers to date have accepted the statement to be equivalent to the certification.[34] [35]

Manufacturing process[36]

As described above, the four in-scope products are closely related. All in-scope GNA products are derived from GA, which is derived from glucose. GA is the precursor to GNA, while GDL is a purified lactone form of GA (crystals are grown from GA), and LG represents a mixture of GA and GNA. PMP is the sole domestic producer of GNA products[37] and describes the production of GNA products as four processes that branch out from a single fermenter (figure I-4).

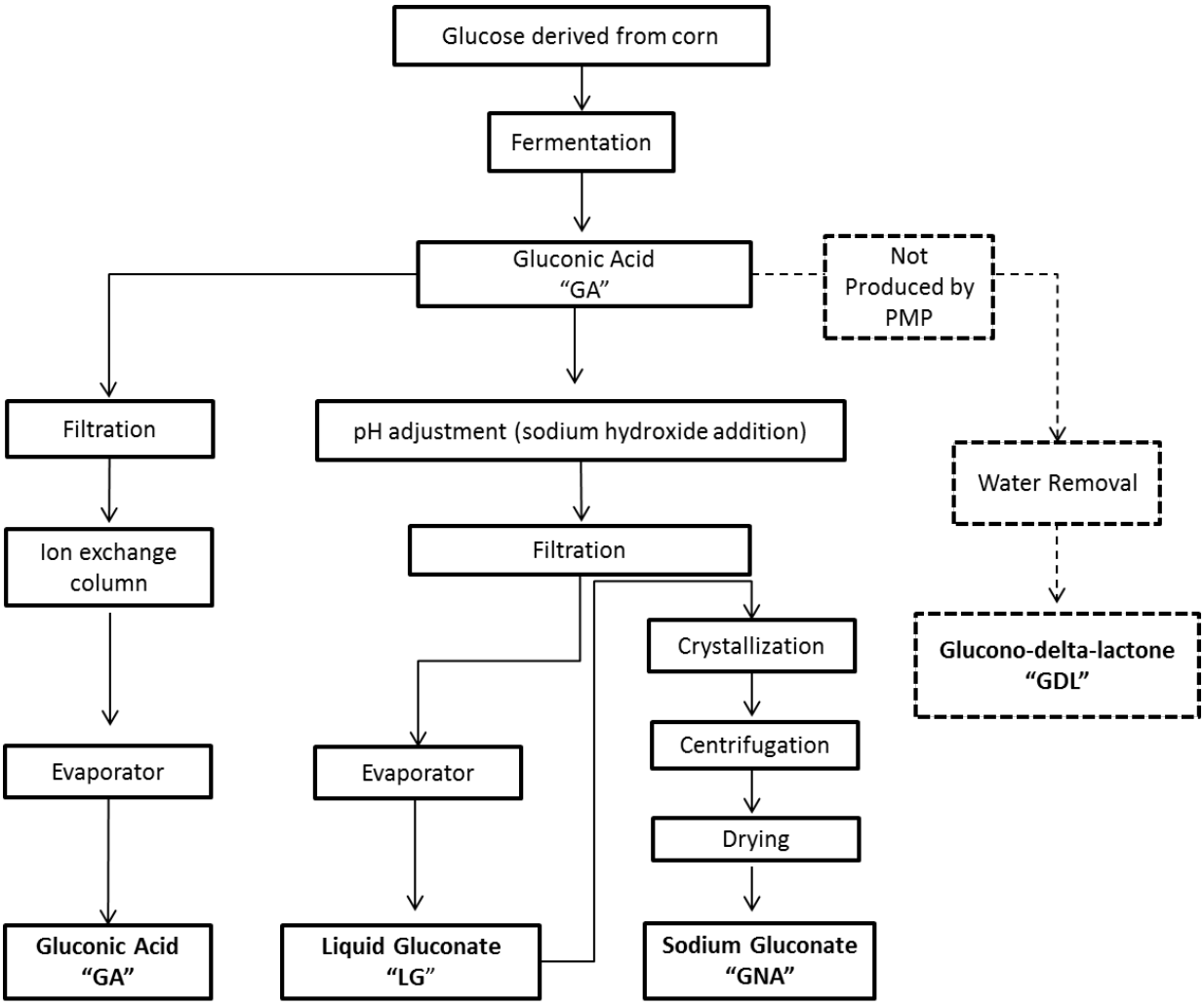
[34] It should be noted that GNA products are not solely used in food or for human consumption; there are a fair number of industrial uses for GNA products that do not benefit from nor necessitate from non-GMO certification.

