

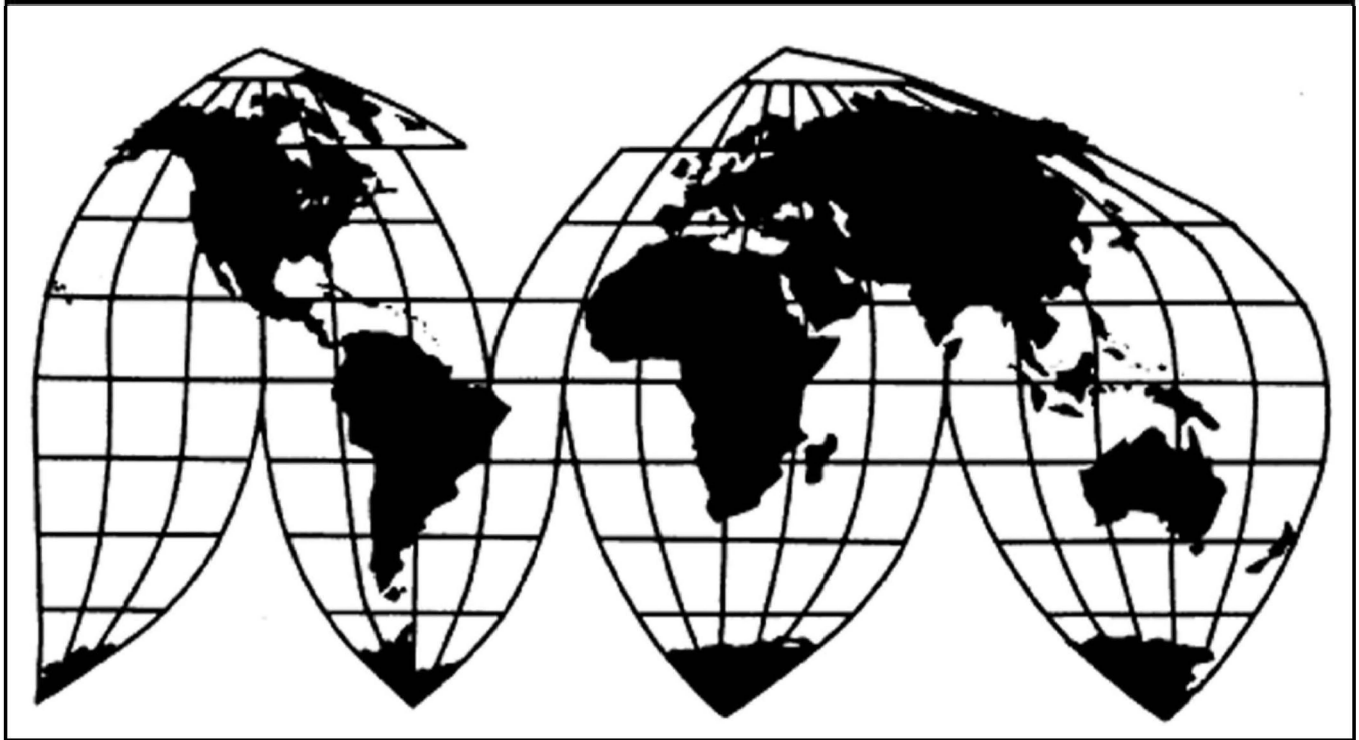
Sodium Gluconate, Gluconic Acid, and Derivative Products from China

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

Publication 4834

October 2018

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual concerns may not be published. Such information is identified by brackets or by parallel lines in confidential reports and is deleted and replaced with asterisks in public reports.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-590 and 731-TA-1397 (Final)
Sodium Gluconate, Gluconic Acid, and Derivative Products from China

DETERMINATIONS

On the basis of the record¹ developed in the subject investigations, the United States International Trade Commission (“Commission”) determines, pursuant to the Tariff Act of 1930 (“the Act”), that an industry in the United States is materially injured by reason of imports of Sodium Gluconate, Gluconic Acid, and Derivative Products from China, provided for in subheadings 2918.16.10, 2918.16.50, and 2932.20.50 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”), and to be subsidized by the government of China.

BACKGROUND

The Commission, pursuant to sections 705(b) and 735(b) of the Act (19 U.S.C. 1671d(b) and 19 U.S.C. 1673d(b)), instituted these investigations effective November 30, 2017, following receipt of a petition filed with the Commission and Commerce by PMP Fermentation Products (“PMP”), Inc., Peoria, Illinois. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of Sodium Gluconate, Gluconic Acid, and Derivative Products from China were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission’s investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on July 18, 2018 (83 FR 33944). The hearing was held in Washington, DC, on September 18, 2018, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of sodium gluconate, gluconic acid, and derivative products (“GNA products”) from China found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value and subsidized by the government of China.

I. Background

The petitioner is PMP Fermentation Products, Inc. (“PMP”), a domestic producer of GNA products. Representatives appeared at the hearing accompanied by counsel and submitted prehearing and posthearing briefs.

One respondent group participated actively in the final phase of these investigations. Representatives and counsel for Valudor Products, Inc. (“Valudor”), an importer of subject merchandise, appeared at the hearing and submitted prehearing and posthearing briefs.

U.S. industry data are based on the questionnaire response from PMP, which accounted for all domestic production of GNA products in 2017. U.S. import data are based on official Commerce import statistics and from questionnaire responses of eight U.S. importers of GNA products from China in 2017, which are believed to have accounted for the vast majority of subject imports in 2017. Foreign industry data are based on the responses of five foreign producers that, according to their estimates, accounted for the vast majority of production of GNA products in China.¹

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the “domestic like product” and the “industry.”² Section 771(4)(A) of the Tariff Act of 1930, as amended (“the Tariff Act”), defines the relevant domestic industry as the “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.”³ In turn, 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.”⁴

¹ Confidential Report (“CR”) at I-5, VII-3; Public Report (“PR”) at I-4, VII-3.

² 19 U.S.C. § 1677(4)(A).

³ 19 U.S.C. § 1677(4)(A).

⁴ 19 U.S.C. § 1677(10).

The decision regarding the appropriate domestic like product in an investigation is a factual determination, and the Commission has applied the statutory standard of “like” or “most similar in characteristics and uses” on a case-by-case basis.⁵ No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.⁶ The Commission looks for clear dividing lines among possible like products and disregards minor variations.⁷ Although the Commission must accept Commerce’s determination as to the scope of the imported merchandise that is subsidized or sold at less than fair value,⁸ the Commission determines what domestic product is like the imported articles Commerce has identified.⁹

B. Product Description

Commerce defined the scope of the imported merchandise under investigation as follows:

The scope of this investigation covers all grades of sodium gluconate, gluconic acid, liquid gluconate, and glucono delta lactone (GDL) (collectively GNA Products), regardless of physical

⁵ See, e.g., *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int’l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int’l Trade 1990), *aff’d*, 938 F.2d 1278 (Fed. Cir. 1991) (“every like product determination ‘must be made on the particular record at issue’ and the ‘unique facts of each case’”). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. See *Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int’l Trade 1996).

⁶ See, e.g., S. Rep. No. 96-249 at 90-91 (1979).

⁷ *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49; see also S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in “such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not ‘like’ each other, nor should the definition of ‘like product’ be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.”).

⁸ See, e.g., *USEC, Inc. v. United States*, 34 Fed. Appx. 725, 730 (Fed. Cir. 2002) (“The ITC may not modify the class or kind of imported merchandise examined by Commerce.”); *Algoma Steel Corp. v. United States*, 688 F. Supp. 639, 644 (Ct. Int’l Trade 1988), *aff’d*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

⁹ *Hosiden Corp. v. Advanced Display Mfrs.*, 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Cleo*, 501 F.3d at 1298 n.1 (“Commerce’s {scope} finding does not control the Commission’s {like product} determination.”); *Torrington*, 747 F. Supp. at 748-52 (affirming the Commission’s determination defining six like products in investigations in which Commerce found five classes or kinds).

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 $\text{NaC}_6\text{H}_{11}\text{O}_7$. 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 $\text{C}_6\text{H}_{12}\text{O}_7$.

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 $\text{C}_6\text{H}_{10}\text{O}_6$. GDL has a CAS registry number of 90-80-2, and can also be called d-glucono-1,5-lactone.

The merchandise covered by the scope of this investigation is currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under subheadings 2918.16.1000, 2918.16.5010, and 2932.20.5020. Merchandise covered by the scope may also enter under HTSUS subheadings 2918.16.5050, 3824.99.2890, and 3824.99.9295. Although the HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes, the written description of the merchandise is dispositive.¹⁰

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.¹¹ GNA

¹⁰ *Sodium Gluconate, Gluconic Acid, and Derivative Products from the People’s Republic of China: Final Affirmative Countervailing Duty Determination*, 83 Fed. Reg. 478779 (Dep’t of Commerce Sept. 21, 2018); *Sodium Gluconate, Gluconic Acid, and Derivative Products from the People’s Republic of China: Final Affirmative Determination of Sales at Less than Fair Value*, 83 Fed. Reg. 478776 (Dep’t of Commerce Sept. 21, 2018). The scope definition is the same in the antidumping and countervailing duty investigations.

¹¹ CR at I-4, I-9 to I-15; PR at I-3, I-7 – I-11.

products include sodium gluconate, gluconic acid, liquid gluconate, glucono delta lactone (GDL), and subject blends.¹² 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.¹³ Sodium gluconate and liquid gluconate contain sodium, while GDL and gluconic acid are sodium-free.¹⁴ When in dry form, all GNA products are white granular powder, with the result that there is little practical 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

C. Domestic Like Product Analysis

In the preliminary determinations, the Commission defined a single domestic like product coextensive with the scope definition. It found that all GNA products share the same basic physical characteristics. PMP reported that it manufactured all GNA products except GDL in the same facility using much of the same equipment and the same employees, and that it could also produce GDL in this facility. The Commission also found general interchangeability between different GNA products and substantial overlap in their end uses, although specific products were better suited to some individual end uses. It further found market perceptions of domestically produced GNA products as being part of an overall family of such products, and that these products were sold in comparable channels of distribution.¹⁷

In the final phase of these investigations, PMP contends that the Commission should continue to define a single domestic like product comprised of all GNA products described in the scope.¹⁸ Valudor agrees.¹⁹

¹² The record indicates that there was no domestic production of GDL during the period of investigation. CR at I-16 n.51; PR at I-12 n.51.

¹³ CR at I-9; PR at I-8.

¹⁴ CR at I-10; PR at I-8.

¹⁵ CR at I-11; PR at I-9.

¹⁶ CR at I-12 – I-13; PR at I-9 – I-10.

¹⁷ *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France*, Inv. Nos. 701-TA-590, 731-TA-1397-1398 (Preliminary), USITC Pub. 4756 at 7-12 (Jan. 2018) (“*Preliminary Determinations*”). In the preliminary phase of these investigations, the Commission rejected a respondent request to define GDL as a separate domestic like product on the basis that it was not produced domestically, and that the most similar domestically produced product was domestically produced gluconic acid. *Id.* at 8-9, 12-13. Commissioner Kearns did not participate in the preliminary phase of these investigations.

¹⁸ PMP’s Prehearing Br. at 7-9.

¹⁹ Valudor’s Prehearing Br. at 15.

The record in the final phase of these investigations does not contain any information concerning the domestic like product factors that is materially different from that in the preliminary phase.²⁰ Accordingly, for the reasons set forth in the preliminary determinations, we define a single domestic like product corresponding to the range of GNA products within the scope.

III. Domestic Industry

The domestic industry is defined 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.”²¹ 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.

The record indicates that PMP is the only known U.S. producer of the domestic like product. Both PMP and Valudor agree that the domestic industry should consist of PMP.²² There are no related party or other domestic industry issues in these investigations.²³ Accordingly, we define the domestic industry as PMP, the sole domestic producer of the domestic like product during the period of investigation.

IV. Material Injury by Reason of Subject Imports²⁴

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of imports of GNA products from China found by Commerce to be sold in the United States at less than fair value and subsidized by the government of China.

²⁰ See generally CR at I-10 – I-24; PR at I-15 – I-16.

²¹ 19 U.S.C. § 1677(4)(A).

²² PMP’s Prehearing Br. at 9; Valudor’s Prehearing Br. at 16.

²³ See CR at III-2 to III-3; PR at III-1 – III-2 (indicating that PMP did not purchase or import GNA products from China and had no direct or indirect control relationships with any exporter or importer of subject merchandise).

²⁴ Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall generally be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B). During November 2016 through October 2017, the 12-month period preceding the November 30, 2017, filing of the petitions, subject imports from China accounted for 43.8 percent of total U.S. imports of GNA products by quantity. CR/PR at Table IV-5. As imports from China are clearly above negligible levels, we find that subject imports are not negligible.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.²⁵ In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.²⁶ The statute defines “material injury” as “harm which is not inconsequential, immaterial, or unimportant.”²⁷ In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.²⁸ No single factor is dispositive, and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”²⁹

Although the statute requires the Commission to determine whether the domestic industry is “materially injured or threatened with material injury by reason of” unfairly traded imports,³⁰ it does not define the phrase “by reason of,” indicating that this aspect of the injury analysis is left to the Commission’s reasonable exercise of its discretion.³¹ In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the “by reason of” standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.³²

²⁵ 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provisions of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects. We have applied these amendments here.

²⁶ 19 U.S.C. § 1677(7)(B). The Commission “may consider such other economic factors as are relevant to the determination” but shall “identify each {such} factor ... and explain in full its relevance to the determination.” 19 U.S.C. § 1677(7)(B).

²⁷ 19 U.S.C. § 1677(7)(A).

²⁸ 19 U.S.C. § 1677(7)(C)(iii).

²⁹ 19 U.S.C. § 1677(7)(C)(iii).

³⁰ 19 U.S.C. §§ 1671d(a), 1673d(a).

³¹ *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) (“{T}he statute does not ‘compel the commissioners’ to employ {a particular methodology}.”), *aff’g*, 944 F. Supp. 943, 951 (Ct. Int’l Trade 1996).

³² The Federal Circuit, in addressing the causation standard of the statute, observed that “{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement.” *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that “this court requires evidence in the record ‘to show that the harm occurred (Continued...)”

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.³³ In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.³⁴ Nor does the “by reason of” standard require that unfairly traded imports be the “principal” cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.³⁵ It is clear

(...Continued)

“by reason of” the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.” See also *Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass’n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

³³ Uruguay Round Agreement Act Statement of Administrative Action (SAA), H.R. Rep. 103-316, vol. I at 851-52 (1994) (“{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.”); S. Rep. 96-249 at 75 (1979) (the Commission “will consider information which indicates that harm is caused by factors other than less-than-fair-value imports.”); H.R. Rep. 96-317 at 47 (1979) (“in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;” those factors include “the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry”); accord *Mittal Steel*, 542 F.3d at 877.

³⁴ SAA at 851-52 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports.”); *Taiwan Semiconductor Industry Ass’n*, 266 F.3d at 1345 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.” (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int’l Trade 2002) (“{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury” or make “bright-line distinctions” between the effects of subject imports and other causes.); see also *Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that “{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e.*, it is not an ‘other causal factor,’ then there is nothing to further examine regarding attribution to injury”), citing *Gerald Metals*, 132 F.3d at 722 (the statute “does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.”).

³⁵ S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

that the existence of injury caused by other factors does not compel a negative determination.³⁶

Assessment of whether material injury to the domestic industry is “by reason of” subject imports “does not require the Commission to address the causation issue in any particular way” as long as “the injury to the domestic industry can reasonably be attributed to the subject imports” and the Commission “ensure{s} that it is not attributing injury from other sources to the subject imports.”³⁷ Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed “rigid adherence to a specific formula.”³⁸

The Federal Circuit’s decisions in *Gerald Metals*, *Bratsk*, and *Mittal Steel* all involved cases where the relevant “other factor” was the presence in the market of significant volumes of price-competitive nonsubject imports. The Commission interpreted the Federal Circuit’s guidance in *Bratsk* as requiring it to apply a particular additional methodology following its finding of material injury in cases involving commodity products and a significant market presence of price-competitive nonsubject imports.³⁹ The additional “replacement/benefit” test looked at whether nonsubject imports might have replaced subject imports without any benefit to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

Mittal Steel clarifies that the Commission’s interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have “evidence in the record” to “show that the harm occurred ‘by reason of’ the LTFV imports,” and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.⁴⁰ Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

³⁶ See *Nippon Steel Corp.*, 345 F.3d at 1381 (“an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the ‘dumping’ need not be the sole or principal cause of injury.”).

³⁷ *Mittal Steel*, 542 F.3d at 877-78; see also *id.* at 873 (“While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured ‘by reason of’ subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.”) citing *United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swift-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission’s causation analysis as comports with the Court’s guidance in *Mittal*.

³⁸ *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); see also *Mittal Steel*, 542 F.3d at 879 (“*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was ‘by reason’ of subject imports.”).

³⁹ *Mittal Steel*, 542 F.3d at 875-79.

⁴⁰ *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 875-79 & n.2 (recognizing the Commission’s alternative interpretation of *Bratsk* as a reminder to conduct a non-attribution analysis).

The progression of *Gerald Metals*, *Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.⁴¹

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.⁴² Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.⁴³

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

1. Demand Considerations

U.S. demand for GNA products depends on demand for the downstream products in which they are used. GNA products have a wide variety of applications, including use in concrete, fertilizers, soaps and detergents, industrial cleaners, food, health care products, and road de-icing materials. The largest end-use categories for GNA products in the U.S. market in 2017 were industrial/institutional and construction, followed by food and agriculture.⁴⁴ GNA products account for a small share of the cost of end-use products.⁴⁵ There are limited substitutes for GNA products.⁴⁶

⁴¹ To that end, after the Federal Circuit issued its decision in *Bratsk*, the Commission began to present published information or send out information requests in the final phase of investigations to producers in nonsubject countries that accounted for substantial shares of U.S. imports of subject merchandise (if, in fact, there were large nonsubject import suppliers). In order to provide a more complete record for the Commission's causation analysis, these requests typically seek information on capacity, production, and shipments of the product under investigation in the major source countries that export to the United States. The Commission plans to continue utilizing published or requested information in the final phase of investigations in which there are substantial levels of nonsubject imports.

⁴² We provide in our respective discussions of volume, price effects, and impact a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

⁴³ *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp.*, 458 F.3d at 1350, citing *U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

⁴⁴ CR at I-4, I-12 to I-13; II-1, II-7 – II-8; PR at I-3, I-9 – I-10, II-1, II-5.

⁴⁵ CR at II-8; PR at II-5.