[35] GMO-free product serves a niche market in the United States.

[36] Unless otherwise noted, this information is based on original publication, pp. I-12-I-18.

[37] PMP does not produce GDL. There has not been a U.S. manufacturer of GDL since 2007.

Figure I-4
GNA products: PMP production flowchart



Source: Based on original publication, p. I-3 (figure I-4).

The specific downstream processes for GA, LG, and GNA at PMP are detailed as follows. First, GA is produced through the fermentation of glucose.[38] Glucose can be obtained through the hydrolysis of carbohydrates; liquid corn sugar is the most cost-efficient and commonly used source. Industrially, glucose is commonly produced through the introduction of a fungus, typically *Asper Nigelus*, to a medium containing liquid corn syrup.[39] The fungus converts glucose

[38] Once fermentation is complete, the liquid is removed and the subsequent product can be used to produce GA, LG, or GNA products.

[39] Air flow, air pressure, agitation, pH and temperature are controlled in the main fermenter to maintain optimum growing conditions for the fungus.

into GA through oxidative fermentation.[40] [41] After the completion of the oxidative fermentation, GA is filtered to remove impurities and improve color. The product is then run through an ion exchange column to exchange sodium ions with hydrogen ions, yielding a diluted concentration of GA. This mixture is then run through an evaporator to achieve the desired concentration of GA.

For the production of LG, GA is diverted to a different production stream and the pH is adjusted with sodium hydroxide (NaOH).[42] The resulting chemical reaction yields LG.[43] This mixture is filtered to remove impurities and to improve color, and it is subsequently run through an evaporator to achieve a variety of concentrations depending on the desired specifications for the product. Imports of LG are presumed by petitioner to be minimal due to the high liquid content and the costs associated with transport.

For the production of GNA, LG is filtered and passed through an evaporator and into a crystallizer. With the introduction of heat, vacuum, and agitation, a supersaturated solution or slurry is achieved. The resulting slurry is discharged to a centrifuge which removes the majority of the excess water from the crystals. The crystals are then dried, and subsequently sifted for packaging. There are no intermediate products in the production of sodium gluconate from gluconic acid.[44]

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[40] Oxidative fermentation is the most common production method, but glucose can also be chemically oxidized. For example, Zhejiang Tianyi Food Additives reportedly utilizes a catalytic oxidative method which is reported to be a more environmentally friendly method; Shi et. Al, "Oxidation of Glucose Using Mono- and Bimetallic Catalysts under Base-Free Conditions," November 23, 2018, http://dx.doi.org/10.1021/acs.oprd.8b00302.

[41] Chemically oxidized GNA products produce what PMP refers to as the only instance of "technical grade," products produced through the process of catalytic conversion, which are not imported into the United States.

[42] Also known as caustic soda. Caustic soda is typically produced at chlor-alkali plants, along with the production of chlorine. In 2018, Chlor-alkali plants in China were running at reduced capacity due to decreased demand for chlorine coupled with stricter environmental norms being enforced by the Chinese government. Early September 2023 saw caustic soda pricing trending upwards in China due to reduced production rates and tight supply. Conversely, during the same period, the United States and Europe increased capacity and oversupply contributing to lower prices for caustic soda in those regions. Figueroa, "Caustic Soda Market Faces Challenges in the US, EU and China," September 11, 2023, https://www.chemanalyst.com/NewsAndDeals/NewsDetails/caustic-soda-market-faces-challenges-in-the-us-eu-and-china-price-oscillates-entering-19564#:~:text=Contradictory%2C%20the%20Caustic%20Soda%20prices,supplies%20amidst%20reduced%20production%20rates.

[43] LG is essentially the blending of GA and GNA.

[44] Recovered liquid contains some active ingredient and is also referred to as the "mother liquor," which is recycled back to the beginning of the process in the feedstock. Once the mother liquor is no

(*continued*...)

GDL[45] is separated from GA by crystallization through the removal of water.[46] GDL can subsequently be converted back to GA upon the addition of water.[47]

The production of GNA products is performed as a continuous fermentation process. A variety of packages are available for GA, GDL, GNA, and LG, including: paper bags, fiber drums, and flexible intermediate bulk containers ("FIBC"). For powdered products, GNA and GDL, the most commonly imported products, packages are usually sold in 25 kilogram (small) or 1,000 kilogram (large) packs.[48]

(…*continued*)

longer useful for the production process (dirty, not enough active ingredient present, etc.), the mother liquor is discharged. This discharged product is sold to the concrete admixture industry and is sold in liquid form.

[45] Also known as glucono-1,5-Lactone.

[46] GDL is sometimes referred to as the dry form of GA. Jungbunzlauer "Glucono-delta-Lactone: General Information" http://www.jungbunzlauer.com/en/products/gluconates/glucono-delta-lactone.html, retrieved November 27, 2023.

[47] In aqueous solutions, GDL rapidly dissolves and slowly hydrolyzes to GA. In an aqueous solution, there is equilibrium between gluconic acid and the delta and gamma lactones.

[48] PMP also sells 50 pound and 25 kg lined, multi-walled paper bags or 1-ton bulk bags of GNA. GA is packaged in 55-gallon, 555 lb. net weight plastic drums, 2500lb totes. LG (of varying equivalences of sodium gluconate) are packed in 55 gallon (600 pound) plastic drums or 2500, 2700, and 2750 pound totes/bulkdrums PMP, "Sodium Gluconate," https://www.pmpinc.com/sodium-gluconate, retrieved November 27, 2023; PMP, "Gluconic Acid," https://www.pmpinc.com/gluconic-acid, retrieved November 27, 2023; PMP, "Liquid Gluconate," https://www.pmpinc.com/sodium-gluconate, retrieved November 27, 2023.

The industry in the United States

U.S. producers

During the final phase of the original investigations, the Commission received a U.S. producer questionnaire response from one firm, which accounted for *** percent of production of GNA products in the United States during 2017.[49]

In response to the Commission's notice of institution in these current reviews, the domestic interested party identified itself as the sole known and currently operating U.S. producer of GNA products. One firm providing U.S. industry data in response to the Commission's notice of institution accounted for 100.0 percent of production of GNA products in the United States during 2022.[50]

Recent developments

Table I-5 presents developments in the U.S. industry since the Commission's original investigations.[51]

Table I-5
GNA products: Developments in the U.S. industry

Item	Firm	Event
Expansion	PMP	September 2023: First phase of expansion completed. Expected that capacity will increase by at least 20 percent. This is the first of three phases; expected completion date for the full project is 2027.

Source: PMP, "Expansion," https://www.pmpinc.com/news?view=article&id=156:news-sample-2&catid=86:news, September 2023.

Note: The timeline for the next two phases of the plant expansion have not been publicly disclosed. ***.

[49] Original confidential report, p. III-1.
[50] Domestic interested party's response to the notice of institution, November 1, 2023, p. 16.
[51] For recent developments in tariff treatment, please see "U.S. tariff treatment" section.

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 reviews.[52] Table I-6 presents a compilation of the trade and financial data submitted from all responding U.S. producers in the original investigations and current five-year reviews.

Table I-6
GNA products: Trade and financial data submitted by U.S. producers, by period

Quantity in 1,000 dry pounds; value in 1,000 dollars; unit value in dollars per dry pound; ratio in percent

Item	Measure	2015	2016	2017	2022
Capacity	Quantity	***	***	***	***
Production	Quantity	***	***	***	***
Capacity utilization	Ratio	***	***	***	***
U.S. shipments	Quantity	***	***	***	***
U.S. shipments	Value	***	***	***	***
U.S. shipments	Unit value	***	***	***	***
Net sales	Value	***	***	***	***
COGS	Value	***	***	***	***
COGS to net sales	Ratio	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***
SG&A expenses	Value	***	***	***	***
Operating income or (loss)	Value	***	***	***	***
Operating income or (loss) to net sales	Ratio	***	***	***	***

Source: For the years 2015-17, data are compiled using data submitted in the Commission's original investigations. For the year 2022, data are compiled using data submitted by domestic interested party. Domestic interested party's response to the notice of institution, November 1, 2023, pp. 16-17.