⁴⁶ CR at II-10; PR at II-6. *** along with 20 out of 22 responding purchasers reported that there were no substitutes for GNA products. *Id.*

PMP and Valudor agree that demand for GNA products has grown in the U.S. market during the January 2015-June 2018 period of investigation.⁴⁷ Most importers reported that U.S. demand for GNA products has not changed or fluctuated since 2015, while a plurality of purchasers reported that U.S. demand for GNA products has increased since 2015.⁴⁸

Apparent U.S. consumption increased overall by *** percent from 2015 to 2017: it was *** dry pounds in 2015, *** dry pounds in 2016, and *** dry pounds in 2016. It was *** dry pounds in the first six months of 2017 (“interim 2017”) and higher, at *** dry pounds, in the first six months of 2018 (“interim 2018”).⁴⁹

2. Supply Considerations

During the period of investigation, the sole domestic producer, PMP, was the largest source of supply of GNA products in the U.S. market. Its share of apparent U.S. consumption was *** percent in 2015, *** percent in 2016, and *** percent in 2017; its share was *** percent in interim 2017 and *** percent in interim 2018.⁵⁰

The second largest source of supply of GNA products during the period of investigation was nonsubject imports. Nonsubject imports’ U.S. market share declined from *** percent in 2015 to *** percent in 2016 and 2017; nonsubject imports accounted for *** percent of the market in interim 2017 and *** percent in interim 2018.⁵¹ The leading source of nonsubject GNA products in the U.S. market during the period of investigation was France, followed by Italy.⁵²

Subject imports accounted for the smallest source of supply in the U.S. market. Subject import market share was *** percent in 2015, *** percent in 2016, and *** percent in 2017; it was *** percent in interim 2017 and *** percent in interim 2018.⁵³

3. Substitutability and Other Conditions

The record in the final phase of these investigations indicates that there is a high degree of substitutability between domestically produced GNA products and subject imports.⁵⁴ *** and the majority of U.S. importers and purchasers reported that domestically produced GNA products and subject imports are always or frequently interchangeable.⁵⁵ In addition, almost all responding purchasers reported that domestically produced GNA products and subject imports

⁴⁷ PMP’s Posthearing Br. at 37; Valudor’s Posthearing Br., Responses to Commission Questions at 25; Valudor’s Prehearing Br. at 23-25; CR at II-8 – II-9; PR at II-5 – II-6.

⁴⁸ CR at II-9; PR at II-6; CR/PR at Table II-4.

⁴⁹ CR/PR at Tables IV-7, C-1.

⁵⁰ CR/PR at Table C-1.

⁵¹ CR/PR at Table C-1.

⁵² CR at II-6; PR at II-6. ***. *Id.*

⁵³ CR/PR at Table C-1.

⁵⁴ CR at II-10; PR at II-6.

⁵⁵ CR/PR at Table II-10.

always or usually meet minimum quality specifications.⁵⁶ A majority or plurality of purchasers reported that U.S. GNA products and subject imports were comparable with respect to 11 out of 16 factors, with most purchasers reporting that U.S. GNA products were superior with respect to delivery terms, delivery time, minimum quantity requirements, and U.S. transportation costs and an equal number of purchasers reporting that the domestic like product was superior or comparable in terms of technical support/service compared to subject imports.⁵⁷ Price was the only factor in which a significant number of purchasers reported that domestically produced GNA products were inferior to subject imports.⁵⁸

The record also indicates that price is an important factor in purchasing decisions. Price was the most frequently cited factor to be included in purchasers' top three purchasing factors.⁵⁹ In addition, 19 out of 23 purchasers reported price to be a very important factor in purchasing decisions.⁶⁰ PMP reported that differences other than price were *** to purchasing decisions, while most importers reported that differences other than price were only sometimes or never significant.⁶¹ However, a plurality of purchasers reported that differences other than price were always significant, stating that domestically produced GNA products were better than subject imports in terms of lead times, transportation, quality, product consistency, and reliability of supply, although one purchaser reported that, notwithstanding its concerns regarding the quality and availability of subject imports, its customers frequently purchased Chinese GNA products due to the lower prices.⁶²

During the period of investigation, the majority of shipments of both domestically produced GNA products and subject imports consisted of sodium gluconate.⁶³ U.S. shipments of nonsubject imports during the period of investigation consisted *** of GDL, with ***.⁶⁴

GNA products are sometimes classified as food grade as opposed to technical or industrial grade.⁶⁵ All of PMP's production of GNA products are food grade and all meet Food

⁵⁶ CR/PR at Table II-11.

⁵⁷ CR/PR at Table II-9.

⁵⁸ CR/PR at Table II-9. Seven purchasers reported that domestically produced GNA products were comparable to subject imports in terms of price, while six purchasers reported the domestic like product to be inferior in terms of price (*i.e.*, higher priced) compared to subject imports. *Id.*

⁵⁹ CR/PR at Table II-6. Other top three purchasing factors include quality and availability; quality was most frequently named as the top purchasing factor. *Id.* Both quality and availability were factors for which most purchasers reported the domestic like product and subject imports to be comparable. CR/PR at Table II-9.

⁶⁰ CR/PR at Table II-7. A greater number of responding purchasers reported that the following factors were very important in their purchasing decisions: availability, reliability of supply, product consistency, and quality meets industry standards. All of these were factors for which most purchasers reported the domestic like product and subject imports to be comparable. CR/PR at Table II-9.

⁶¹ CR/PR at Table II-12.

⁶² CR/PR at Table II-12; CR at II-17; PR at II-11 – II-12.

⁶³ CR at I-13, PR at I-11; CR/PR at Table III-7 (***); CR/PR at Table at IV-4 (showing that the majority of U.S. importers' U.S. shipments of subject imports consist of sodium gluconate, with a small percentage of U.S. shipments of subject imports consisting of GDL).

⁶⁴ CR/PR at Table IV-4; *see also Preliminary Determinations*, USITC Pub. 4756 at 34.

Chemical Codex (“FCC”) standards.⁶⁶ Chinese producers manufacture both technical grade and food grade products, with at least one subject producer, ***, producing GNA products that satisfy FCC criteria.⁶⁷

As described in section II.C., GNA products have a wide variety of end uses. During the period of investigation, the largest portion of PMP’s sales of GNA products were for construction, followed by industrial and institutional end uses, with other end uses including agricultural, metal cleaning, chelation, and de-icing.⁶⁸ Although all of its GNA products satisfy FCC standards, food end uses accounted for approximately four to five percent of PMP’s total U.S. sales of GNA products.⁶⁹ ***.⁷⁰ Both subject imports and the domestic like product were sold to many of the same purchasers for a variety of end uses, including but not limited to agricultural, industrial, and food end uses.⁷¹

During the period of investigation, both PMP and U.S. importers of subject merchandise sold GNA products in similar channels of distribution. *** U.S. shipments of subject merchandise were sold to end users, while approximately *** percent of domestically produced GNA were shipped to end users with the remainder being sold through distributors.⁷² PMP and responding importers also reported selling GNA products throughout the contiguous United States.⁷³

The primary raw material for the production of GNA products is corn-based liquid glucose, also known as glucose syrup or liquid corn sugar.⁷⁴ Between 2015 through June 2018, the price of liquid corn sugar increased by 29.3 percent.⁷⁵ PMP reported that during the period of investigation, ***.⁷⁶

(...Continued)

⁶⁵ CR at I-13 – I-15; PR at I-10; CR/PR at Table 1-4.

⁶⁶ CR at I-13; PR at I-10; CR/PR at Table I-4.

⁶⁷ CR/PR at Table I-4. In its final comments, Valudor correctly noted that CR/PR Table I-4 mistakenly identified technical grade GNA products from subject producer *** as satisfying FCC criteria. Notwithstanding that subject producer *** does not appear to produce GNA products that satisfy FCC criteria, record evidence indicates that its website advertises industrial grade sodium gluconate, along with a description of the uses of sodium gluconate, including food and medical uses. PMP’s Posthearing Br. at Attachment A-4.

⁶⁸ PMP’s Posthearing Br. at Attachment A-2.

⁶⁹ PMP’s Posthearing Br. at Attachment A-2.

⁷⁰ CR at IV-6; PR at IV-5.

⁷¹ CR/PR at Tables V-7 – V-9; PMP’s Posthearing Br. at Attachment A-2.

⁷² CR/PR at Table II-1.

⁷³ CR/PR at Table II-2.

⁷⁴ CR/PR at V-1.

⁷⁵ CR/PR at V-1. To the extent that Valudor argues that price data from the U.S. Department of Agriculture (USDA) for glucose syrup are not representative of PMP’s raw material costs because PMP’s raw material is liquid corn sugar or corn syrup, Valudor’s Posthearing Br. at 12-13, we find Valudor’s assertion unpersuasive. USDA data for glucose syrup are ***. See Emails between Commission staff and USDA, EDIS Doc. No. 656684.

⁷⁶ CR at V-2; PR at V-1.

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the “Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant.”⁷⁷

Subject imports maintained a significant presence in the U.S. market throughout the period of investigation. In absolute terms, 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 2018.⁷⁸ 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 2018.⁷⁹

Based on the foregoing, we find that the volume of subject imports was significant in absolute terms as well as relative to consumption.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the subject imports, the Commission shall consider whether

(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and

(II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.⁸⁰

As discussed above in section IV.B.3., the record indicates that the domestic like product and subject imports are highly substitutable and price is an important factor in purchasing decisions.

The Commission collected quarterly pricing data on two GNA products.⁸¹ PMP and four importers provided usable pricing data, although not all firms reported pricing for all products

⁷⁷ 19 U.S.C. § 1677(7)(C)(i).

⁷⁸ CR/PR at Table C-1.

⁷⁹ CR/PR at Table C-1.

⁸⁰ 19 U.S.C. § 1677(7)(C)(ii).

⁸¹ The pricing products were as follows:

Product 1 – Sodium gluconate in 50 lb. to 60 lb. bag or kilogram equivalent (*i.e.*, 25 or 30 kg/bag).

Product 2 – Sodium gluconate in 2,000 lb. to 2,500 lb. bag or kilogram equivalent (*i.e.*, 1,000 or 1,250 kg/bag).

CR at V-5; PR at V-3; CR/PR at Tables V-3, V-4. Pricing data were requested for GNA only. *Id.*

for all quarters.⁸² Pricing data reported by these firms accounted for *** percent of PMP's commercial shipments of GNA products and 98 percent of reported U.S. commercial shipments of subject imports from China in 2017.⁸³ The pricing data show that subject imports undersold the domestic like product in all 28 quarterly comparisons, involving 23.7 million dry pounds of subject imports.⁸⁴ Margins of underselling reached their highest levels in 2017 and interim 2018; for product 1, margins of underselling ranged from a low of *** percent in the first quarter of 2015 to a high of *** percent in the first quarter of 2018; for product 2, margins of underselling ranged from a low of *** percent in the first quarter of 2016 to a high of *** percent in the first quarter of 2018.⁸⁵ Given the pervasive underselling at increasing margins and the fact that price is an important consideration in purchasing decisions, we find this underselling to be significant.

We have also examined changes in the prices of the domestic like product and subject imports during the period of investigation. Prices of subject imports generally fell considerably during the period. For product 1, subject import prices fell *** percent from \$*** per dry pound in the first quarter of 2015 to \$*** per dry pound in the third quarter of 2017, before increasing *** to \$*** per dry pound in the second quarter of 2018.⁸⁶ For product 2, subject import prices fell *** percent from \$*** per dry pound in the first quarter of 2015 to \$*** per dry pound in the third quarter of 2017, before increasing *** to \$*** per dry pound in the second quarter of 2018.⁸⁷ Prices for the domestic like product also fell from 2015 through the fourth quarter of 2017, when PMP filed the petitions in these investigations. Prices for domestically produced product 1 fell from \$*** per dry pound in the first quarter of 2015 to \$*** per dry pound in the fourth quarter of 2017, while prices for pricing product 2 fell from \$*** per dry pound in the first quarter of 2015 to \$*** per dry pound in the fourth quarter of 2017.⁸⁸ These price declines occurred notwithstanding the strong demand for GNA products, for which, as previously stated, there are limited substitutes. They also occurred notwithstanding that PMP's unit raw materials costs *** throughout the period of investigation and its overall unit cost of goods sold ("COGS") were *** throughout the period.⁸⁹ After the filing of the petitions, prices for both products subsequently increased in the first two quarters of 2018, with prices for pricing product 1 returning to \$*** per pound in the first quarters of 2018 and prices for pricing product 2 increasing to \$*** during that time.⁹⁰ Accordingly, in light of the strong demand, rising costs, and other record evidence showing price reductions discussed below, we find that the growing volume of subject imports, which undersold the

⁸² CR at V-5; PR at V-3.

⁸³ CR at V-5; PR at V-3 – V-4.

⁸⁴ CR/PR at Tables V-3, V-4; CR at V-11; PR at V-5.

⁸⁵ CR/PR at Tables V-3, V-4; CR at V-11; PR at V-5.

⁸⁶ CR/PR at Table V-3.

⁸⁷ CR/PR at Table V-4.

⁸⁸ CR/PR at Tables V-3 & V-4.

⁸⁹ CR/PR at Table VI-1. PMP's rising raw material costs are consistent with the increase in glucose syrup prices that occurred over the period of investigation. CR/PR at V-1.

⁹⁰ CR/PR at Tables V-3 & V-4.

domestic like product at increasing margins throughout the period of investigation, depressed U.S. prices to a significant degree.

Because of the competitive pressure from the low and falling prices of subject imports, PMP was unable to raise prices for its GNA products commensurately with its costs. PMP experienced a cost-price squeeze as the ratio of its COGS to net sales deteriorated during the period of investigation and prices for its GNA products fell through 2017. PMP's ratio of COGS to net sales increased from *** percent in 2015 to *** percent in 2016 and *** percent in 2017; it was *** percent in interim 2017 and *** percent in interim 2018.⁹¹ Accordingly, we find that subject imports prevented price increases for the domestic like product that otherwise would have occurred to a significant degree.

Other record evidence demonstrates that subject imports affected the prices of the domestic like product and put competitive pressure on PMP to cut prices or risk losing sales. Several purchasers reported that they were targeted aggressively with offers of low-priced subject imports, and the record indicates that PMP's customers confirmed to PMP that it was competing against significantly lower-priced subject imports.⁹² In addition, purchaser data concerning lost sales and lost revenue further demonstrate that subject imports and domestically produced GNA products competed on the basis of price. Of the 23 purchasers that responded to the purchaser questionnaire, three confirmed that PMP reduced its prices to compete with lower-priced subject imports.⁹³ Furthermore, eight purchasers reported that they purchased subject imports instead of domestically produced GNA products. Seven of those purchasers reported that subject imports were priced lower than the domestic like product, and six reported that price was the primary reason for purchasing subject imports.⁹⁴ Four of these six purchasers additionally reported increasing their purchases of subject imports by the same or a similar percentage that they reduced their purchases of domestic GNA products.⁹⁵ The only purchaser that reported increasing its share of domestic GNA products and reducing its share of subject import purchases also reported that the domestic industry reduced its prices by *** percent.⁹⁶ Although the reported lost sales did not result in the domestic industry losing market share, these data corroborate other record evidence that show that subject imports affected the price of domestic GNA products and put competitive pressure on PMP to keep its prices lower than it otherwise would have, particularly in light of growing demand and increasing costs, in order to retain sales and maintain its market share.

⁹¹ CR/PR at Table C-1.

⁹² PMP's Posthearing Br., Responses to Commission Questions at 28-29, 32-33 & Attachments A-3, A-6, A-9, A-19.

⁹³ CR at V-12; PR at V-5; CR/PR at Table V-9.

⁹⁴ CR at V-11 – V-12; PR at V-5; CR/PR at Table V-8. In addition to these data regarding lost sales and lost revenue, PMP further reports that one of its major customers, *** threatened to purchase lower-priced subject imports and only continued to purchase GNA products from PMP because PMP lowered its prices and filed the petitions in these investigations. PMP's Posthearing Br. at 28-29 & Attachment A-9.

⁹⁵ CR/PR at Table V-7.

⁹⁶ CR/PR at Tables V-7 & V-9.

We are not persuaded by Valudor's arguments that subject imports did not have significant price effects on the domestic like product. Acknowledging that subject imports undersold the domestic like product, Valudor nonetheless asserts that this underselling did not affect the prices for the domestic industry because competition between subject imports and the domestic like product is attenuated and not based on price. In particular, Valudor contends that subject imports are technical grade and therefore lower priced than domestically produced GNA products, which satisfy FCC standards.⁹⁷ As discussed previously, however, some GNA products from China also satisfy FCC standards. Further, PMP's sales of GNA products for food end uses constitute only a very small share of its overall sales, and the majority of its sales are to end uses that would not require food grade products, including construction, industrial, and agricultural end uses.⁹⁸ Accordingly, we do not find that competition is attenuated based on the grade of the products.

We further find that the record does not support Valudor's assertions that competition is attenuated and not based on price because subject imports are concentrated in agricultural end uses in California.⁹⁹ As discussed previously, the record indicates that subject imports and domestically produced GNA products are sold throughout the United States for a variety of overlapping end uses and to some of the same customers, as demonstrated by the confirmed lost sales and lost revenue data.¹⁰⁰ Indeed, Valudor's arguments regarding the concentration of subject imports in agricultural end uses in California are based primarily on the experience of a single purchaser, ***, which purchased subject imports rather than domestically produced GNA products but nonetheless continued to purchase GNA products from PMP throughout the period of investigation.¹⁰¹ Moreover, although Valudor and *** assert that *** purchased subject imports for non-price reasons, *** confirmed the accuracy of its questionnaire response in which it indicated that price was the primary reason for purchasing subject imports rather than domestically produced GNA products and further reported that, had subject imports been priced higher than PMP's products, it might have decided to buy from PMP.¹⁰² This confirms direct competition between the subject imports and the domestic like product

⁹⁷ Valudor's Posthearing Br. at 6-8, 10-11 & Responses to Commission Questions at 39-40.

⁹⁸ PMP's Posthearing Br. at Attachment A-2.

⁹⁹ Valudor's Posthearing Br. at 9-12 & Responses to Commission Questions at 1-2, 7.

¹⁰⁰ CR/PR at Tables II-2, V-7, V-8 & V-9; CR at II-1, IV-6; PR at II-1, IV-5; PMP's Posthearing Br. at Attachment A-2.

¹⁰¹ PMP's Posthearing Br., Responses to Commission Questions at 6-7, Attachment A-6 & Exhibits 3-6; *** Purchaser Questionnaire.

¹⁰² Valudor's Posthearing Br. at Exhibit 4. We are equally unpersuaded by Valudor's arguments that we should disregard the statements by other purchasers that confirmed that price was the primary reason for purchasing subject imports rather than domestically produced GNA products. Valudor's Posthearing Br., Responses to Commission Questions at 31-35. Valudor's arguments provide no factual basis for disregarding purchasers' statements as to the primary reason why they purchased subject imports. To the contrary, these purchasers' statements are consistent with other questionnaire data, discussed above in section IV.B.3, that indicate price is an important purchasing factor and that the domestic like product and the subject imports are generally considered comparable with respect to other important purchasing factors such as quality and availability.

and also confirms that price is a crucial deciding factor. Thus, the record does not support Valudor's assertions that competition between subject imports and the domestic like product is attenuated and based primarily on non-price considerations.

Further, we are not persuaded by Valudor's argument that we should find that subject imports did not have the effect of causing a cost-price squeeze for PMP because the firm's rising raw material costs were due to its manufacturing process, which relies upon liquid corn sugar as its primary raw material.¹⁰³ In evaluating whether subject imports prevented price increases for the domestic product that otherwise would have occurred, we have examined the actual costs incurred by the domestic producer as well as publicly available prices for its raw materials, which in this case is liquid corn sugar, not corn. In these circumstances, we decline, as Valudor suggests, to examine what the costs might have been if domestic producers used a hypothetical, alternative process.

In conclusion, given that the domestic like product and subject imports are highly substitutable and compete on the basis of price, we find that the pervasive and increasing underselling by subject imports depressed the domestic industry's prices to a significant degree. The lower, declining prices of subject imports also prevented the domestic industry from obtaining price increases, which otherwise would have occurred given the growing demand in the U.S. market and the domestic industry's rising costs. We therefore find that subject imports had significant price effects on domestically produced GNA products.