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

[52] 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.[53]

In its original determinations, the Commission defined a single domestic like product corresponding to the range of sodium gluconate, gluconic acid, and derivative products within Commerce's scope. Also in its original determinations, the Commission defined the domestic industry as PMP, the sole domestic producer of the domestic like product during the original investigations.[54]

U.S. importers

During the final phase of the original investigations, the Commission received U.S. importer questionnaires from eight firms, which accounted for the vast majority total U.S. imports of GNA products from China during 2015-17.[55] Import data presented in the original investigations are based on official Commerce statistics.

Although the Commission did not receive responses from any respondent interested parties in these current reviews, in its response to the Commission's notice of institution, the domestic interested party provided a list of 65 potential U.S. importers of GNA products.[56]

[53] Section 771(4)(B) of the Tariff Act of 1930, 19 U.S.C. § 1677(4)(B).
[54] 88 FR 67807, October 2, 2023.
[55] Original publication, p. IV-1.
[56] Domestic interested party's supplemental response to the notice of institution, November 20, 2023, exh. 1.

U.S. imports

Table I-7 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 2022 imports by quantity).

Table I-7
GNA products: U.S. imports, by source and period

Quantity in 1,000 dry pounds; value in 1,000 dollars; unit value in dollars per dry pound

U.S. imports from	Measure	2018	2019	2020	2021	2022
China (subject)	Quantity	4,758	290	566	739	7,046
France	Quantity	7,402	10,587	14,424	10,562	16,789
India	Quantity	89	323	5,187	1,112	13,204
Italy	Quantity	3,045	7,283	5,100	5,500	7,499
All other sources	Quantity	95	263	85	86	2,005
Nonsubject sources	Quantity	10,631	18,457	24,796	17,260	39,496
All import sources	Quantity	15,389	18,747	25,362	17,999	46,542
China (subject)	Value	2,830	1,500	1,693	1,888	4,964
France	Value	5,509	7,323	9,347	8,121	12,617
India	Value	52	170	2,328	532	11,201
Italy	Value	2,533	5,331	4,073	4,601	8,135
All other sources	Value	117	146	125	155	907
Nonsubject sources	Value	8,210	12,970	15,873	13,410	32,860
All import sources	Value	11,040	14,470	17,566	15,298	37,825
China (subject)	Unit value	0.59	5.16	2.99	2.56	0.70
France	Unit value	0.74	0.69	0.65	0.77	0.75
India	Unit value	0.58	0.53	0.45	0.48	0.85
Italy	Unit value	0.83	0.73	0.80	0.84	1.08
All other sources	Unit value	1.23	0.55	1.47	1.81	0.45
Nonsubject sources	Unit value	0.77	0.70	0.64	0.78	0.83
All import sources	Unit value	0.72	0.77	0.69	0.85	0.81

Source: Compiled from official Commerce statistics for HTS statistical reporting numbers 2918.16.5010, 2932.20.5020, and 2918.16.1000, accessed November 13, 2023.

Note: 50 percent of HTS statistical reporting number 2918.16.1000 was used as a conversion rate from liquid to dry weight.

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

Apparent U.S. consumption and market shares

Table I-8 presents data on U.S. producers' U.S. shipments, U.S. imports, apparent U.S. consumption, and market shares.

Table I-8
GNA products: Apparent U.S. consumption and market shares, by source and period

Quantity in 1,000 dry pounds; value in 1,000 dollars; shares in percent

Source	Measure	2015	2016	2017	2022
U.S. producers	Quantity	***	***	***	***
China (subject)	Quantity	10,553	9,246	10,517	7,046
Nonsubject sources	Quantity	14,456	11,673	12,821	39,496
All import sources	Quantity	25,009	20,919	23,338	46,542
Apparent U.S. consumption	Quantity	***	***	***	***
U.S. producers	Value	***	***	***	***
China (subject)	Value	6,640	4,867	6,991	4,964
Nonsubject sources	Value	11,509	9,041	9,305	32,860
All import sources	Value	18,148	13,909	16,296	37,825
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 2015-17, data are compiled using data submitted in the Commission's original investigations. For the year 2022, 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 2918.16.5010, 2932.20.5020, and 2918.16.1000, accessed November 13, 2023.

Note: 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.

Note: 50 percent of HTS statistical reporting number 2918.16.1000 was used as a conversion rate from liquid to dry weight.

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

The industry in China

Producers in China

During the final phase of the original investigations, the Commission received foreign producer/exporter questionnaires from five firms, which accounted for the vast majority of production of GNA products in China at that time. These firms' exports to the United States accounted for the majority of U.S. imports of GNA products from China in 2017.[57]

Although the Commission did not receive responses from any respondent interested parties in these five-year reviews, the domestic interested party provided a list of 43 possible producers of GNA products in China.[58]

Recent developments

Table I-9 presents developments in the Chinese industry since the Commission's original investigations. Since the original investigations, sodium gluconate remains covered by a number of plans, directives, and other documents focused on chemicals, including food additives, which are issued at the national, regional and municipal levels.[59]

[57] Original publication, pp. VII-2-VII-3.

[58] Domestic interested party's supplemental response to the notice of institution, November 20, 2023, exh. 2.

[59] Gluconates are also used more broadly in chemical industry the including the petrochemical sector. More specifically, within the agriculture sector, policy measures set out to "promote the coordinated development of the intensive processing of agricultural products with their primary processing and comprehensive use and ensure connexion with upstream and downstream industries such as the production of specific raw materials." European Commission, "Commission Implementing Regulation (EU) 2023/752," April 2023, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R0752&from=EN, L 100/24.

Table I-9
GNA products: Developments in the Chinese industry

Item	Firm	Event
Announced Development	Jilin Province	December 16, 2021: In the 14th Five-Year Plan (FYP) for the Development of Strategic Emerging Industries, a project of 100,000 tonnes/year of sodium gluconate was announced.
Announced Development	Heilongjiang province	June 14, 2021: The 14th FYP on Developing Corn Processing Industry outlines creation of industrial clusters in the province's corn processing areas, including the producers of sodium gluconate. The planned output for 2021 3.4 million tons of corn processing capacity, with 1.8 million tons of processed corn starch—target output value in 2021 was set at 10 billion yuan.
New entrant	Heilongjiang Zhonglang Biotech Co., Ltd.	In their own review for the implementation anti-dumping duty on imports of sodium gluconate, published in 2023, the European Commission, noted this firm as a "newcomer" state own enterprise (SOE) that entered the market.
Expansion	BBCA Biochemical	2022: In their own review for the implementation anti-dumping duty on imports of sodium gluconate, published by the European Commission in 2023, it was noted that this firm had a planned capacity expansion of 60,000 metric tons.
Expansion	Shandong Fuyang Biotechnology (through Dezhou Heyang Biotechnology)	2022: In their own review for the implementation anti-dumping duty on imports of sodium gluconate, published by the European Commission in 2023, it was noted that this firm had a planned for capacity expansion of 200,000 metric tons.
Expansion	Tongliao Zhongyuan Biological Development	2022: In their own review for the implementation anti-dumping duty on imports of sodium gluconate, published by the European Commission in 2023, it was noted that this firm had a planned for capacity expansion of 30,000 metric tons.

Source: European Commission, "Commission Implementing Regulation (EU) 2023/752," April 2023, L100/24, L100/31, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R0752&from=EN; Ministry of Agriculture and Rural Affairs of the People's Republic of China, "With a processing capacity of 3.4 million tons and an output value of nearly 10 billion yuan, Qinggang County's intensive processing has 'reborn' corn," June 2022, http://www.moa.gov.cn/xw/qg/202206/t20220614_6402372.htm; General Office of Jilin Provincial People's Government, "About the General Office of the People's Government of Jilin Province Issuing the development of strategic emerging industries in Jilin Province," December 2021, http://xxgk.jl.gov.cn/szf/gkml/202112/t20211227_8357122.html, Ji Zheng Ban Fa 2021 No. 55.

Note: Heilongjiang Zhonglang Biotech Co., Ltd., was added based on the European Union Commission Implementing Regulation (EU) 2023/752 report. On Alibaba there are several suppliers of sodium gluconate in China that are listed less than a year, but it is difficult to know if they are new producers/production. See for example, https://xzsanxiyuan.en.alibaba.com/company_profile.html?spm=a2700.shop_index.88.25.

Exports

Table I-10 presents export data for HS subheadings 2918.16 and 2932.20, categories that include GNA products and out-of-scope products, from China (by export destination in descending order of quantity for 2022).