E. Impact of the Subject Imports¹⁰⁴

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."¹⁰⁵ These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating

¹⁰³ Valudor's Posthearing Br. at 12-13 & Responses to Commission Questions at 20-22, 24.

¹⁰⁴ The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less value, Commerce found dumping margins of 213.15 percent for all exporters of subject imports. *Sodium Gluconate, Gluconic Acid, and Derivative Products from the People's Republic of China: Final Affirmative Determination of Sales at Less than Fair Value*, 83 Fed. Reg. 478776 (Dep't of Commerce Sept. 21, 2018). We take into account in our analysis the fact that Commerce has made final findings that all subject producers are selling subject imports in the United States at less than fair value. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling and price effects of subject imports, described in both the price effects and impact discussions, is particularly probative to an assessment of the impact of the subject imports.

¹⁰⁵ 19 U.S.C. § 1677(7)(C)(iii); see also SAA at 851 and 885 ("In material injury determinations, 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 also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”¹⁰⁶

During the period of investigation,¹⁰⁷ PMP’s capacity for GNA products¹⁰⁸ remained constant at *** dry pounds for each full year and *** dry pounds for both interim periods.¹⁰⁹ Its production increased from *** dry pounds in 2015 to *** dry pounds in 2016 and *** dry pounds in 2017; it was higher at *** dry pounds in interim 2018 than at *** dry pounds in interim 2017.¹¹⁰ Accordingly, the domestic industry’s capacity utilization rate increased from *** percent in 2015 to *** percent in 2016 and *** percent in 2017; it was *** percent in

¹⁰⁶ 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

¹⁰⁷ Valudor contends that in order to make a final determination finding that the domestic industry is materially injured by reason of subject imports, we must find an adverse change has occurred since the period we examined in the preliminary determinations. Valudor’s Prehearing Br. at 5-6, 20-22. This argument misunderstands the nature of our analysis. First, Valudor mischaracterizes the final phase period of investigation as merely extending the preliminary phase investigation by nine months. Rather, the period of investigation in the final phase is January 2015 through June 2018, which includes the full calendar year of 2017, as well as the interim period of 2018. Consequently, the period of investigation is, in fact, different from that in the preliminary phase of these investigations, which concerned the period January 2014 through September 2017. *See Preliminary Determinations*, USITC Pub. 4756 at 4 n.8. In addition, the record is different in the final phase, including among other things more questionnaire responses, particularly from purchasers. We examine the entire record in the final phase period of investigation – and not merely segments of it – in making our determination here. Indeed, the Commission has broad discretion with respect to the period of investigation that it selects in antidumping and countervailing duty investigations, and the statute does not require the Commission to examine a particular period of time, nor does it limit the Commission to only examining the period of time that differs between the preliminary and final phases. *See, e.g., Nucor Corp. v. United States*, 414 F.3d 1331, 1337 (Fed. Cir. 2005); *see Nitrogen Solutions Fair Trade Comm. v. United States*, 29 CIT 86, 96, 358 F. Supp. 2d 1314, 1325 (2005) (“the ITC’s broad discretion in choosing the time frame for its investigation and analysis has consistently been upheld.”); *Angus Chemical Co. v. United States*, 20 CIT 1255, 1266-67, 944 F. Supp. 943, 953-54 (1998), *aff’d*, 140 F.3d 1478 (Fed. Cir. 1998).

¹⁰⁸ Although PMP continues to assert that we should focus our analysis primarily on the performance of its sodium gluconate operations, we again decline to do so. As we explained in our preliminary determinations, the Commission must determine whether the domestic industry “as a whole” has been materially injured by subject imports. Thus, our overall material injury analysis necessarily focuses on the domestic industry as a whole, and does not limit itself to the industry’s operations with respect to a particular portion of the domestic like product. *See Preliminary Determinations*, USITC Pub. 4756 at 31-32; Transcript at 44 (Spooner). Commissioner Kearns recognizes the requirement to analyze the industry as a whole and does so under the circumstances of this investigation. However, there may be industries featuring conditions of competition in which it is appropriate to examine particular products in greater detail.

¹⁰⁹ CR/PR at Table III-4.

¹¹⁰ CR/PR at Table III-4.

interim 2017 and *** percent in interim 2018.¹¹¹ The domestic industry's U.S. shipments also increased over the period of investigation from *** dry pounds in 2015 to *** dry pounds in 2016 and *** dry pounds in 2017; they were *** dry pounds in interim 2017 and *** pounds in interim 2018.¹¹² The domestic industry's market share increased overall during the period of investigation. It was *** percent in 2015, *** percent in 2016, *** percent in 2017, *** percent in interim 2017, and *** percent in interim 2018.¹¹³ PMP's end-of-period inventories fluctuated during the period of investigation, initially increasing from *** dry pounds in 2015 to *** dry pounds in 2016 before decreasing to *** dry pounds in 2017; they were *** dry pounds in interim 2017 and lower, at *** dry pounds, in interim 2018.¹¹⁴

The number of production and related workers ("PRWs") showed little variation: there were *** PRWs in 2015, *** PRWs in 2016, and *** PRWs in 2017; PMP had *** PRWs in interim 2017 and *** PRWs in interim 2018.¹¹⁵ Total hours worked increased from *** hours in 2015 to *** hours in 2016 and 2017; total hours worked were *** hours in interim 2017 and *** hours in interim 2018.¹¹⁶ Wages paid and productivity increased during the period of investigation. Wages paid increased from \$*** in 2015 to \$*** in 2016 and \$*** in 2017; they were \$*** in interim 2017 and \$*** in interim 2018.¹¹⁷ Productivity increased from *** dry pounds per hour in 2015 to *** dry pounds per hour in 2016 and *** dry pounds per hour in 2017; productivity was *** dry pounds per hour in interim 2017 and higher, at *** dry pounds per hour, in interim 2018.¹¹⁸

PMP's sales revenues increased more modestly than its output from 2015 to 2017. Its net sales, by quantity, increased *** percent from 2015 to 2017.¹¹⁹ By contrast, its sales revenues increased only *** percent from 2015 to 2017, initially falling from \$*** in 2015 to \$*** in 2016 before increasing to \$*** in 2017.¹²⁰ PMP's COGS increased throughout the period of investigation, from \$*** in 2015 to \$*** in 2016 and \$*** in 2017, for an overall increase of *** percent. The industry's COGS were *** percent higher in interim 2018 at \$*** than in interim 2017 at \$***.¹²¹ As discussed above, due to the pressure from low-priced subject imports, PMP was unable to raise prices sufficiently to cover these increasing costs, and its ratio of COGS to net sales increased from *** percent in 2015 to *** percent in 2016 and *** percent in 2017; it was *** percent in interim 2017 and *** percent in interim 2018.¹²²

¹¹¹ CR/PR at Table III-4.

¹¹² CR/PR at Table III-6.

¹¹³ CR/PR at Table C-1.

¹¹⁴ CR/PR at Table III-8.

¹¹⁵ CR/PR at Table III-10.

¹¹⁶ CR/PR at Table III-10.

¹¹⁷ CR/PR at Table III-10.

¹¹⁸ CR/PR at Table III-10.

¹¹⁹ CR/PR at Table C-1. Net sales quantities were *** dry points in interim 2017 and higher, at *** dry pounds, in interim 2018. *Id.*

¹²⁰ CR/PR at Table C-1. Net sales revenues were \$*** in interim 2017 and higher, at \$***, in interim 2018. *Id.*

¹²¹ CR/PR at Table C-1.

¹²² CR/PR at Table C-1.

As a result of the cost-price squeeze, PMP realized lower gross profits from 2015 to 2017 notwithstanding increasing sales quantities and revenues. PMP's gross profits declined from \$*** in 2015 to \$*** in 2016 and \$*** in 2017; its gross profits were \$*** in interim 2017 and higher, at \$***, in interim 2018.¹²³ Operating income also fell from \$*** in 2015 to \$*** in 2016 and \$*** in 2017; it was \$*** in interim 2017 and lower, at \$***, in interim 2018.¹²⁴ Net income similarly declined from \$*** in 2015 to \$*** in 2016 and \$*** in 2017; it was \$*** in interim 2017 and lower, at \$***, in interim 2018.¹²⁵ PMP's capital expenditures fluctuated during period of investigation, and it reported *** research and development expenditures.¹²⁶

The significant volume of subject imports, which were highly substitutable with domestically produced GNA products, undersold the domestic like product at substantial margins, resulting in competitive pressure that depressed the domestic industry's prices and prevented the domestic industry from increasing its prices in an environment of growing demand and increasing costs. Consequently, the subject imports caused the domestic industry to receive less revenue than it otherwise would have. For these reasons, we determine that subject imports had a significant impact on the domestic industry during the period of investigation.¹²⁷

We are not persuaded by Valudor's arguments to the contrary. In particular, as discussed above, we find that competition between domestically produced GNA products and subject imports was not attenuated.¹²⁸ Rather, the record demonstrates that the domestic like product and subject imports competed on price throughout the U.S. market, in overlapping end uses, for many of the same customers.

We also reject Valudor's arguments that PMP is 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 2017.¹²⁹ As a threshold matter, we rejected above the proposition that our analysis in the final phase of these investigations is limited to the nine-month period that differed from the preliminary phase period of investigation. Instead, we have examined the entire period of investigation in the final phase of these investigations. As we observed above, gross income, net income, and operating income all fell from 2015 through 2017, as the domestic industry was prevented by subject imports from increasing its prices sufficiently to account for its rising costs.

¹²³ CR/PR at Tables V-1, C-1.

¹²⁴ CR/PR at Tables V-1, C-1.

¹²⁵ CR/PR at Tables V-1, C-1.

¹²⁶ CR/PR at Table VI-6. PMP's capital expenditures were \$*** in 2015, \$*** in 2016, and \$*** in 2017; they were \$*** in interim 2017 and \$*** in interim 2018. *Id.*

¹²⁷ Because of these adverse effects, the domestic industry's increases in output and market share, which Valudor stresses and we acknowledged above, do not dictate that we make a negative determination. Similarly, we acknowledge that whatever measure of performance is referenced, PMP had profitable operations throughout the period of investigation. This also is not dispositive to our analysis. See 19 U.S.C. § 1677(7)(J).

¹²⁸ Valudor's Posthearing Br. at 4, 9-10, 12-13.

¹²⁹ Valudor's Posthearing Br. at 3.

Moreover, even if we were to exclude these expenses as Valudor suggests, the fact that the domestic industry would have realized higher operating income in interim 2018 than interim 2017 does not demonstrate that the domestic industry was not materially injured by subject imports. Pursuant to our statutory obligation, we have also examined PMP's gross profits, which would not include the expenses that Valudor seeks to exclude from our analysis. These profits were higher in interim 2018 than in interim 2017, yet this does not detract from our finding of significant impact for two reasons. First, the higher level of gross profits in interim 2018 relative to interim 2017 is consistent with record evidence that PMP was able to increase prices and gain sales following the filing of the petitions.¹³⁰ Second, the unit value of gross profits and ratio of gross profits to net sales was lower in interim 2018 than at the beginning of the period in 2015 or 2016.¹³¹ Consequently, these profit levels are below what they would have been had the domestic industry been able to raise prices during the period of investigation to reflect demand trends and increasing costs.

We have also considered whether factors other than subject imports had an impact on the domestic industry during the period of investigation so as not to attribute to subject imports any injury caused by other factors. Although nonsubject imports were the second largest source of GNA products in the U.S. market during the period of investigation, their volume and market share fell overall during the period.¹³² In addition, the record indicates that nonsubject imports consist largely of GDL, and this product tends to be higher priced than sodium gluconate, which accounted for most of the U.S. shipments of the domestic like product and subject imports.¹³³ Consequently, nonsubject imports did not cause the adverse price effects that we have attributed to subject imports.

¹³⁰ CR/PR at Tables V-3 – V-4; PMP's Posthearing Br. at Attachment 6, Exhibits 3-5. We recognize that, based on official import statistics, the volume of subject imports was higher in interim 2018 than in interim 2017. CR/PR at Table C-1. We observe, however, that the pricing product data show that the volume of PMP's pricing products was higher in the first two quarters of 2018 at *** short tons than in the first two quarters of 2017 at *** short tons. CR/PR at Tables V-3 – V-4. In contrast, the volume of imported pricing products, which include pricing data from the two largest importers, *** (see CR at I-4, V-1 – V-7; PR at I-4, V-1 – V-4), was less in interim 2018 at *** short tons than in interim 2017 at *** short tons. CR/PR at Tables V-3 – V-4.

¹³¹ The unit value of gross profits was \$*** per dry pound in 2015 and \$*** per dry pound in interim 2018. CR/PR at Table VI-1. The ratio of gross profits to net sales was *** percent in 2015 and *** percent in interim 2018. *Id.*

¹³² The volume of nonsubject imports was 14.5 million dry pound in 2015, 11.7 million dry pounds in 2016, and 12.8 million dry pounds in 2017; it was 6.9 million dry pounds in interim 2017 and 4.8 million dry pounds in interim 2018. CR/PR at Table C-1. Nonsubject import market share was *** percent in 2015 and *** percent in 2016 and 2017; it was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

¹³³ CR/PR at Tables III-7, IV-4 & C-1; *Preliminary Determinations*, USITC Pub. 4756 at 34.

V. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of GNA products from China found by Commerce to be sold in the United States at less than fair value and subsidized by the government of China.

PART I: INTRODUCTION

BACKGROUND

These investigations result from petitions filed with the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“USITC” or “Commission”) by PMP Fermentation Products (“PMP”), Inc., Peoria, Illinois, on November 30, 2017, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of sodium gluconate, gluconic acid, and derivative products (collectively referred to as “GNA products”) from China and less-than-fair-value (“LTFV”) GNA products¹ from China. The following tabulation provides information relating to the background of these investigations.^{2 3}

Effective date	Action
November 30, 2017	Petition filed with Commerce and the Commission; institution of the Commission's investigations
January 4, 2018	Commerce's notice of initiation
January 16, 2018	Commission's preliminary determinations
July 10, 2018	Commerce's preliminary determinations (83 FR 23888, May 23, 2018; 83 FR 31949, July 10, 2018); scheduling of final phase of Commission investigations (83 FR 33944, July 18, 2018)
September 17, 2018	Commerce's final determinations (83 FR 47879, 83 FR 47876, September 21, 2018)
September 18, 2018	Commission's hearing
October 16, 2018	Commission's vote
October 30, 2018	Commission's views

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the “Act”) (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

¹ See the section entitled “The Subject Merchandise” in *Part I* of this report for a complete description of the merchandise subject in this proceeding.

² Pertinent *Federal Register* notices are referenced in appendix A, and may be found at the Commission's website (www.usitc.gov).

³ A list of witnesses appearing at the conference is presented in appendix B of this report.

shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--⁴
In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant. . . In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . . (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—⁵

⁴ Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

⁵ Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

Organization of report

Part I of this report presents information on the subject merchandise, subsidy/dumping margins, and domestic like product. *Part II* of this report presents information on conditions of competition and other relevant economic factors. *Part III* presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. *Parts IV* and *V* present the volume of subject imports and pricing of domestic and imported products, respectively. *Part VI* presents information on the financial experience of U.S. producers. *Part VII* presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

MARKET SUMMARY

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 the production of food, household and personal care products.⁶ The sole U.S. producer of GNA products is PMP, while leading producers of GNA products outside the United States include Xiwang Group, Shandong Fuyang, Shandong Parkson, Zhucheng Dongxiao, Wanshang Group, Shandong Qilu Group, Wefang Honghai, Qingdao, Kehai, Shangdong Kaison, and Shandong Xinhong⁷ of China. The leading U.S. importers of GNA products from China are ***. Leading importers of product from nonsubject countries (Italy and France) include ***. The top purchasers of GNA products include end users ***, and major chemical distributors ***.

Apparent U.S. consumption of GNA products totaled approximately *** (\$****) in 2017. The U.S. producer's U.S. shipments of GNA products totaled *** (\$****) in 2017, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 10.5 million dry pounds (\$7.0 million) in 2017 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled 12.8 million dry pounds (\$9.3 million) in 2017 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

⁶ Petition, Vol. I, p. 6 and PMP's postconference brief, p. 1 and p. 6.

⁷ Petition, exh. I-4, p. 23.

SUMMARY DATA AND DATA SOURCES

A summary of data collected in these investigation(s) is presented in appendix C, table C-1. Except as noted, U.S. industry data is based on the questionnaire response of one firm, PMP, which accounted for all U.S. production of GNA products during 2017. U.S. imports are based on data submitted by eight firms that are believed to have accounted for a vast majority of GNA products imported from China in 2017. The Commission received five foreign producer questionnaires from Chinese firms.⁸

PREVIOUS AND RELATED INVESTIGATIONS

Sodium gluconate (“GNA”) 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.⁹ On June 16, 1981, a petition was filed by Pfizer, Inc. alleging that the European Communities¹⁰ 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.¹¹ On September 16, 1981, Commerce issued a preliminary affirmative determination with respect to the countervailing duty investigation regarding imports of sodium gluconate from the European Communities.¹² 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 manufacturer and exporter of sodium gluconate that accounted for virtually all of the imported subject merchandise.¹³

⁸ The Commission received five Chinese foreign producer questionnaires from Shandong Fuyang Bio-tech. Co., Ltd, Shandong Baisheng Biotechnology Co., Ltd, Shandong Xiwang Sugar Industry Co., Ltd, Zhucheng Dongxiao Biotechnology Co., Ltd., and Shandong Kaison Biochemical Co. Ltd.

⁹ 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.

¹⁰ Ten preliminary investigations were originally instituted and designated as *Sodium Gluconate from Belgium (701-TA-69); Denmark (701-TA-70); the Federal Republic of Germany (701-TA-71); France (701-TA-72); Greece (701-TA-73); Ireland (701-TA-74); Italy (701-TA-75); Luxembourg (701-TA-76); the Netherlands (701-TA-77); and the United Kingdom (701-TA-78)*. The Commission re-designated those investigations as *Sodium Gluconate from the European Communities (Inv. No. 701-TA-79)*.

¹¹ *Sodium Gluconate from the European Communities, Inv. No. 701-TA-79 (Preliminary)*, USITC Publication 1169, July 1981, p. 1; and *Sodium Gluconate From Belgium, Denmark, the Federal Republic of Germany, France, Greece, Ireland, Italy, Luxembourg, The Netherlands, and the United Kingdom; Institution of Preliminary Countervailing Duty Investigations and Scheduling of Conference*, 46 FR 32971, June 25, 1981.

¹² *Sodium Gluconate From the European Communities*, 46 FR 40839, August 12, 1981.

¹³ *Suspension of Countervailing Duty Investigation from the European Economic Community*, 46 FR 60288, December 9, 1981.

NATURE AND EXTENT OF SUBSIDIES AND SALES AT LTFV

Subsidies

On September 21, 2018, Commerce published a notice in the *Federal Register* of its Final determination of countervailable subsidies for producers and exporters of GNA products from China.¹⁴ Table I-1 presents Commerce’s findings of subsidization of GNA products in China.

Table I-1
GNA products: Commerce’s final subsidy determination with respect to imports from China

Entity	Final countervailable subsidy margin (percent)
Qingdao Dongxiao Enterprise Co., Ltd	194.67
Shandong Fuyang Biotechnology Co	194.67
Shandong Kaison Biochemical Co Ltd	194.67
Tongxiang Hongyu Chemical Co., Ltd	194.67
All others	194.67

Source: 83 FR 47879, September 21, 2018.