Table I-10
GNA products: Quantity of exports from China, by destination and period

Quantity in 1,000 pounds

Destination market	2018	2019	2020	2021	2022
India	94,407	109,280	127,440	118,672	143,617
United States	32,016	27,846	32,065	36,362	35,311
Brazil	22,422	24,470	28,742	32,135	34,703
Japan	31,889	31,669	31,102	32,498	34,487
Vietnam	24,357	27,903	27,960	28,682	33,216
Mexico	25,062	22,502	25,016	24,841	30,175
South Korea	23,751	27,122	25,517	27,674	26,702
Taiwan	21,642	25,434	26,888	22,818	24,600
Egypt	12,702	11,842	11,247	13,477	21,067
Indonesia	17,912	16,939	15,776	15,501	20,437
All other destination markets	246,552	252,379	250,537	270,309	258,072
All destination markets	552,712	577,388	602,289	622,967	662,387

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS subheadings 2918.16 and 2932.20, accessed December 19, 2023. These data may be overstated as HS subheadings 2918.16 and 2932.20 may contain products outside the scope of these reviews.

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

Third-country trade actions

An antidumping investigation was initiated on November 30, 2009, and an antidumping duty order was implemented in the European Union on October 25, 2010, on imports of dry sodium gluconate from China.[60] The antidumping duty rates imposed were 5.6 percent on Shandong Kaison Biochemical Co. Ltd., 27.1 percent on Qingdao Kehai Biochemistry Co. Ltd., and 53.2 percent on all other Chinese firms.[61] The antidumping duty order was extended by the European Union in January 2017, and again in April 2023.[62]

The global market

According to published sources, global capacity in 2023 was *** metric tons, global production was *** metric tons, and global apparent consumption was *** metric tons,[63] shown in table I-11.[64] The average annual consumption growth rate from 2023-28 is forecasted to be *** percent.[65] World production is largely centered in China *** metric tons, Europe *** metric tons, and the United States *** metric tons with some production in Asia *** metric tons, *** as outlined in table I-11.[66] The consumption of gluconates in 2022 was *** metric tons for the United States, *** metric tons for Europe, *** metric tons for China.[67] World consumption of gluconates by

[60] Council Implementing Regulation (EU), No 965/2010 of 25 October 2010, Official Journal of the European Union, L 282, October 28, 2010, p. 24.

[61] Council Implementing Regulation (EU), No 965/2010 of 25 October 2010, Official Journal of the European Union, L 282, October 28, 2010, p. 27.

[62] Semi-Annual Report Under Article 16.4 of the Agreement, European Union, October 19, 2017, World Trade Organization Committee on Anti-Dumping Practices, p. 10; WTO, "Trade Remedies Data Portal— ORIGINAL INVESTIGATION AD544 CN," https://trade-remedies.wto.org/en/antidumping/investigations/investigation/eec-ad544-cn-1, accessed November 9, 2023.

[63] ***. *Chemical Economics Handbook*: Chelating Agents, IHS, June 2023, pp. 17-18.

[64] Gluconates include gluconic acid, sodium gluconate, and other gluconates but ***. Ibid.

[65] Ibid.

[66] *Chemical Economics Handbook*: Chelating Agents, IHS, June 2023, p. 18.

[67] Ibid.

region in 2023 is shown in figure I-5, and consumption of hydroxycarboxylic acids and salts by application in major regions is outlined in table I-12.[68]

Outside of China there are a limited number of producers of GNA products. Jungbunzlauer and Roquette are the primary producers of gluconic acid and its salts in Europe. Roquette, in Italy, produces both GA and its salts (*** metric tons), which comprises approximately *** percent of European production.[69] Historically, Roquette has also produced GDL, and has reportedly supplied PMP with GDL in the past. Mihwa Co., Ltd., in South Korea, produced approximately *** metric tons of GA and GNA in 2023.[70]

[68] *** *Chemical Economics Handbook*: Chelating Agents, IHS, June 2023, pp. 19.

[69] *Chemical Economics Handbook:* Chelating Agents, IHS, June 2023, pp. 108.

[70] Mihwa does not supply GDL; Mihwa Co. Ltd. "Products," http://mhchem.co.kr/products-e.htm, retrieved November 8, 2023. *Chemical Economics Handbook:* Chelating Agents, IHS, June 2023, p. 209.

Table I-11
GNA products: World supply and demand for gluconates, 2023

* * * * * * *

Source: Adapted from *Chemical Economics Handbook*: Chelating Agents, IHS, June 2023, p. 18.

Note: Data were compiled April 22, 2023.

Figure I-5
World consumption of gluconates by region, 2023

* * * * * * *

Source: *Chemical Economics Handbook*: Chelating Agents, IHS, June 2023, p. 19.

Note: Data were compiled April 22, 2023.

Table I-12
Consumption of hydroxycarboxylic acids and salts by major region and application, 2023

* * * * * * *

Source: Adapted from *Chemical Economics Handbook*: Chelating Agents, IHS, June 2023, p. 21.

Note: Data compiled April 22, 2023. ***.

Table I-13 presents global export data for HS subheadings 2918.16 and 2932.20, categories that include GNA products and out-of-scope products (by source in descending order of quantity for 2022).

Table I-13
GNA products: Quantity of global exports by country and period

Quantity in 1,000 pounds

Exporting country	2018	2019	2020	2021	2022
China	552,712	577,388	602,289	622,967	662,387
France	65,869	60,760	62,214	95,430	87,010
United States	39,365	33,095	32,916	37,318	39,253
Netherlands	9,991	10,174	8,948	16,034	30,813
United Kingdom	25,730	21,184	15,554	25,194	28,797
India	9,269	10,209	14,724	14,272	28,030
Japan	24,655	24,605	21,958	25,060	24,360
Germany	16,834	15,290	13,694	15,187	12,924
Spain	7,134	6,687	8,922	9,285	9,510
Belgium	6,186	8,886	9,820	8,777	9,205
All other exporters	92,035	75,809	46,568	52,187	26,868
All reporting exporters	849,778	844,087	837,607	921,711	959,034

Source: Global Trade Information Services, Inc., Global Trade Atlas, HS subheadings 2918.16 and 2932.20, accessed December 19, 2023. These data may be overstated as HS subheadings 2918.16 and 2932.20 may contain products outside the scope of these reviews.

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
88 FR 67729 October 2, 2023	*Initiation of Five-Year (Sunset) Reviews*	https://www.govinfo.gov/content/pkg/FR-2023-10-02/pdf/2023-21708.pdf
88 FR 67807 October 2, 2023	*Sodium Gluconate, Gluconic Acid, and Derivative Products From China; Institution of Five-Year Reviews*	https://www.govinfo.gov/content/pkg/FR-2023-10-02/pdf/2023-21290.pdf

APPENDIX B

COMPANY-SPECIFIC DATA

* * * * * * *

APPENDIX C

SUMMARY DATA COMPILED IN PRIOR PROCEEDINGS

Table C-1
GNA products: Summary data concerning the U.S. market, 2015-17, January to June 2017, and January to June 2018
(Quantity=1,000 dry pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per dry pound; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. imports from:									
China:									
Quantity	10,553	9,246	10,517	4,404	4,737	(0.3)	(12.4)	13.7	7.6
Value	6,640	4,867	6,991	3,406	2,754	5.3	(26.7)	43.6	(19.2)
Unit value	$0.63	$0.53	$0.66	$0.77	$0.58	5.6	(16.3)	26.3	(24.8)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	14,456	11,673	12,821	6,881	4,789	(11.3)	(19.3)	9.8	(30.4)
Value	11,509	9,041	9,305	4,849	3,686	(19.1)	(21.4)	2.9	(24.0)
Unit value	$0.80	$0.77	$0.73	$0.70	$0.77	(8.8)	(2.7)	(6.3)	9.2
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	25,009	20,919	23,338	11,284	9,526	(6.7)	(16.4)	11.6	(15.6)
Value	18,148	13,909	16,296	8,255	6,440	(10.2)	(23.4)	17.2	(22.0)
Unit value	$0.73	$0.66	$0.70	$0.73	$0.68	(3.8)	(8.4)	5.0	(7.6)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***	***	***	***	***
Productivity (dry 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)	***	***	***	***	***	***	***	***	***
Net income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
Unit net income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***
Net income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics using HTS statistical reporting numbers 2918.16.5010, 2932.20.5020 and 2918.16.1000 accessed August 1, 2018. Fifty (50) percent of the quantity reported under HTS 2918.16.1000 was used to estimate the dry weight equivalent.

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 the domestic interested party and it provided contact information for the following five firms as top purchasers of GNA products: ***. Purchaser questionnaires were sent to these five firms and two firms *** provided responses, which are presented below.

1. Have there been any significant changes in the supply and demand conditions for sodium gluconate that have occurred in the United States or in the market for GNA products in China since January 1, 2018?

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

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

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