Sales at LTFV

On September 21, 2018, Commerce published a notice in the *Federal Register* of its Final determination of sales at LTFV with respect to imports from China.¹⁵ Table I-2 present Commerce’s dumping margins with respect to imports of product from China.

Table I-2
GNA products: Commerce’s final weighted-average LTFV margins with respect to imports from China

Exporter	Producer	Final dumping margin (percent)
Anhui Xingzhou Medicine Food Co., Ltd	Xiwang Pharmaceutical Co., Ltd	213.15
Anhui Xingzhou Medicine Food Co., Ltd	Zhu Cheng Shuguang Biotech Col., Ltd	213.15
All others		213.15

Source: 83 FR 47877, September 21, 2018.

¹⁴ *Sodium Gluconate, Gluconic Acid, and Derivative Products From the People’s Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination with Final Antidumping Duty Determination*, 83 FR 23899, May 23, 2018.

¹⁵ *Sodium Gluconate, Gluconic Acid, and Derivative Products From the People’s Republic of China: Preliminary Determination of Sales of Less Than Fair Value*, 83 FR 31949, July 10, 2018.

THE SUBJECT MERCHANDISE

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:

The scope of this investigation 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 $\text{NaC}_6\text{H}_{11}\text{O}_7$. 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 $\text{C}_6\text{H}_{12}\text{O}_7$. 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 $\text{C}_6\text{H}_{10}\text{O}_6$. GDL has a CAS registry number of 90-80-2, and can also be called d-glucono-1,5-lactone.

The merchandise covered by the scope of this investigation is currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under subheadings 2918.16.1000, 2918.16.5010, and 2932.20.5020. Merchandise covered by the scope may also enter under HTSUS subheadings 2918.16.5050, 3824.99.2890, and 3824.99.9295. Although the HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes, the written description of the merchandise is dispositive.¹⁶

¹⁶ *Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination with Final Antidumping Duty Determination*, 83 FR 23899, May 23, 2018; *Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Preliminary Determination of Sales of Less Than Fair Value*, 83 FR 31949, July 10, 2018.

Tariff treatment

Based upon the scope set forth by the Department of Commerce, information available to the Commission indicates that the merchandise subject to these investigations is provided for in 2918.16.10, 2918.16.50, and 2932.20.50 the following provisions of the Harmonized Tariff Schedule of the United States (“HTS”). The 2017 general rate of duty is 6 percent *ad valorem* for HTS subheading 2918.16.10, 3.7 percent *ad valorem* for HTS subheading 2918.16.50, and 3.7 percent *ad valorem* for HTS subheading for HTS subheading 2932.20.50. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

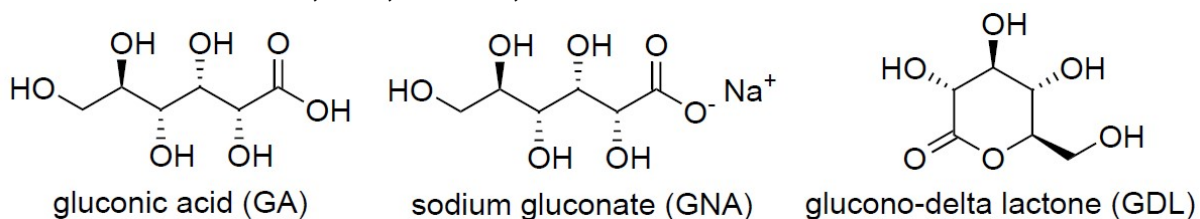
Subheadings 2918.16.10 and 2918.16.50 are included on a list of subheadings for which additional duties may be imposed with respect to products of China, according to a notice issued by the United States Trade Representative and published on July 17, 2018 (83 F.R. 33608). The additional duties (not yet determined) would likely be imposed in addition to the regular general duty rates specified above.

THE PRODUCT

Description and applications

The imported products subject to these investigations 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,” $C_6H_{10}O_6$),¹⁷ (figure I-1) along with liquid gluconate (“LG”),¹⁸ and subject blends. GDL and GNA are sold in dry form, while GA and LG are sold in liquid¹⁹ form (table I-3).²⁰

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



Source: Based on information in PMP’s postconference brief, Attachment S p. 7 and JBL’s postconference brief, Exhibit 7.

¹⁷ GDL is a neutral cyclic ester of GA and can also be denoted as glucono- δ -lactone.

¹⁸ LG, for the purposes of this investigation solely, refers to a blend of gluconic acid and sodium gluconate. 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. Conference transcript, p. 57 (Zinkhon).

¹⁹ Conference transcript p. 30 (Zinkhon).

²⁰ PMP’s postconference brief, p. 6.

**Table I-3
GNA Products Continuum**

<u>Product</u>	<u>Dry</u>	<u>Liquid</u>	<u>Containing Sodium</u>	<u>Sodium Free</u>
GNA	x		x	
LG		x	x	
GA		x		x
GDL	x			x

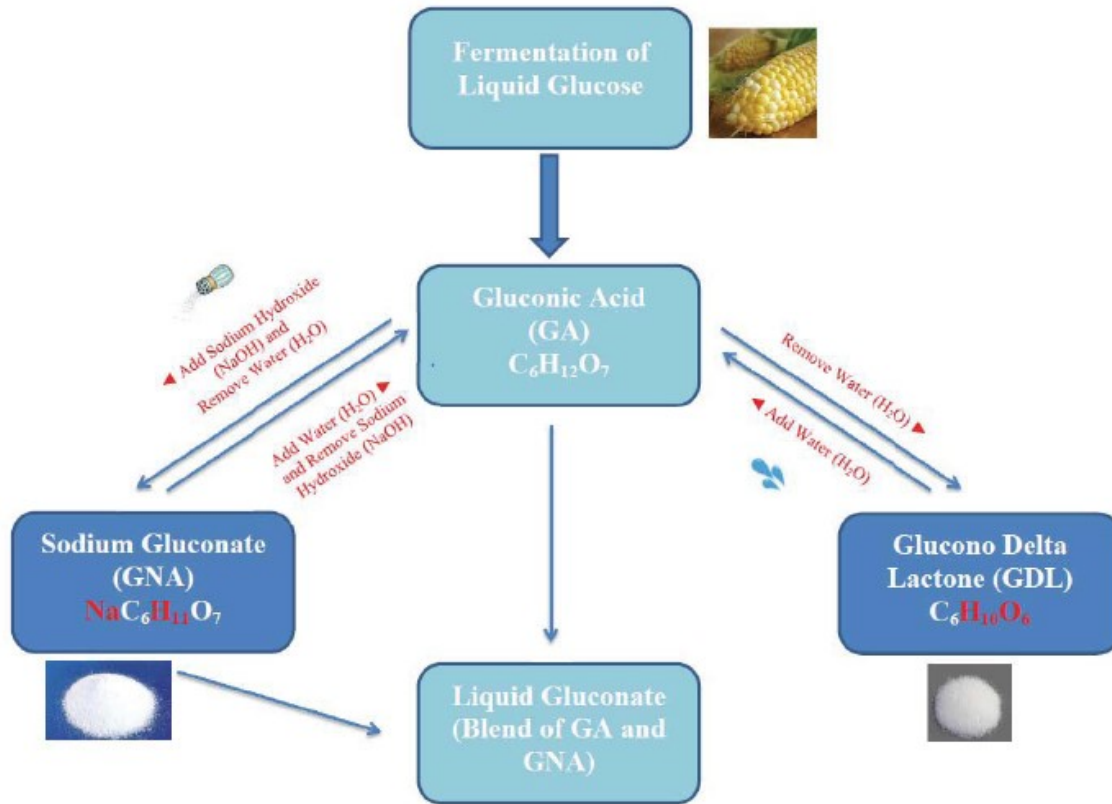
Source: PMP's postconference brief, p.6.

These products are imported under different HTS numbers; however, they are closely related to one another (figure I-2)²¹ and it is easy to convert from one GNA product to another.²²

²¹ Differences in chemical formulas differ to account for sodium and water content. PMP's postconference brief, p. 6.

²² 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. PMP's postconference brief, p. 7.

**Figure I-2:
Relationship and interchangeability between GNA products**



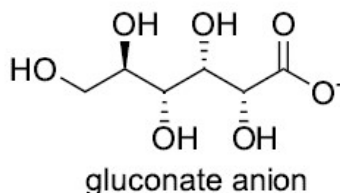
Source: PMP's postconference brief, A.9.

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.²³ 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).²⁴

²³ Petition, Vol. I, p. 7.

²⁴ An anion is an ionic species having negative charge. Conference transcript, p. 84 (Zinkhon).

Figure I-3:
Chemical structure of gluconate anion



Source: NIH TOXNET "Gluconate ion," <https://chem.nlm.nih.gov/chemidplus/rn/608-59-3>, retrieved August 6, 2018.

GNA products are excellent sequestrates and chelators.²⁵ GNA products are also noted for being non-corrosive (resistant to oxidation), non-toxic, and biodegradable.²⁶ These properties make GNA products of great use in a multitude of industries including concrete admixtures, 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.²⁷ 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.²⁸ 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.²⁹ 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.³⁰ In addition to these major sectors, GNA is also employed in mining, textiles, plastics, de-icing,³¹ electroplating, pharmaceuticals, and pulp and paper.³² PMP argues that all GNA products can be used for any application that end users

²⁵ GNA products are noteworthy for excellent chelating power and are useful in eliminating interference from calcium, iron, copper, aluminum, and other 'heavy metals.' Sequestrates form a stable compound with an ion and is sometimes referred to as a chelant. 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.

²⁶ Hearing transcript, pp. 64-65 (Zinkhon).

²⁷ Petition, Vol. I, p. 6.

²⁸ GDL is widely used in tofu production; conference transcript, p. 93 (Zinkhon).

²⁹ Petition, Vol. I, p. 7.

³⁰ 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. Ibid. Hearing transcript, p. 26 (Zinkhon).

³¹ 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. Hearing transcript, p.26 (Zinkhon).

³² 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 August 6, 2018.

ultimately determine which member of the GNA product family to use depending on their particular needs and desired properties.³³

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.³⁴ When other organic acids in powder form (e.g., lactic acid) are added to water, the acid will hydrolyze immediately, while GDL, by comparison, hydrolyzes progressively.³⁵ This property makes GDL desirable for use in the food industry.^{36 37}

The majority of PMP's domestic sales of GNA products consist of GNA, not LG or GA.³⁸ All of PMP's GNA products meet Food Chemical Codex (FCC) standards.^{39 40} PMP contends 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.⁴¹ Respondant state that the vast majority of Valudor's imports consisted of technical grade sodium gluconate that does not meet FCC standards.^{42 43} Comparison of the product specification sheets from the petitioner and the respondent demonstrate that the *** domestic GNA and ****⁴⁴ imported GNA *** meet the standards defined in the FCC, as outlined in table I-4.

³³ PMP's postconference brief, p.6.

³⁴ JBL's postconference brief, p. 16.

³⁵ JBL's postconference brief, p. 16.

³⁶ Conference transcript, p. 99 (Rainville).

³⁷ JBL's postconference brief, p. 16.

³⁸ Petition, Vol. I, p.7. Hearing transcript p. 44 (Zinkhon).

³⁹ Hearing transcript, p.63 (Zinkhon).

⁴⁰ FCC certification signify 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. PMP's posthearing brief, Attachment A-8. FCC "Food Chemicals Codex (FCC)," <https://www.foodchemicalscodex.org/>, retrieved September 25, 2018.

⁴¹ Hearing transcript, p. 61, 63 (Zinkhon).

⁴² 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). Valudor's posthearing brief, p. 7.

⁴³ Hearing transcript, p. 101, 103, 114 (Melamed).

⁴⁴ ***.

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

* * * * *

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.⁴⁵ PMP customers to date have accepted the statement to be equivalent to the certification.^{46 47 48}

Manufacturing processes

As described above, the four in-scope products are closely related.⁴⁹ 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.⁵⁰ PMP is the sole domestic producer of GNA products⁵¹ and describes the production of GNA products as four processes that branch out from a single fermenter (figure I-4).⁵²

⁴⁵ Hearing transcript, p. 64 (Zinkhon).

⁴⁶ Conference transcript, p. 35 (Zinkhon).

⁴⁷ It should be noted that end-uses for GNA products is not solely for food and human consumption, there are a fair amount of industrial uses for GNA products (p. I-12) that do not benefit from non-GMO certification. Hearing transcript, pp. 63-64 (Zinkhon).

⁴⁸ U.S. customers that require GMO-free product as a niche market. JBL’s postconference brief, p. 3.

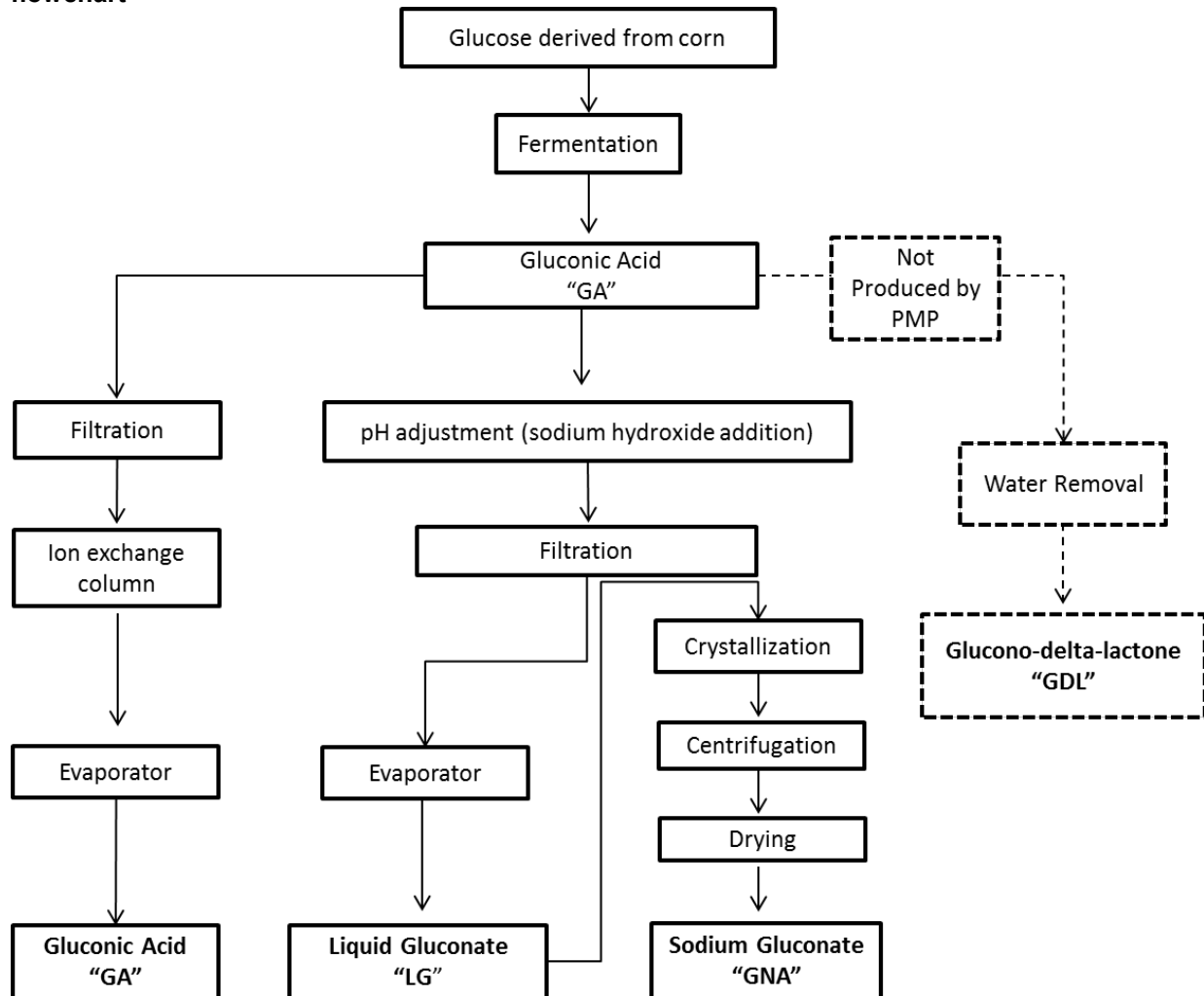
⁴⁹ PMP’s postconference brief, p. 15.

⁵⁰ Hearing transcript, p. 43 (Zinkhon).

⁵¹ PMP does not produce GDL. There has not been a U.S. manufacturer of GDL since 2007. Conference transcript p. 45, (Zinkhon).

⁵² Conference transcript pp. 21, 75 (Zinkhon).

**Figure I-4
GNA products: PMP production
flowchart**



Source: Based on information provided in Petition, Vol. I, pp. 7-9.

The specific downstream processes for GA, LG, and GNA at PMP are detailed as follows.⁵³ First, GA is produced through the fermentation⁵⁴ of glucose.⁵⁵ Glucose can be obtained through the hydrolysis of carbohydrates; liquid corn sugar is the most cost-efficient and commonly used source.⁵⁶ Industrially, glucose is commonly produced through the

⁵³ Petition, Vol. I, pp. 7-9.

⁵⁴ Once fermentation is complete, the liquid is removed and the subsequent product can be used to produce GA, LG, or GNA products. Conference transcript, p. 34 (Zinkhon).

⁵⁵ Conference transcript, p. 21, (Zinkhon).

⁵⁶ Hearing transcript, p. 56 (Zinkhon).

introduction of a fungus, typically *Asper Nigelus*,⁵⁷ to a medium containing liquid corn syrup.^{58 59} The fungus converts glucose into GA through oxidative fermentation.^{60 61} 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).⁶² The resulting chemical reaction yields LG.⁶³ 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.⁶⁴

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,⁶⁵ and subsequently sifted for packaging. There are no intermediate products in the production of sodium gluconate from gluconic acid.⁶⁶

⁵⁷ Conference transcript, p. 87 (Zinkhon).

⁵⁸ Petition, Vol. I, p. 11.

⁵⁹ Air flow, air pressure, agitation, pH and temperature are controlled in the main fermenter to maintain optimum growing conditions for the fungus. Hearing transcript p. 23 (Zinkhon).

⁶⁰ Oxidative fermentation is the most common production method, but glucose can also be chemically oxidized. Zhejiang Tianyi Food Additives utilizes a catalytic oxidative method; Zhejiang Tianyi Food Additives Co., Ltd. "About Us," <http://www.sinotianyi.com/template/about-en.html>, retrieved August 6, 2018.

⁶¹ 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 is not imported into the U.S. Hearing transcript, pp. 60-61 (Zinkhon).

⁶² Also known as caustic soda. Caustic soda is typically produced at chlor-alkali plants, along with the production of chlorine. Chlor-alkali plants in China are running at reduced capacity due to decrease in demand for chlorine coupled with stricter environmental norms being enforced by the Chinese government. Jha, "Caustic soda price spikes on closure of manufacturing plants abroad," *Business Standard*, https://www.business-standard.com/article/markets/caustic-soda-price-spikes-on-closure-of-manufacturing-plants-abroad-118012401781_1.html, retrieved September 25, 2018.

⁶³ LG, is essentially the blending of GA and GNA. Hearing transcript, p. 56 (Zinkhon).

⁶⁴ Petition, Vol. I, p.23.

⁶⁵ Hearing transcript, p. 24 (Zinkhon).

⁶⁶ 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 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. Conference transcript pp. 73-74, p. 88 (Zinkhon).

GDL⁶⁷ is separated from GA by crystallization through the removal of water.^{68 69} GDL can subsequently be converted back to GA upon the addition of water.⁷⁰

The production of GNA products is performed as a continuous fermentation process.⁷¹ A variety of packages are available for GA, GDL, GNA, and LG, including: paper bags, fiber drums, and flexible intermediate bulk containers (“FIBC”).⁷² 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.^{73 74}

DOMESTIC LIKE PRODUCT ISSUES

In the preliminary phase of these investigations, Petitioner PMP proposed that the domestic like product should be defined as GNA, including its related derivatives, LG, GA, GDL, and blended products resulting in a mix that contains 35 percent or more of GNA, GA, LG and/or GDL by dry weight, co-extensive with Commerce’s scope.⁷⁵

During the preliminary phase of these investigations, respondent JBL contended that GDL should be considered as a separate like product.⁷⁶ JBL pointed out that GDL is not produced by the domestic industry and argue that it is somewhat different chemically since it contains unique properties that cannot be found in other GNA products.⁷⁷

If there are like product issues, the Commission’s decision regarding the appropriate domestic product(s) that are “like” the subject imported product is based on a number of factors including: (1) physical characteristics and uses; (2) common manufacturing facilities and production employees; (3) interchangeability; (4) customer and producer perceptions; (5) channels of distribution; and (6) price. Information regarding these factors is discussed below.

⁶⁷ Also known as glucono-1,5-Lactone.

⁶⁸ Jungbunzlauer “Glucono-delta-Lactone: General Information” <http://www.jungbunzlauer.com/en/products/gluconates/glucono-delta-lactone.html>, retrieved August 6, 2018.

⁶⁹ “In other words, GDL is the dry form of GA;” Conference transcript, p. 22 (Zinkhon).

⁷⁰ 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.

⁷¹ Hearing transcript, p.23 (Zinkhon).

⁷² Hearing transcript, p. 24 (Zinkhon).

⁷³ Conference transcript, p. 131 (Torres).

⁷⁴ PMP also sells 25 kg or 1-ton bulk bags of GNA, 55 gallon drums of GA or LG; PMP “Products” <http://www.pmpinc.com/Products/>, retrieved August 6, 2017.

⁷⁵ Petition, Vol. I, p. 10 and PMP’s postconference brief, p. 5.

⁷⁶ Conference transcript, p. 116 (Waite) and JBL’s postconference brief, p. 21.

⁷⁷ Respondent JBL’s postconference brief, pp. 12-13 and conference transcript, p. 116 (Waite).

During the preliminary phase of these investigations, the Commission rejected JBL's request to define GDL as a separate domestic like product.⁷⁸

Physical characteristics and uses

Petitioner PMP asserted that all GNA products are derived primarily from liquid corn syrup, have the same basic chemical makeup and only differ based on sodium and water content.⁷⁹ PMP reports that GNA products are available in two forms, 1) semi-clear liquid form (GA and LG) or 2) a dry, white powder form (GNA and GDL) and share common end uses.⁸⁰ PMP stated that GNA products are typically used in a wide variety of industrial and agricultural applications, including concrete, fertilizer, soaps & detergents, industrial cleaners, metal cleaning, food, healthcare, general chelation, and de-icing.⁸¹

JBL asserted that in contrast to other GNA products, GDL is primarily used in food products as a controlled release acidifier in dairy products, a coagulant in tofu, a curing accelerator in meat products, a chelating agent in seafood, a leavening agent in bakery products, and a mild acidulant and preservative agent in prepared salads, dressings, and sauces.⁸² JBL also reported that GDL is used in personal care products such as skin care products.⁸³

The Commission stated that the record indicated that all GNA products share the same basic physical characteristics.⁸⁴

Manufacturing facilities and production employees

PMP stated that the GNA products it produces are manufactured in the same facility using the same production process and that minor variations in production (e.g. the addition or removal of sodium hydroxide and the removal or addition of water) may occur depending on the final product.⁸⁵

JBL argued that, in contrast to the production of other GNA products which require a two-step process to produce sodium gluconate, the production of GDL is carried out via a one-step process.⁸⁶

⁷⁸ *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France, Inv. Nos. 701-TA-590 and 731-TA-1397-98 (Preliminary)*, USITC Pub. 4756 (January 2018), p. 7.

⁷⁹ PMP's postconference brief, p. 6.

⁸⁰ Petition, Vol. I, p. 11 and PMP's postconference brief, p. 6.

⁸¹ Petition, Vol. I, p. 11.

⁸² JBL's postconference brief, pp. 14-15.

⁸³ JBL's postconference brief, pp. 14-15.

⁸⁴ *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France, Inv. Nos. 701-TA-590 and 731-TA-1397-98 (Preliminary)*, USITC Pub. 4756 (January 2018), p. 12.

⁸⁵ Petition, Vol. I, p. 12 and Petitioner's postconference brief, p. 8.

⁸⁶ JBL's postconference brief, pp. 17-18.

Interchangeability

PMP claimed that GNA products are “typically comparable” in quality and “highly interchangeable” because they differ only by sodium and water content.⁸⁷ PMP also reported that customers use GNA products interchangeably depending on whether a liquid or dry-end product is desired and that one GNA product can easily be converted to another with the addition or removal of water.⁸⁸ JBL argued that other GNA products do not contain the same unique pH adjusting property as GDL and therefore cannot be substituted for GDL.⁸⁹ In its preliminary phase determination, the Commission stated that while different GNA products may be more suited to certain end uses because of their specific properties, the record indicated a general interchangeability between GNA products and a substantial overlap in their end uses.⁹⁰

Customer and producer perceptions

PMP reported that customers generally consider all GNA products as belonging to one family of products and perceive GNA products to be the same because they are commodity products.⁹¹ JBL argued that GDL is not comparable in terms of customer and producer perceptions. JBL also asserted that customers perceive GDL differently compared to other GNA products due to its chemical makeup and primary uses in the processing of food products.⁹² In its preliminary phase determination, the Commission stated that domestically produced GNA products are perceived to be part of an overall family of GNA products.⁹³

Channels of distribution

PMP reported that all GNA products, including GDL, are sold directly to end users and distributors.⁹⁴ JBL as stated that all GNA products are sold through the same channels of distribution and either sold directly to end users and/or distributors.⁹⁵ In its preliminary determination, the Commission stated that GNA products are sold in comparable channels of distribution.⁹⁶

⁸⁷ Petition, Vol. I, p. 11 and Petitioner’s postconference brief, p. 6.

⁸⁸ Petition, Vol. I, p. 11 and PMP’s postconference brief, p. 7.

⁸⁹ JBL’s postconference brief, p. 16.

⁹⁰ *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France, Inv. Nos. 701-TA-590 and 731-TA-1397-98 (Preliminary)*, USITC Pub. 4756 (January 2018), p. 12.

⁹¹ Petition, Vol. I, p. 11; PMP’s postconference brief, p. 8.

⁹² JBL’s postconference brief, p. 18.

⁹³ *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France, Inv. Nos. 701-TA-590 and 731-TA-1397-98 (Preliminary)*, USITC Pub. 4756 (January 2018), p. 12.

⁹⁴ Conference transcript, p. 55 (Zinkhon), p. 41(Spooner) and PMP’s postconference brief, p. 8.

⁹⁵ JBL’s postconference brief, p. 18.

⁹⁶ *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France, Inv. Nos. 701-TA-590 and 731-TA-1397-98 (Preliminary)*, USITC Pub. 4756 (January 2018), p. 12.

Price

PMP stated that GDL is priced higher than other GNA products because it requires an additional step in production to dry gluconic acid,⁹⁷ but contends that GNA products are commodity products.⁹⁸ Respondent JBL argued that GDL is priced differently and is often priced as much as two times higher than the price of other GNA products.⁹⁹

⁹⁷ Conference transcript, pp. 41-42 (Spooner).

⁹⁸ PMP's postconference brief, p. 8 and Petition, Vol. I, p. 12.

⁹⁹ Conference transcript, p. 100 (Waite).

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

U.S. MARKET CHARACTERISTICS

GNA products include sodium gluconate (“GNA”), gluconic acid (“GA”), liquid gluconate (“LG”, a blend of GA and GNA), and glucono-delta-lactone (“GDL”). The majority of Petitioner PMP’s sales were of GNA, but PMP also sells LG and GA. PMP does not manufacture GDL, but imports it from Italy. Reported imports from China were almost entirely of GNA, with GDL accounting for the remainder. Most imports of GNA products are in powder or crystal form to minimize shipping costs.¹

GNA products have a wide variety of uses including concrete, fertilizer, soaps and detergents, industrial cleaners, health care products, and road de-icing.² *** uses were the largest applications for PMP’s sales of GNA products.³ JBL stated that the primary uses of GDL are food and personal care products whereas the primary uses of GNA, LG, and GA are industrial applications.⁴

PMP manufactures all of its GNA products to Food Chemical Codex (“FCC”) standards.⁵ PMP stated that the Chinese producers manufacture a technical grade product, but that it is made using a different production process, is of lower quality, and is not exported to the U.S. market.⁶ Products that have imperfections (such as being off-color) that may not be accepted by the food industry are sold to the concrete industry.⁷

Apparent U.S. consumption of GNA products increased by *** percent during 2015-2017. In addition, apparent U.S. consumption of GNA products was *** percent higher in January-June 2018 than in January-June 2017.

U.S. PURCHASERS

The Commission received 23 usable questionnaire responses from firms that had purchased GNA products during 2015-17.⁸ Eleven responding purchasers are end users, ten are distributors, three firms described themselves as manufacturers, and two firms described themselves as blenders. The responding purchasers represented firms in a variety of domestic industries, including agricultural, concrete, food and beverage, health care, household and industrial cleaners, personal care, pharmaceutical, and textiles. Large purchasers of GNA products include ***, ordered from largest to smallest in terms of quantity purchased in 2017.

¹ GNA and GDL are dry forms and LG and GA are liquids.

² Conference transcript, pp. 23-24 (Zinkhon).

³ Petition, exh. I-8.

⁴ Conference transcript, pp. 99-100 (Rainville).

⁵ Conference transcript, p. 35 (Zinkhon).

⁶ Conference transcript, p. 48 (Zinkhon).

⁷ Conference transcript, pp. 62-63 (Zinkhon) and PMP’s postconference brief, attach. A, p. 1.

⁸ Of the 23 responding purchasers, 18 purchased the domestic GNA products, 8 purchased imports of the subject merchandise from China, and 16 purchased imports of GNA products from other sources.

CHANNELS OF DISTRIBUTION

U.S. producer PMP and importers sold mainly to end users, as shown in table II-1. Domestic product and nonsubject imports were also shipped to distributors. *** GNA products imported from China ***.

Table II-1

GNA products: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2015-2017, January to June 2017, and January to June 2018

* * * * *

PMP stated that about 70 percent of its sales are to end users and about 30 percent through distributors. It added that the large international global distributors may carry GNA products from multiple sources while smaller regional distributors tend to work with a single supplier.⁹ PMP's smallest containers for liquid products are 55 pound drums, so distributors may repackage into smaller containers for certain customers.¹⁰

GEOGRAPHIC DISTRIBUTION

U.S. producer PMP and responding importers of Chinese product reported selling GNA products to all regions in the contiguous United States (table II-2). For the U.S. producer, *** percent of sales were within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold 78 percent within 100 miles of their U.S. point of shipment, 18 percent between 101 and 1,000 miles, and 3 percent over 1,000 miles.

⁹ Conference transcript, pp. 55-56 (Zinkhon).

¹⁰ Conference transcript, p. 56 (Zinkhon).

Table II-2
GNA products: Geographic market areas in the United States served by U.S. producer PMP and importers

Region	U.S. producer	Importers (Number of firms)
Northeast	***	1
Midwest	***	2
Southeast	***	3
Central Southwest	***	3
Mountain	***	2
Pacific Coast	***	5
Other ¹	***	---
All regions (except Other)	***	---
Reporting firms	***	6

¹ All other U.S. markets, including AK, HI, PR, and VI.

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

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

China is by far the world's largest producer of gluconates, accounting for *** of worldwide production capacity, with the remainder of capacity in Europe and the United States.¹¹ One U.S. producer, two European producers (JBL in France and Roquette in Italy), and a large number of Chinese producers supply GNA products to the U.S. market.¹² Table II-3 provides a summary of the supply factors regarding GNA products from U.S. producers and from China.

Table II-3
GNA products: Supply factors that affect the ability to increase shipments to the U.S. market

* * * * *

Domestic production

Based on available information, U.S. producer PMP has the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of U.S.-produced GNA products to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and inventories and some ability to shift

¹¹ *Chemical Economics Handbook: Chelating Agents*, IHS, May 2017, p. 12.

¹² The petition listed 10 producers of GNA products in China. Petition, exh. I-4, p. 23. JBL states that there are approximately 40 producers of sodium gluconate in China. JBL's postconference brief, p. 6.

shipments from alternate markets, mitigated by an inability to shift production to or from alternate products.

Domestic capacity was stable, and capacity utilization increased during 2015-17. PMP's exports, as a percentage of total shipments, decreased slightly. The ratio of inventories to total shipments decreased slightly. PMP reported that it also produces ***¹³ on the same equipment used to produce GNA products. These products accounted for about *** percent of PMP's total production on the same equipment during the period. PMP indicated it was *** to switch production between GNA products and these other products. PMP stated that its principal export markets are ***.

Subject imports from China

Based on available information, Chinese producers of GNA products have the ability to respond to changes in demand with large changes in the quantity of shipments of GNA products to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the ability to shift shipments from alternate markets.

Imports from nonsubject sources

Nonsubject imports accounted for 55 percent of total U.S. imports in 2017. France accounted for almost all nonsubject imports during January 2015-June 2018, followed by Italy. Petitioner PMP imports GDL from Italy.¹⁴

Supply constraints

PMP reported no supply constraints for its GNA products since January 1, 2015. Most importers (6 of 7) also reported no constraints in their ability to supply GNA products. One importer (***) reported supply issues with product from China during the fourth quarter of 2017 resulting from raw material shortages for sodium hydroxide and caustic soda beads, and from high demand in China.¹⁵ Two of the 23 reporting purchasers, ***, reported supply constraints. *** reported that JBL sometimes has limited capacity to supply customers in the North American market. *** reported that PMP had production problems for a short time.

New suppliers

Two of 23 purchasers indicated that new suppliers entered the U.S. market since January 1, 2015. Purchaser *** reported many new Chinese suppliers. Purchaser *** cited new Chinese suppliers Anhui Xinzhou and Shandong Baisheng.

¹³ ***. Email from PMP's counsel, January 2, 2018.

¹⁴ Conference transcript, p. 44 (Zinkhon). ***.

¹⁵ ***.

U.S. demand

Based on available information, the overall demand for GNA products is likely to experience small changes in response to changes in price. The main contributing factors are the limited range of substitute products and the small cost share of GNA products in most of its end-use products.

End uses and cost share

U.S. demand for GNA products depends on the demand for U.S.-produced downstream products. End uses include concrete, food, personal care/household products, dishwasher detergent, and fertilizer. Industrial/institutional and construction were the largest end-use categories for GNA products in the U.S. market, followed by food and agriculture.¹⁶

GNA products account for a small share of the cost of end-use products. *** reported cost shares for some end uses as follows: fertilizer (2 percent), concrete (5 percent), and soap and detergent (3 percent).¹⁷

Business cycles

PMP and most responding importers indicated that the GNA products market was not subject to business cycles. One importer, ***, reported seasonality in the agricultural market.¹⁸ ¹⁹ One purchaser, ***, which serves the agricultural industry, reported seasonality in the GNA products market.

Demand trends

According to PMP, the U.S. market for GNA products has experienced strong growth (6 percent annually) over the past 10 years, and is expected to continue to grow.²⁰ It stated that

¹⁶ In its posthearing brief, petitioner provided PMP's sales of GNA products by end-use segment during the POI. In 2017, construction and industrial/institutional end uses were the largest end-use categories for GNA products sold by PMP, representing ***. In 2017, agriculture end uses represented *** of PMP's sales of GNA products, compared to *** in 2015. In 2017, food end uses represented *** of PMP's sales of GNA products, compared to *** in 2015. Petitioner's posthearing brief, Attachment A-2, p. 1.

¹⁷ ***.

¹⁸ *** were to the agricultural market, with peak consumption from January to May.

¹⁹ In the preliminary phase of the investigations, two importers, ***, reported seasonality in the concrete market. They reported higher demand in the summer because of more construction activity and because a higher concentration of retarders is required to achieve the same retardation effect in warmer weather.

²⁰ Conference transcript, p. 27 (Zinkhon).

GNA products are used increasingly over other products because they are biodegradable, biorenewable, and environmentally friendly. One area of increased demand is road de-icing.²¹

Most importers reported that U.S. demand for GNA products since January 1, 2015 has not changed or has fluctuated. A plurality of purchasers reported that U.S. demand for GNA products has increased since January 1, 2015 (table II-4). One purchaser, ***, pointed to an increase in its *** as a reason for an increase in demand.

Table II-4

GNA products: Firms' responses regarding U.S. demand and demand outside the United States

Item	Increase	No change	Decrease	Fluctuate
Demand in the United States				
U.S. producers	***	***	***	***
Importers	1	2	---	3
Purchasers	6	4	2	3
Demand outside the United States				
U.S. producers	***	***	***	***
Importers	---	2	---	3
Purchasers	2	4	---	2
Demand for end use product(s)				
Purchasers	6	3	4	2

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

*** reported no change in demand outside the United States, stating that the largest single use outside the United States is concrete admixture, and that overall construction trends have been flat, resulting in limited growth for GNA. It also stated that outside of the U.S. market relatively newer applications such as fertilizer and road de-icing have not widely utilized GNA.

Substitute products

Substitutes for GNA products are limited. *** responding importers reported that there were no substitutes for GNA products. Most responding purchasers (20 of 22) reported that there were no substitutes for GNA products. Purchaser *** reported that *** could substitute for GNA products in the production of ***. Purchaser *** reported that ***.

SUBSTITUTABILITY ISSUES

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

²¹ Conference transcript, p. 29 (Zinkhon). In its preliminary questionnaire response, PMP reported that U.S. demand ***. In its final questionnaire response, PMP reported that U.S. demand ***.

Lead times

GNA products are primarily sold from inventory. PMP reported that *** sales were from inventory in 2017, with lead times averaging *** days. Nearly 90 percent of reported import sales were from U.S. inventories with an average reported lead times of 4 days.

Knowledge of country sources

Eighteen of 23 purchasers indicated they had marketing/pricing knowledge of domestic product, 9 of Chinese product, and 13 of product from nonsubject countries.

As shown in table II-5, most purchasers and their customers “never” make purchasing decisions based on the producer or country of origin. Seven purchasers reported that they always make decisions based on the manufacturer, citing that the producer needs to be a qualified vendor of GNA products, customer specifications, existing relationship, and pricing.

Table II-5
GNA products: Purchasing decisions based on producer and country of origin

Purchaser/customer decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	7	1	4	11
Purchaser’s customers make decision based on producer	2	2	4	12
Purchaser makes decision based on country	5	1	3	13
Purchaser’s customers make decision based on country	1	---	5	13

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

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for GNA products were price or cost (20 firms), quality (17 firms), and availability/supply (14 firms) as shown in table II-6. Quality was the most frequently cited first-most important factor (cited by 10 firms), followed by price (6 firms). Availability/supply was the most frequently reported second-most important factor (8 firms), and price was the most frequently reported third-most important factor (10 firms).

Table II-6
GNA products: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Price / Cost	6	5	10	20
Quality	10	6	3	17
Availability / Supply	1	8	5	14
Relationship with supplier	2	1	2	5
All other factors ¹	7	4	2	13

¹ Other factors include customer approval (2 purchasers), product range (2 purchasers), delivery terms (1 purchaser), and credit terms (1 purchaser).

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

A plurality of purchasers (9 of 23) reported that they only “sometimes” purchase the lowest-priced product, followed by six purchasers that reported that they “usually” purchase the lowest-priced product, and six purchasers that “never” purchase the lowest-priced product.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-7). The factors rated as very important by more than three-quarters of responding purchasers were availability (23), reliability of supply (23), product consistency (22), quality meets industry standards (21), delivery time (19), and price (19).

Table II-7
GNA products: Importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	23	---	---
Reliability of supply	23	---	---
Product consistency	22	1	---
Quality meets industry standards	21	2	---
Delivery time	19	4	---
Price	19	4	---
Quality exceeds industry standards	13	8	2
U.S. transportation costs	12	7	3
Minimum quantity requirements	9	8	6
Delivery terms	6	17	---
Packaging	7	14	2
Extension of credit	4	12	7
Technical support/service	9	11	3
Product range	6	10	7
Discounts offered	7	9	7

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

Supplier certification

Most (15 of 23) responding purchasers require their suppliers to become certified or qualified to sell GNA products to their firm. Purchasers reported that the time to qualify a new supplier ranged from 5 to 240 days. A majority (8 of 14) of purchasers reported 30 days or less to qualify a new supplier. One of 23 purchasers, ***, reported that multiple Chinese producers had failed in their attempts to qualify GNA products due to failed quality specifications.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since January 1, 2015 (table II-8). Ten purchasers reported increasing their purchases of domestic GNA products, while four purchasers reported increasing their purchases from China. Reasons reported for changes in sourcing included competitive pricing, customer requirements, and product quality. Eleven of 23 responding purchasers reported that they had changed suppliers since January 1, 2015. Specifically, firms dropped or reduced purchases from domestic

producer PMP because of competitive pricing from other suppliers. Firms added or increased purchases from PMP because of existing supplier relationships.

Table II-8

GNA products: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	2	4	10	2	3
China	8	2	4	2	1
Nonsubject sources	3	4	3	3	3

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

Importance of purchasing domestic product

Twenty-one of 23 purchasers reported that most or all of their purchases did not require purchasing U.S.-produced product. Four purchasers reported that domestic product was required by their customers (ranged from 50 to 100 percent of their purchases). One purchaser reported other preferences for domestic product including customer preference and reliability of supply. One purchaser, ***, reported only sourcing liquid GNA products from the domestic producer due to high international shipping costs.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing GNA products produced in the United States, China, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table II-9) for which they were asked to rate the importance.

Most purchasers reported that U.S. and subject GNA products were comparable on most factors, except that the U.S. product was superior with respect to delivery terms, delivery time, minimum quantity requirements, technical support/service, and U.S. transportation costs. Two of these four factors, delivery time and U.S. transportation costs, were rated as very important by a majority of purchasers (see table II-7). Purchasers that compared domestic GNA products with that from nonsubject sources reported that the sources were comparable across all factors.

Table II-9

GNA products: Purchasers' comparisons between U.S.-produced and imported product

Factor	U.S. vs. China			U.S. vs. Nonsubject sources			China vs. Nonsubject sources		
	S	C	I	S	C	I	S	C	I
Availability	4	8	---	2	10	---	---	7	---
Delivery terms	7	5	---	3	9	---	---	6	2
Delivery time	7	5	---	4	7	1	---	6	2
Discounts offered	1	6	1	1	10	---	---	6	---
Extension of credit	4	5	1	1	8	1	---	6	1
Minimum quantity requirements	6	5	---	4	7	---	---	6	---
Packaging	2	10	---	1	9	2	---	7	---
Price ¹	---	7	6	1	9	3	3	5	---
Product consistency	3	9	---	1	11	---	---	6	1
Product range	3	9	---	1	9	1	---	7	---
Quality meets industry standards	2	10	---	---	12	---	---	7	---
Quality exceeds industry standards	4	8	---	1	11	---	---	5	1
Reliability of supply	5	7	---	3	8	1	---	7	---
Technical support/service	6	6	---	3	9	---	---	6	1
U.S. transportation costs ¹	7	4	1	3	7	3	1	5	1

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

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

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

Comparison of U.S.-produced and imported GNA products

In order to determine whether U.S.-produced GNA products can generally be used in the same applications as imports from China, U.S. producers, importers, and purchasers were asked whether the products can "always", "frequently", "sometimes", or "never" be used interchangeably. As shown in table II-10, U.S. producer PMP reported that U.S.-produced GNA products can *** be used interchangeably with GNA products from China and nonsubject countries. An equal number of importers (2) reported that U.S.-produced GNA products can always and sometimes be used interchangeably with GNA products from China. One importer, ***, reported that ***. *** also reported that several customers in ***. Most purchasers reported that U.S.-produced GNA products can frequently be used interchangeably with GNA products from China. Purchaser *** reported that U.S.-produced GNA products can "sometimes" be used interchangeably with GNA products from China when GNA products from both sources are FSMA and FCC compliant.

Table II-10
GNA products: Interchangeability between GNA products produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries: U.S. vs. China	***	***	***	***	2	1	2	---	3	7	2	---
Nonsubject countries comparisons: U.S. vs. nonsubject	***	***	***	***	2	1	1	---	7	7	1	---
China vs. nonsubject	***	***	***	***	2	1	1	---	2	5	2	1

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

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

As can be seen from table II-11, most responding purchasers reported that domestically produced GNA products and GNA products imported from China “always” met minimum quality specifications. One purchaser, ***, reported that GNA products imported from China “never” met minimum quality specifications due to the ***. Purchaser *** also reported that GNA products imported from China “usually” met minimum quality specifications, but noted that GNA products from China may not have met minimum quality specifications due to crystal size specifications, as well as the quality and consistency of the product.

Table II-11
GNA products: Ability to meet minimum quality specifications, by source¹

Source	Always	Usually	Sometimes	Rarely or never
United States	15	2	---	---
China	7	4	---	1
Other	14	3	---	---

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

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

In addition, producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of GNA products from the United States, China, or nonsubject countries. As seen in table II-12, U.S. producer PMP reported that differences other than price were *** significant in sales of GNA products from the United States and China. Most importers reported that differences other than price were “sometimes” or “never” significant in sales of GNA products from the United States and China. In contrast, a plurality of purchasers reported that differences other than price were “always” significant in sales of GNA products from the United States and China. Purchaser *** reported that GNA products from the United States offer better lead times and transportation than product from China. Purchaser *** stated that the U.S. producer always produces a quality and consistent product with no supply issues. Purchaser *** reported that the firm does not trust the quality

or the availability of GNA products from China and tries to avoid them where possible, but that its customers will frequently purchase GNA products from China due to favorable prices.

Table II-12
GNA products: Significance of differences other than price between GNA products produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries: U.S. vs. China	***	***	***	***	1	---	2	2	5	3	2	2
Nonsubject countries comparisons: U.S. vs. nonsubject	***	***	***	***	---	---	1	2	7	3	4	1
China vs. nonsubject	***	***	***	***	---	---	1	2	3	2	4	1

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

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

ELASTICITY ESTIMATES

This section discusses elasticity estimates; parties are encouraged to comment on these estimates and should do so as an attachment to their prehearing or posthearing brief.

U.S. supply elasticity

The domestic supply elasticity²² for GNA products measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of GNA products. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced GNA products. Analysis of these factors above indicates that the U.S. industry has the ability to somewhat increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 8 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for GNA products measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of GNA products. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the GNA products in the production of any downstream products. Based on the available information, the aggregate demand for GNA products is likely to be inelastic; a range of -0.2 to -0.7 is suggested.

²² A supply function is not defined in the case of a non-competitive market.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.²³ Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced GNA products and imported GNA products is likely to be in the range of 3 to 6.

²³ The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

PART III: U.S. PRODUCER’S PRODUCTION, SHIPMENTS, AND EMPLOYMENT

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise, along with pricing of domestic product, is presented in *Part IV* and *Part V* respectively. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire response of one firm that accounted for the *** percent of U.S. production of GNA products during 2017.

U.S. PRODUCER

Table III-1 lists U.S. producer’s production location, position on the petition, and share of total production. PMP, ***¹, is the sole domestic producer of GNA and GNA related products.^{2 3} Headquartered in Peoria, Illinois, PMP acquired its current production facility from Pabst Brewing Company in 1985 and began producing dry sodium gluconate at the facility in 1987.⁴ PMP was subsequently acquired by Fuso in 2003.⁵

**Table III-1
GNA products: U.S. producer of GNA products, position on the petition, production location, and share of reported production, 2017**

Firm	Position on petition	Production location(s)	Share of production (percent)
PMP	Support	Peoria, Illinois	***
Total			***

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

Table III-2 presents information on U.S. producer’s ownership, related and/or affiliated firms of GNA products.

¹ ***.

² *PMP Fermentation Products Inc. webpage*, <http://www.pmpinc.com/About/>, retrieved December 18, 2017.

³ Conference transcript, p. 7 (Spoooner).

⁴ Petition, p. 2.

⁵ *PMP Fermentation Products Inc. webpage*, <http://www.pmpinc.com/About/>, retrieved December 18, 2017.

**Table III-2
GNA products: U.S. producer's ownership, related and/or affiliated firms**

Item / Firm	Firm	Affiliate/Ownership
Ownership:		
PMP	***	***

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

As indicated in table III-2, PMP is related to a foreign producer, Fuso Chemical Co., Ltd located in Japan, but not related to any U.S. importers of the subject merchandise. In addition, as discussed in greater detail below, PMP directly imports GNA products, specifically GLD, from Italy, but did not purchase the subject merchandise from U.S. importers.

Table III-3 presents the U.S. producer's reported changes in operations since January 1, 2015.

**Table III-3
GNA products: U.S. producer's reported changes in operations, since January 1, 2015**

* * * * *

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-4 and figure III-1 present the U.S. producer's production, capacity, and capacity utilization. Capacity remained constant throughout the period of investigation at *** dry pounds from 2015 to 2017 and *** dry pounds in January to June 2017 and January to June 2018. Production increased by *** percent (** dry pounds), from 2015 to 2017, and was *** percent higher in January to June 2018 compared to January to June 2017. Capacity utilization increased by *** percentage points from 2015 to 2017 and was *** percentage points higher in January to June 2018 compared to January to June 2017.

**Table III-4
GNA products: U.S. producer's production, capacity, and capacity utilization, 2015-2017, January to June 2017, and January to June 2018**

* * * * *

**Figure III-1
GNA products: U.S. producer's production, capacity, and capacity utilization, 2015-2017, January to June 2017, and January to June 2018**

* * * * *

Alternative products

As shown in table III-5, *** percent of PMP's production was subject product in 2017. From 2015 to 2017, PMP reported producing between *** dry pounds of out-of-scope products, representing *** percent of total production. Though production of GNA products increased, production of out-of-scope products increased at a greater rate.

Table III-5

GNA products: U.S. producer's overall plant capacity and production on the same equipment as subject production, 2015-2017, January to June 2017, and January to June 2018

* * * * *

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

Table III-6 presents U.S. producer's U.S. shipments, export shipments, and total shipments. From 2015 to 2017, PMP's U.S. shipments increased by *** percent by quantity and *** percent by value, corresponding total shipments increased *** percent by quantity and *** percent by value. In January-June 2018 PMP's U.S. shipments were *** percent and *** percent higher by quantity and value, respectively, compared to January-June 2017. PMP's U.S. shipments represented *** percent by quantity and *** percent by value of its total shipments in 2017.

Table III-6

GNA products: U.S. producer's U.S. shipments, exports shipments, and total shipments, 2015-2017, January to June 2017, and January to June 2018

* * * * *

Table III-7 presents the U.S. producer's U.S. shipments by product type. PMP's U.S. shipments of sodium gluconate increased by *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 compared to January-June 2017. On a quantity basis, sodium gluconate represented *** percent of PMP's U.S. shipments of GNA products in 2017. PMP's U.S. shipments of gluconic acid increased by *** percent from 2015 to 2017, and were *** percent higher in January-June 2018 compared to January-June 2017. On a quantity basis, gluconic acid represented *** percent of PMP's U.S. shipment by product type in 2017. PMP's U.S. shipment of liquid gluconate increased by *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 than in January-June 2017. On a quantity basis, liquid gluconate represented *** percent of PMP's U.S. shipments by product type in 2017, an increase of *** percentage points from 2015.

Table III-7

GNA products: U.S. producer's U.S. shipments by product type, 2015-17, January to June 2017, and January to June 2018

* * * * *

U.S. PRODUCER'S INVENTORIES

Table III-8 presents the U.S. producer's end-of-period inventories and the ratio of these inventories to production, U.S. shipments, and total shipments. PMP's GNA products inventory decreased by *** percent from 2015 to 2017, and were *** percent lower during January-June 2018 compared to January-June 2017. As a ratio to its total shipments, its end of period inventories decreased by *** percentage points, and were *** percentage points lower in interim 2018 compared with interim 2017.

Table III-8
GNA products: U.S. producer's inventories, 2015-17, January to June 2017, and January to June 2018

* * * * * * *

U.S. PRODUCER'S IMPORTS AND PURCHASES

The U.S. producer's imports and purchases of GNA products are presented in table III-9. PMP's reported imports of GNA products are solely and only GDL and were imported from Italy. These imports represented between *** percent of PMP's U.S. production of GNA products. PMP's imports were relatively stable and ranged from *** dry pounds from 2015 to 2017, and were *** percent higher during interim 2018 compared to interim 2017.

Table III-9
GNA products: U.S. producer's imports, 2015-17, January to June 2017, and January to June 2018

* * * * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-10 shows the U.S. producer's employment-related data. The number of production and related workers ("PRW") ranged from *** workers from 2015 through January to June 2018. Total hours worked per PRW increased by *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 compared to January-June 2017. Wages paid increased by *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 compared to January-June 2017. Productivity, as measured by pounds produced per hour, increased by *** percent from 2015 to 2017, and was *** percent higher during January-June 2018 compared to January-June 2017. Unit labor cost per 1,000 dry pounds *** from 2015 to 2017, and was *** percent higher during interim 2018 compared with interim 2017.

Table III-10
GNA products: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2015-17, January to June 2017, and January to June 2018

* * * * * * *

PART IV: U.S. IMPORTS, APPARENT U.S. CONSUMPTION, AND MARKET SHARES

U.S. IMPORTERS

The Commission issued importer questionnaires to 65 firms believed to be importers of subject GNA products, as well as to all U.S. producers of GNA products.¹ Usable questionnaire responses were received from eight companies, representing a vast majority of U.S. imports from China between 2015 to 2017 under HTS subheading 2918.16.1000, 2918.16.5010, and 2932.20.5020. Table IV-1 lists all responding U.S. importers of GNA products from China and other sources, their locations, and their shares of U.S. imports, in 2017.

Table IV-1
GNA products: U.S. importers, their headquarters, and share or total imports by source, 2017

Firm	Headquarters	Share of imports by source (percent)		
		China	Nonsubject sources	All import sources
Brenntag	Reading, PA	***	***	***
Connell	San Francisco, CA	***	***	***
IMI	New Orleans, LA	***	***	***
Mytech	Charlotte, NC	***	***	***
Norman, Fox	Industry, CA	***	***	***
PMP	Peoria, IL	***	***	***
Valudor	San Diego, CA	***	***	***
Vivion	San Carlos, CA	***	***	***
Total		***	***	***

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

U.S. IMPORTS

Table IV-2 and figure IV-1 present data for U.S. imports of GNA products from China and all other sources. U.S. imports of GNA products from China decreased by 12.4 percent from 2015 to 2016, then increased by 13.7 percent from 2016 to 2017. U.S. imports of GNA products were 7.6 percent higher during January to June 2018 compared to January to June 2017. U.S. imports of GNA products from China accounted for between 42.2 and 45.1 percent of total GNA product imports from 2015 to 2017. The share of U.S. imports from China was 10.7 percentage points higher during January-June 2018 than in January-June 2017. U.S. imports of GNA

¹ The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection (“Customs”), may have accounted for more than one percent of total imports under HTS subheadings 2918.16.1000, 2918.16.5010, and 2932.20.5020 in 2017.

products from nonsubject countries decreased by 19.3 percent from 2015 to 2016, then increased by 9.8 percent from 2016 to 2017. The share of U.S. imports from nonsubject countries accounted for between 54.9 and 57.8 percent from 2015 to 2017, and was 10.7 percentage points lower during January-June 2018 compared to January-June 2017. The ratio of U.S. imports from China to U.S. production of GNA products ranged from *** percent. The ratio was *** percentage points lower during January-June 2018 compared with January-June 2017.

Table IV-2
GNA products: U.S. imports by source, 2015-17, January to June 2017, and January to June 2018

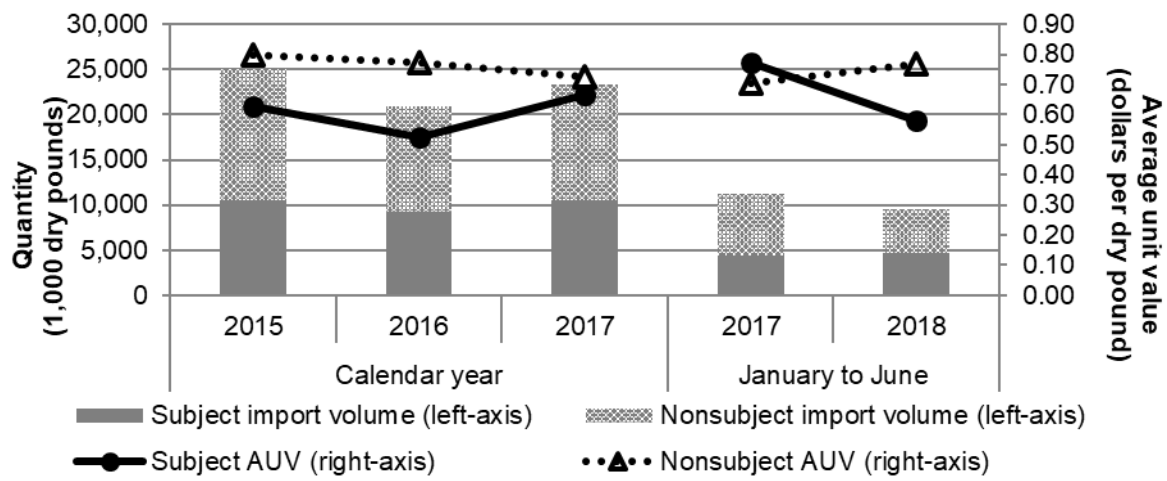
Item	Calendar year			January to June	
	2015	2016	2017	2017	2018
Quantity (1,000 dry pounds)					
U.S. imports from.-- China	10,553	9,246	10,517	4,404	4,737
Nonsubject sources	14,456	11,673	12,821	6,881	4,789
All import sources	25,009	20,919	23,338	11,284	9,526
Value (1,000 dollars)					
U.S. imports from.-- China	6,640	4,867	6,991	3,406	2,754
Nonsubject sources	11,509	9,041	9,305	4,849	3,686
All import sources	18,148	13,909	16,296	8,255	6,440
Unit value (dollars per dry pound)					
U.S. imports from.-- China	0.63	0.53	0.66	0.77	0.58
Nonsubject sources	0.80	0.77	0.73	0.70	0.77
All import sources	0.73	0.66	0.70	0.73	0.68
Share of quantity (percent)					
U.S. imports from.-- China	42.2	44.2	45.1	39.0	49.7
Nonsubject sources	57.8	55.8	54.9	61.0	50.3
All import sources	100.0	100.0	100.0	100.0	100.0
Share of value (percent)					
U.S. imports from.-- China	36.6	35.0	42.9	41.3	42.8
Nonsubject sources	63.4	65.0	57.1	58.7	57.2
All import sources	100.0	100.0	100.0	100.0	100.0
Ratio to U.S. production					
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Notes. -- 50 percent of HTS 2918.16.1000 was used as a conversion rate from liquid to dry weight. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Numbers may not add due to rounding.

Source: Official U.S. import statistics using HTS statistical reporting numbers 2918.16.5010, 2932.20.5020 and 2918.16.1000, accessed August 1st, 2018.

Figure IV-1

GNA products: U.S. imports volumes and prices, 2015-17, January to June 2017, and January to June 2018



Notes. -- 50 percent of HTS 2918.16.1000 was used as a conversion rate from liquid to dry weight. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Numbers may not add due to rounding.

Source: Official U.S. import statistics using HTS statistical reporting numbers 2918.16.5010, 2932.20.5020 and 2918.16.1000, accessed August 1st, 2018.

Table IV-3 presents data of U.S. imports of GNA products by nonsubject sources. France was the major nonsubject source of GNA products from 2015 to 2017 followed by Italy.² U.S. imports of GNA products from France decreased by 15.4 percent from 2015 to 2017, and were 41.8 percent lower during January-June 2018 compared to January-June 2017. U.S. imports from Italy decreased by 0.6 percent from 2015 to 2017, and were 47.4 percent higher during January-June 2018 compared to January-June 2017.

² Jungbunzlauer S.A. ("JBL") participated in the preliminary phase of the investigation representing foreign producers in France. In the final phase of these investigations, JBL did not provide a questionnaire response in time to include the prehearing report. Staff used data provided by JBL in the preliminary phase questionnaire to supplement data for nonsubject sources.

Table IV-3

GNA products: U.S. imports, by nonsubject source, 2015-17, January to June 2017, and January to June 2018

Item	Calendar year			January to June	
	2015	2016	2017	2017	2018
	Quantity (1,000 dry pounds)				
Nonsubject U.S. imports from.--					
France	12,396	9,669	10,489	5,949	3,464
Italy	2,043	1,879	2,030	806	1,188
Netherlands	---	7	175	46	---
Germany	---	41	117	77	---
India	6	---	5	1	45
Panama	---	---	5	---	92
United Kingdom	4	4	1	1	---
Colombia	---	41	---	---	---
Denmark	4	20	---	---	---
Taiwan	3	13	---	---	---
Nonsubject sources	14,456	11,673	12,821	6,881	4,789
	Share of total U.S. imports quantity (percent)				
Nonsubject U.S. imports from.--					
France	49.6	46.2	44.9	52.7	36.4
Italy	8.2	9.0	8.7	7.1	12.5
Netherlands	---	0.0	0.7	0.4	---
Germany	---	0.2	0.5	0.7	---
India	0.0	---	0.0	0.0	0.5
Panama	---	---	0.0	---	1.0
United Kingdom	0.0	0.0	0.0	0.0	---
Colombia	---	0.2	---	---	---
Denmark	0.0	0.1	---	---	---
Taiwan	0.0	0.1	---	---	---
Nonsubject sources	57.8	55.8	54.9	61.0	50.3
All import sources	100.0	100.0	100.0	100.0	100.0

Note. -- 50 percent of HTS 2918.16.1000 was used as a conversion rate from liquid to dry weight. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Numbers may not add due to rounding.

Source: Official U.S. import statistics using HTS statistical reporting numbers 2918.16.5010, 2932.20.5020 and 2918.16.1000,* accessed August 1, 2018.

Table IV-4 presents data on U.S. importers' U.S. shipments of GNA products from China and nonsubject sources by product type. Sodium gluconate accounted for a majority of U.S. importers U.S. shipments from China, ranging from *** percent from 2015 to 2017. U.S. importers' U.S. shipments of sodium gluconate from China increased by *** percent

from 2015 to 2017, but were *** percent lower during January-June 2018 compared to January-June 2017. GDL accounted for the remainder of U.S. importers' U.S. shipments of GNA products from China ranging from *** percent from 2015 to 2017. U.S. shipments of GDL from China decreased by *** percent from 2015 to 2017, but were *** percent higher during January-June 2018 than January-June 2017. *** accounted for *** U.S. shipments of GDL from China. U.S. importers' U.S. shipments of GDL from nonsubject sources represented the majority of U.S. importers' U.S. shipments of GNA products. U.S. importers' U.S. shipments of GDL from nonsubject sources increased *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 compared to January-June 2017. ***.

***³ ***⁴

Table IV-4
GNA products: U.S. importers' U.S. shipments of imports from China and nonsubject sources by product type, 2015-17, January to June 2017, and January to June 2018

* * * * *

NEGLIGENCE

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.⁵ Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.⁶ Table IV-5 below shows that imports from China accounted for 43.8 percent of total imports of GNA products by quantity during November 2016 to October 2017.

³ Posthearing brief of PMP, attachment A-2, p. 1.

⁴ Posthearing brief of Valudor, p. 36.

⁵ Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

⁶ Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Table IV-5

GNA products: U.S. imports in the twelve month period preceeding the filing of the petition, November 2016 through October 2017

Item	November 2016 through October 2017	
	Quantity (1,000 dry pounds)	Share of quantity (percent)
U.S. imports from.-- China	10,248	43.8
Nonsubject sources	13,141	56.2
All import sources	23,389	100.0

Note. -- 50 percent of HTS 2918.16.1000 was used as a conversion rate from liquid to dry weight. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Numbers may not add due to rounding.

Source: Official U.S. import statistics using HTS statistical reporting numbers 2918.16.5010, 2932.20.5020 and 2918.16.1000, accessed August 1, 2018.

APPARENT U.S. CONSUMPTION

Table IV-6 presents data on apparent U.S. consumption and U.S. market shares for GNA products. The U.S. producer's U.S. shipments increased by *** percent from 2015 to 2017, and were *** percent higher during the first half of 2018 compared to the first half of 2017. U.S. imports from China decreased by 0.3 percent from 2015 to 2017, and were 7.6 percent higher during January-June 2018 compared to January-June 2017. U.S. imports of GNA products from all import sources decreased by 6.7 percent from 2015 to 2017, and were 15.6 percent lower during January-June 2018 compared to January-June 2017.

Table IV-6

GNA products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, 2015-17, January to June 2017, and January to June 2018

Item	Calendar year			January to June	
	2015	2016	2017	2017	2018
	Quantity (1,000 dry pounds)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.-- China	10,553	9,246	10,517	4,404	4,737
Nonsubject sources	14,456	11,673	12,821	6,881	4,789
All import sources	25,009	20,919	23,338	11,284	9,526
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.-- China	6,640	4,867	6,991	3,406	2,754
Nonsubject sources	11,509	9,041	9,305	4,849	3,686
All import sources	18,148	13,909	16,296	8,255	6,440
Apparent U.S. consumption	***	***	***	***	***

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.

U.S. MARKET SHARES

U.S. market share data are presented in table IV-7 and figure IV-2. The U.S. producer's U.S. shipments represented between *** percent of apparent U.S. consumption from 2015 to 2017, on a quantity basis. U.S. imports from China represented between *** percent and U.S. imports from nonsubject sources represented between *** percent of apparent U.S. consumption from 2015 to 2017. The market share attributable to subject imports from China decreased *** percentage points from 2015 to 2016 but increased *** percentage points from 2016 to 2017, and was *** percentage points higher in interim 2018 than in interim 2017, on a quantity basis.

Table IV-7

GNA products: U.S. consumption and market shares, 2015-17, January to June 2017, and January to June 2018

* * * * * * *

Figure IV-2

GNA products: Apparent U.S. consumption, 2015-17, January to June 2017, January to June 2018

* * * * * * *

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

GNA products are derived from corn-based liquid glucose, and can be converted to other GNA products with the addition or removal of water and/or sodium hydroxide.¹ U.S. producer PMP's ratio of raw materials to total cost of goods sold increased irregularly from *** percent in 2015 to *** percent in 2017, and its unit raw material costs increased over the same period. PMP stated that corn (specifically "liquid corn sugar") accounts for nearly *** percent of the total cost of GNA products, and is purchased at prices negotiated in sales contracts with suppliers on an annual basis.² PMP also purchases sodium hydroxide through annual contracts, which are characterized by prices that are capped within a certain range to reflect sodium hydroxide price movements throughout the year; this protects PMP from input price volatility.³ PMP stated that liquid corn sugar prices increased in 2017,⁴ but reported that these price increases did not impact prices of its GNA products.⁵ Between January 2015 and June 2018, the price of glucose syrup (i.e., liquid corn sugar) increased by 29.3 percent.⁶

*** importers reported that raw materials prices have increased since 2015, two importers reported that raw material prices fluctuated, and one importer reported there was no change in raw material prices. PMP also stated that ***.

U.S. inland transportation costs

PMP reported that *** and 5 of 6 responding importers reported that they typically arrange transportation to their customers. PMP reported that its U.S. inland transportation costs averaged approximately *** percent. Five importers reported costs of 3, 5, 6, 15, and 20 percent.

¹ Petitioner's postconference brief, p. 1.

² Conference transcript p. 70 (Zinkhon).

³ Conference transcript p. 71 (Niedermeier).

⁴ Conference transcript p. 67 (Niedermeier).

⁵ Conference transcript p. 36 (Zinkhon).

⁶ Glucose syrup prices increased in each year of the period. They were \$33.94 cents per pound (dry weight) in 2015, \$39.54 in 2016, \$42.65 in 2017, and \$43.90 during January-June 2018. Published monthly prices did not vary by month. "U.S. wholesale list price index for glucose syrup, Midwest markets," Sugar and Sweeteners Yearbook Tables, ERS, USDA, <https://www.ers.usda.gov/data-products/sugar-and-sweeteners-yearbook-tables.aspx>, retrieved August 17, 2018.

PRICING PRACTICES

Pricing methods

PMP reported using *** to set prices. All responding importers sell on a transaction-by-transaction negotiation basis, while importers *** and *** also reported using set price lists. *** also reported using contracts, and *** reported using contracts for its imports *** (table V-1).

Table V-1
GNA products: U.S. producers' and importers' reported price setting methods, by number of responding firms¹

Method	U.S. producer	U.S. importers
Transaction-by-transaction	***	6
Contract	***	2
Set price list	***	2
Other	***	---
Responding firms	***	6

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

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

PMP reported selling GNA products *** (table V-2). PMP stated that its annual contracts ***.⁷ Importers of Chinese product reported mostly annual contracts, followed by spot sales. Importer Valudor reported that its annual contracts ***.

Table V-2
GNA products: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2017

* * * * *

Five purchasers reported that they purchase product weekly, one purchases every two to three weeks, 12 purchase monthly, 1 quarterly, and 3 annually. Most purchasers (16 of 20) reported that their purchasing frequency had not changed since 2015. Purchasers generally reported contacting one to three suppliers before making a purchase.

⁷ PMP stated that customers can renegotiate the price during the contract period if they are offered a lower price from another supplier. PMP also stated that purchase quantities in their contracts with customers are flexible and not binding. Conference transcript p. 64 (Zinkhon).

Sales terms and discounts

PMP reported typically quoting prices ***. Five responding importers typically quote prices on a delivered basis. *** six of the seven responding importers had no discount policy for GNA products. Importer *** reported quantity discounts. PMP reported sales terms of ***. Of the six responding importers, four reported sales terms of net 30 days and three reported sales terms of net 60 days. All responding importers and *** reported that they did not provide rebates to customers.

Price leadership

Sixteen of 23 purchasers listed one or more price leaders in the U.S. market. PMP was the firm most often mentioned as a price leader (cited by nine purchasers), with several purchasers explaining that PMP is the sole/large domestic producer. Firms also mentioned JBL (three firms), with one purchaser stating that JBL publishes a widely-distributed price list. Other firms listed were Brenntag Pacific, Colonial, Norman Fox, Redox, Roquette, TLC, Vivion, and Wintersun Chemical.

PRICE DATA

The Commission requested the U.S. producer and importers to provide quarterly data for the total quantity and f.o.b. value of the following sodium gluconate products⁸ shipped to unrelated U.S. customers during January 2015-June 2018.

Product 1.-- Sodium gluconate in 50 lb. to 60 lb. bag or kilogram equivalent (i.e., 25 or 30 kg/bag).

Product 2.-- Sodium gluconate in 2,000 lb. to 2,500 lb. bag or kilogram equivalent (i.e., 1,000 or 1,250 kg/bag).

U.S. producer PMP and 4 importers (***) provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.⁹ Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' commercial shipments of GNA products and 98 percent of reported U.S. commercial

⁸ Pricing data were requested only for GNA. Pricing data were not collected for GDL, liquid gluconate, or gluconic acid.

The differences in the two pricing products are in the denominations of packaging, which is driven by customer preference for larger quantities, rather than the availability of volume discounts or the packaging requirements for particular types of GNA products. ***. Conference transcript p. 131 (Torres); PMP's postconference brief, Attachment M.3, JBL Price List.

⁹ Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

shipments of subject imports from China in 2017. Price data for products 1 and 2 are presented in tables V-3 to V-4 and figures V-1 to V-2.

Table V-3

Sodium gluconate: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarters, January 2015-June 2018

* * * * *

Table V-4

Sodium gluconate: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarters, January 2015-June 2018

* * * * *

Figure V-1

Sodium gluconate: Weighted-average prices and quantities of domestic and imported product 1, by quarters, January 2015-June 2018

* * * * *

Figure V-2

Sodium gluconate: Weighted-average prices and quantities of domestic and imported product 2, by quarters, January 2015-June 2018

* * * * *

Price trends

In general, domestic prices were relatively stable and import prices declined during January 2015-June 2018. Table V-5 summarizes the price trends, by country and by product. As shown in the table, domestic prices of product 1 declined by *** percent and prices of product 2 increased by *** percent during January 2015-June 2018. Import prices decreased by *** for product 2 and *** percent for product 1.

Table V-5

GNA products: Summary of weighted-average f.o.b. prices for products 1-2 from the United States and China

* * * * *

Price comparisons

As shown in table V-6, prices for product imported from China were below those for U.S.-produced product in all 28 instances (23.7 million dry pounds); margins of underselling ranged from *** to *** percent.

Table V-6
GNA products: Instances of underselling/overselling and the range and average of margins, by country, January 2015-June 2018

* * * * *

LOST SALES AND LOST REVENUE

In the preliminary phase of the investigation, the Commission requested that the U.S. producer of GNA products report purchasers where it experienced instances of lost sales or revenue due to competition from imports of GNA products from China. In the final phase of the investigation, petitioner PMP reported that it had to reduce prices and roll back announced price increases, and that it had lost sales. Purchaser questionnaire responses were received from 23 firms. Responding purchasers reported purchasing 129 million dry pounds of GNA products during January 2015-June 2018 (table V-7).

Of the 23 responding purchasers, eight reported that, since 2015, they had purchased imported GNA products from China instead of U.S.-produced product. Seven of these purchasers reported that subject import prices were lower than U.S.-produced product, and six of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Six purchasers estimated the quantity of GNA products from China purchased instead of domestic product; quantities ranged from 160,000 dry pounds to 21.9 million dry pounds (table V-8). Purchasers identified traditional supplier and quality as non-price reasons for purchasing imported rather than U.S.-produced product.

Of the 23 responding purchasers, three reported that the U.S. producer had reduced prices in order to compete with lower-priced imports from China (table V-9; 14 reported that they did not know). Three firms provided estimated price reductions of 2.3 percent, 10 percent, and 15 percent.

Table V-7
GNA products: Purchasers' responses to purchasing patterns

* * * * *

Table V-8
GNA products: Purchasers' responses to purchasing subject imports instead of domestic product

* * * * *

Table V-9
GNA products: Purchasers' responses to U.S. producer price reductions

* * * * *

PART VI: FINANCIAL EXPERIENCE OF THE U.S. PRODUCER

BACKGROUND

The sole U.S. producer, PMP, reported its financial results on U.S. GNA products operations.^{1 2} As supplemental information to its U.S. producer questionnaire, PMP also submitted financial results specific to sodium gluconate, the largest product in the group making up GNA products.³ As presented in this report, PMP's financial results reflect all GNA products reported to the Commission in its U.S. producer questionnaire.

With respect to operational changes/disruptions during the period affecting its financial results, PMP's overall days in production declined from *** in 2014 to *** in 2016.⁴ The company also reported that it ran *** days less in 2017.⁵

¹ PMP reported its financial results on the basis of generally accepted accounting principles (GAAP). While PMP's fiscal year ends March 31, the annual financial results reported to the Commission reflect calendar-year periods. ***.

² PMP's parent company, FUSO Chemical Co., Ltd, is a publicly traded multinational company headquartered in Osaka, Japan. PMP's operations are included in the parent company's Life Science segment. Reuters' description of Fuso Chemical Co. retrieved December 20, 2017 at <https://www.reuters.com/finance/stocks/company-profile/4368.T>.

³ December 14, 2017 letter with attachments from counsel on behalf of PMP, Table A-2. With regard to the relevance of the stand-alone sodium gluconate financial results, PMP noted that it “. . . would not be in a position to supply the other GNA Products were it not for the viable production of sodium gluconate. Given this relationship, it is therefore appropriate to rely not only on the injury indicia for GNA Products as a whole, but to also rely heavily on the injury indicia for sodium gluconate.” Petitioner's postconference brief, p. 32.

⁴ Petitioner's postconference brief (Attachment A), p. 12. A PMP company official stated “The industry standard is maximum 320 days of full production, so you leave 45 aside for maintenance and scheduled repairs. The boiler has to be inspected annually, things like that. To run it safely and properly, a facility like ours, it's 320 days is maximum. If we hadn't suffered the injuries that we had already suffered, we would be at like 319.2 days of production.” Conference transcript (Zinkhon), p. 76. As described by another PMP company official, “. . . any extended down time that we have, we plan. We always plan our production around sales budget. But sometimes we have to do maintenance. Maybe we're going to install a new piece of equipment to upgrade the process, so then we'll schedule that down time. We generally don't have much down time due to lower demand or something. We keep our employees working . . . most of the extended down time that we have is due to maintenance or capital projects and things like that.” Conference transcript p. 75 (Niedermeier).

⁵ PMP U.S. producer questionnaire, response to II-2.

OPERATIONS ON GNA PRODUCTS

Table VI-1 presents income-and-loss data for PMP's GNA products operations and table VI-2 presents corresponding changes in average unit values, respectively. Table VI-3 presents a separate variance analysis of GNA products financial results.⁶

Net Sales

All of the revenue for GNA product sales was classified as commercial sales. For full-year 2017, *** percent of this total represents exports, which were transfers to ***. Exports are included in total commercial sales.

Volume

PMP's full-year sales volume increased throughout the period: *** percent from 2015 to 2016 and *** percent from 2016 to 2017. Total sales volume was *** percent higher in January-June 2018 compared to January-June 2017.

Table VI-1

GNA products: Results of operations of PMP, 2015-2017, January-June 2017, and January-June 2018

* * * * *

Table VI-1--Continued

GNA products: Results of operations of PMP, 2015-2017, January-June 2017, and January-June 2018

* * * * *

Value

Total sales value declined slightly between 2015 and 2016 but increased between 2016 and 2017 to a level higher than in 2015. In January-June 2018, total sales value was higher than in January-June 2017 due to a combination of higher average sales value and higher total

⁶ The Commission's variance analysis is calculated in three parts: sales variance, cost of goods sold (COGS) variance, and SG&A expenses variance. Each part consists of a price variance (in the case of the sales variance) or a cost or expense variance (in the case of the COGS and SG&A expenses variance), and a volume variance. The sales or cost/expense variance is calculated as the change in unit price or per-unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. As summarized at the bottom of table VI-3, the price variance is from sales, the cost/expense variance is the sum of those items from the COGS and SG&A variances, respectively, and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expenses variances. In general, the utility of the Commission's variance analysis is enhanced when product mix remains the same throughout the period. ***. USITC auditor preliminary-phase notes.

volume. While average sales value has a direct correlation with the average cost of raw material during parts of the period (see tables VI-1 and VI-2), sales/pricing of GNA products does not include a pass-through of raw material costs.⁷

Table VI-2
GNA products: Changes in AUVs, between calendar years and partial year periods

* * * * *

Table VI-3
GNA products: Variance analysis for PMP, between calendar years and partial year periods

* * * * *

Cost of goods sold (COGS)

Raw materials

Total raw material cost was the largest single component of COGS, ranging from a full-year low of *** percent of total COGS in 2015 to a high of *** percent in 2016 (see table VI-1). To the extent that average unit raw material costs fluctuated during the full-year period, the relative increase in the share of raw material cost to total COGS generally reflects declines in corresponding average conversion costs (combined direct labor and other factory costs).

The majority of raw material costs reflects liquid corn syrup at *** percent of total 2017 raw material costs. Sodium hydroxide is the largest other raw material input at *** percent of total 2017 raw material costs.⁸

Table VI-4
GNA products: Raw materials by type, 2017

* * * * *

PMP purchases corn syrup from a small number of suppliers with prices established for annual periods. In part, a factor in corn syrup supply and corresponding prices is reportedly the extent to which wet millers choose to produce different products in order to maximize profits. Sodium hydroxide prices are also negotiated for annual periods with ceiling and floor caps and were described as “dynamic”.⁹ As shown in table VI-1, raw material cost on an average basis increased from 2015 to 2017, and was higher in the January-June 2018 compared to the same period in 2017.

⁷ As described by a PMP company official, in the past “. . . the formula was when the cost went up, we raised the price, and when the cost went down we lowered price. But unfortunately during the POI, we can’t do that.” Conference transcript (Zinkohn), pp. 69-70.

⁸ PMP’s U.S. producer questionnaire, response to III-9d.

⁹ Conference transcript (Niedermeier), pp. 67-68. Conference transcript (Zinkhon), pp. 70. Conference transcript (Niedermeier), pp. 71-72.

Direct labor and other factory costs

The second largest share of GNA products as a share of COGS is the category of other factory costs. Other factory costs when compared to total COGS was *** percent in 2015, *** percent in 2016, and *** percent in 2017 (see table VI-1). From 2015 to 2016, other factory costs declined by *** percent but then increased by *** percent from 2016 to 2017 and were marginally lower between the comparable interim periods (see table VI-1).

Direct labor was the smallest component of COGS. It moved within a relatively narrow range on a per-unit basis, as a ratio to net sales, and as a share of total COGS.

While PMP's cost structure was generally described as "low fixed cost" at the staff conference,¹⁰ the company's postconference brief also noted that GNA operations reflect a "high fixed cost, capital intensive industry" in which there is "strong incentive to maximize capacity utilization." In the postconference brief, the company also noted that it is "difficult to engage in incremental capacity expansion or contraction."¹¹

Table VI-5 shows that the majority of COGS was variable, ranging from a period high of *** percent in full-year 2016, and a low of *** percent in January-June 2017.

Table VI-5
GNA products: Operations on GNA products, 2015-2017, January-June 2017 and January-June 2018

* * * * *

Table VI-1 shows that from 2015 to 2017 other factory costs irregularly increased on a per-unit basis and as a ratio to net sales, and were lower between the comparable interim periods.

With regard to these costs, PMP noted, ***.¹²

Byproducts

PMP identified other products produced in conjunction with GNA products.¹³ ***.¹⁴

¹⁰ Conference transcript (Zinkhon), p. 82.

¹¹ PMP's postconference brief, pp. 15-16. To the extent that fixed costs are present in COGS, the majority would typically be reflected in direct labor and other factory costs.

¹² PMP's postconference brief (Attachment A), p. 14.

¹³ ***. *** U.S. producer questionnaire, response to III-5. S-45 was described as mother liquor that can no longer be recycled back into the production process and is sold to the concrete admixture industry. Conference transcript (Zinkhon), pp. 73-75.

¹⁴ PMP U.S. producer questionnaire, response to III-9b. ***. Petitioner's postconference brief (Attachment A), p. 15.

In general, the distinction between joint products, also called main products, and byproducts is largely dependent on the market value of the products in question and their contribution to overall revenue. As such, a product's designation as a byproduct or a main product can change over time given market conditions. For cost accounting purposes, the market value of a byproduct is generally treated as a deduction to arrive at the cost of the main product. *Cost Accounting: Using a Cost Management Approach*, L. Gayle Rayburn, Irwin, 1993, pp. 258-259.

Total cost of goods sold

In conjunction with the above changes to raw materials, direct labor, and other factory costs, COGS on an average unit basis increased during the 2015-2017 period (from *** per pound to *** per pound), and there was no material difference in January-June 2018 compared to January-June 2017 (both *** per pound).

Gross profit

PMP's total GNA products gross profit and gross profit ratio (total gross profit divided by total revenue) decreased from 2015 to 2017 ***. In contrast, gross profit was higher between the comparable interim periods ***.

SG&A expenses and operating income or loss

Total selling, general, and administrative ("SG&A") expenses decreased from 2015 to 2016, then increased in 2017 to a level similar to 2015. However, in January-June 2018, SG&A expenses were higher by *** percent (mainly driven by legal and professional fees) compared to January-June 2017.¹⁵ The SG&A expense ratio (total SG&A expenses divided by total revenue) decreased during the three full year periods but was ***.¹⁶

Similar to gross profit, PMP's total GNA products operating income and operating income ratio (total operating income divided by total revenue) decreased from 2015 to 2017. Operating income was also lower between the comparable interim periods ***.

Interest expense, other expenses, and net income or loss

As shown in table VI-1, PMP reported *** during the period. ***.¹⁷ PMP did report other expenses and other income throughout the full-year and interim periods; these amounts are ***.

PMP's GNA products net income was positive throughout the period and followed the same directional pattern as operating income. ***.¹⁸

¹⁵ PMP provided the following explanation: "The increase in SG&A expenses from interim 2017 (1-6/2017) to interim 2018 (1-6/2018) was ***. As a small company, these were very large, one-time expenses for PMP's business". ***, Counsel, email message to USITC staff, August 30, 2018.

¹⁶ A PMP company official stated that there were no substantial changes in the structure of SG&A during the period. Conference transcript (Zinkhon), p. 80.

¹⁷ PMP's U.S. producer questionnaire, response to III-10.

¹⁸ PMP provided the following explanation: "***. First, PMP has ***. Second, PMP provided ***". ***, Counsel, email message to USITC staff, August 30, 2018.

CAPITAL EXPENDITURES AND RESEARCH AND DEVELOPMENT EXPENSES

Table VI-6 presents PMP's GNA capital expenditures and research and development ("R&D") expenses.

Table VI-6

GNA products: Capital expenditures and research and development expenses of PMP, 2015-17, January to June 2017, and January to June 2018

* * * * *

PMP's total capital expenditures were at their highest level in 2015, declined *** in 2016 and increased *** in 2017; they were lower in January-June 2018 compared to January-June 2017. ***.¹⁹ The level of capital expenditures ***.²⁰ However, the company also noted that the level of January-June 2017 capital expenditures was ***.²¹

As shown in table VI-6, PMP *** R&D expenses during the period examined.

ASSETS AND RETURN ON ASSETS

Table VI-7 presents data on the U.S. producer's GNA products total assets and return on assets.²²

Table VI-7

GNA products: Value of assets used in production, warehousing, and sales, and return on assets of PMP, 2015-2017

* * * * *

Net assets moved within a relatively narrow range, but irregularly increased from 2015 to 2017. The ROA decreased from *** percent in 2015 to *** percent in 2017.

¹⁹ PMP's U.S. producer questionnaire, response to III-13 (note 1).

²⁰ Conference transcript, p. 81 (Niedermeier).

²¹ Petitioner's postconference brief (Attachment A), p. 12. ***. Petitioner's postconference brief (Attachment A), pp. 13-14. Overall, PMP stated that it "... is not spending large amounts of capital on *** because of the current material injury and threat of future injury caused by the subject imports. Ibid.

²² With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line value on the asset side of a company's balance sheet) reflects an aggregation of a number of assets, which, in many instances, are not product specific. Since PMP manufactures other products in addition to GNA products, allocation factors were presumably necessary to report total asset values specific to GNA products operations. The ability of the U.S. producer to assign total asset values to discrete product lines affects the meaningfulness of return on assets.

CAPITAL AND INVESTMENT

The Commission requested the U.S. producer to describe any actual or potential negative effects on its return on investment or its growth, investment, ability to raise capital, existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), or the scale of capital investments as a result of imports of GNA products from China. Table VI-8 tabulates the responses on actual negative effects on investment, growth and development, as well as anticipated negative effects. Table VI-9 presents the narrative responses of the U.S. producer regarding actual and anticipated negative effects on investment, growth and development.²³

Table VI-8

GNA products: Actual and anticipated negative effects of imports on investment and growth and development

* * * * *

Table VI-9

GNA products: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2015

* * * * *

²³ ***. Petitioner's postconference brief (Attachment A), p. 12. (see also footnote 3).

PART VII: THREAT CONSIDERATIONS AND INFORMATION ON NONSUBJECT COUNTRIES

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—
In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors¹--

- (I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
- (II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
- (III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
- (IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
- (V) inventories of the subject merchandise,*

¹ Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that “The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition.”

- (VI) 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,*
- (VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),*
- (VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and*
- (IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).²*

Information on the nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV and V*; and information on the effects of imports of the subject merchandise on the U.S. producer's existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

THE INDUSTRY IN CHINA

The Commission issued foreign producers' or exporters' questionnaires to 85 firms believed to produce and/or export GNA products from China.³ The Commission received

² Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

³ These firms were identified through a review of information submitted in the petition and contained in *** records.

foreign producer questionnaires from five Chinese firms: Shandong Baisheng Biotechnology (“Baisheng”), Shandong Fuyang Bio-tech (“Fuyang”), Shandong Kaison Biochemical (“Kaison”), Shandong Xiwang Sugar Industry (“Xiwang”), and Zhucheng Dongxiao Biotechnology (“Dongxiao”). These firms’ exports to the United States accounted for a majority of U.S. imports of GNA products from China in 2017. According to estimates of the responding Chinese producers, the production of GNA products in China reported in questionnaires accounts for a vast majority of overall production of GNA products in China. Table VII-1 presents information on the GNA product operations of the responding producers and exporters in China. Petitioners identified 10 firms that manufacture GNA products in China.

**Table VII-1
GNA products: Summary data for producers in China, 2017**

Firm	Production (1,000 dry pounds)	Share of reported production (percent)	Exports to the United States (1,000 dry pounds)	Share of reported exports to the United States (percent)	Total shipments (1,000 dry pounds)	Share of firm's total shipments exported to the United States (percent)
SHANDONG BAISHENG BIOTECHNOLOGY	***	***	***	***	***	***
SHANDONG FUYANG BIO- TECH.	***	***	***	***	***	***
SHANDONG KAISON BIOCHEMICAL	***	***	***	***	***	***
SHANDONG XIWANG SUGAR INDUSTRY	***	***	***	***	***	***
ZHUCHENG DONGXIAO BIOTECHNOLOGY	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Changes in operations

As presented in table VII-2 producers in China reported several operational and organizational changes since January 1, 2015. ***. ***.

**Table VII-2
GNA products: Chinese producers' reported changes in operations, since January 1, 2015**

* * * * *

Operations on GNA products

Table VII-3 presents information on the GNA product operations of the responding producers and exporters in China. Chinese producers' capacity increased *** percent from 2015 to 2017, and was *** percent higher during January-June 2018 than January-June 2017. ***. ***. Production increased *** percent from 2015 to 2017, and was *** percent higher during January-June 2018 than January-June 2017. ***. ***. ***. Capacity utilization increased by *** percentage points from 2015 to 2017, and was *** percentage points higher during January-June 2018 than January-June 2017. Exports of GNA products to the United States from China increased by *** percent from 2015 to 2017, but were *** percent lower during January-June 2018 than January-June 2017. ***.

Chinese producers' commercial home market shipments increased by *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 than January-June 2017. ***. ***. Chinese producers' total shipments increased by *** percent from 2015 to 2017, and were *** percent higher during January-June 2018 than January-June 2017. ***. ***.

Table VII-3
GNA products: Data for producers in China, 2015-17, January to June 2017, and January to June 2018

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2015	2016	2017	2017	2018	2018	2019
	Quantity (1,000 dry pounds)						
Capacity	1,244,508	1,239,657	1,297,639	657,418	663,591	1,311,749	1,300,726
Production	988,957	1,029,697	1,141,529	566,109	594,704	1,156,564	1,138,722
End-of-period inventories	51,399	67,226	78,959	74,433	78,080	73,245	73,974
Shipments:							
Home market shipments:							
Internal consumption/ transfers	---	---	---	---	---	---	---
Commercial home market shipments	712,044	739,869	808,620	411,065	416,114	820,624	815,084
Total home market shipments	712,044	739,869	808,620	411,065	416,114	820,624	815,084
Export shipments to:							
United States	9,996	11,042	14,018	5,313	3,361	8,907	10,078
All other markets	259,137	262,959	307,158	146,702	170,886	326,210	312,831
Total exports	269,133	274,001	321,176	152,015	174,247	335,117	322,909
Total shipments	981,177	1,013,870	1,129,796	563,080	590,361	1,155,741	1,137,993
	Ratios and shares (percent)						
Capacity utilization	79.5	83.1	88.0	86.1	89.6	88.2	87.5
Inventories/production	5.2	6.5	6.9	6.6	6.6	6.3	6.5
Inventories/total shipments	5.2	6.6	7.0	6.6	6.6	6.3	6.5
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	---	---	---	---	---	---	---
Commercial home market shipments	72.6	73.0	71.6	73.0	70.5	71.0	71.6
Total home market shipments	72.6	73.0	71.6	73.0	70.5	71.0	71.6
Export shipments to:							
United States	1.0	1.1	1.2	0.9	0.6	0.8	0.9
All other markets	26.4	25.9	27.2	26.1	28.9	28.2	27.5
Total exports	27.4	27.0	28.4	27.0	29.5	29.0	28.4
Total shipments	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires

Alternative products

As shown in table VII-4, responding Chinese firms reported no production of other products on the same equipment and machinery used to produce GNA products.

Table VII-4
GNA products: China producers' overall capacity and production on the same equipment as subject production, 2015-17, January to June 2017, and January to June 2018

Item	Calendar year			January to June	
	2015	2016	2017	2017	2018
	Quantity (1,000 dry pounds)				
Overall capacity	1,244,508	1,239,657	1,297,639	657,418	663,591
Production:					
Sodium gluconate, gluconic acid, and derivative products	988,957	1,029,697	1,141,529	566,109	594,704
Out-of-scope production	---	---	---	---	---
Total production on same machinery	988,957	1,029,697	1,141,529	566,109	594,704
	Ratios and shares (percent)				
Overall capacity utilization	79.5	83.1	88.0	86.1	89.6
Production:					
Sodium gluconate, gluconic acid, and derivative products	100.0	100.0	100.0	100.0	100.0
Out-of-scope production	---	---	---	---	---
Total production on same machinery	100.0	100.0	100.0	100.0	100.0

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

Exports

According to GTA, the leading export markets for GNA products from China are India, the United States, and Turkey (table VII-5). During 2017, India was the top export market for GNA products from China (14.8 percent of the total), followed by the United States (7.4 percent).

**Table VII-5:
GNA products: Exports from China, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	Quantity (1,000 pounds)		
China exports to the United States	41,365	38,710	39,351
China exports to other major destination markets.--			
India	55,689	68,211	78,680
Turkey	37,114	32,268	35,478
Japan	28,720	28,270	33,163
United Arab Emirates	21,850	24,173	25,199
Mexico	14,839	17,777	22,560
Korea	12,886	23,337	21,959
Vietnam	12,878	16,836	21,583
Brazil	20,193	17,729	20,782
All other destination markets	206,819	233,344	234,221
Total China exports	452,353	500,655	532,975
	Value (1,000 dollars)		
China exports to the United States	157,348	154,003	158,160
China exports to other major destination markets.--			
India	141,864	151,228	153,245
Turkey	30,084	26,735	29,785
Japan	29,700	28,371	41,108
United Arab Emirates	6,897	5,433	6,741
Mexico	21,428	20,186	27,170
Korea	44,899	44,921	30,637
Vietnam	17,442	19,279	22,727
Brazil	62,256	48,558	73,939
All other destination markets	431,396	425,443	403,486
Total China exports	943,314	924,157	946,998

Table continued on next page.

Table VII-5—Continued
GNA products: Exports from China, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Unit value (dollars per pounds)		
China's exports to the United States	3.80	3.98	4.02
China's exports to other major destination markets.--			
India	2.55	2.22	1.95
Turkey	0.81	0.83	0.84
Japan	1.03	1.00	1.24
United Arab Emirates	0.32	0.22	0.27
Mexico	1.44	1.14	1.20
Korea	3.48	1.92	1.39
Vietnam	1.35	1.15	1.05
Brazil	3.08	2.74	3.55
All other destination markets	2.09	1.82	1.72
Total China exports	2.09	1.85	1.78
	Share of quantity (percent)		
China's exports to the United States	9.1	7.7	7.4
China's exports to other major destination markets.--			
India	12.3	13.6	14.8
Turkey	8.2	6.4	6.7
Japan	6.3	5.6	6.2
United Arab Emirates	4.8	4.8	4.7
Mexico	3.3	3.6	4.2
Korea	2.8	4.7	4.1
Vietnam	2.8	3.4	4.0
Brazil	4.5	3.5	3.9
All other destination markets	45.7	46.6	43.9
Total China exports	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 2918.16 and 2932.20 reported by China Customs in the IHS/GTA database, accessed August 7, 2018.

U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-6 presents data on U.S. importers' reported inventories of GNA products. U.S. importers' inventories from China decreased by *** percent from 2015 to 2017, and were *** percent lower during January-June 2018 than January-June 2017. ***.

Table VII-6
GNA products: U.S. importers' inventories, 2015-17, January to June 2017, and January to June 2018

* * * * *

U.S. IMPORTERS' OUTSTANDING ORDERS

The Commission requested importers to indicate whether they imported or arranged for the importation of GNA products from China after June 30, 2018 (table VII-7). Responding U.S. importers reported *** dry pounds of arranged imports from China.

Table VII-7
GNA products: Arranged imports, July 2018 through June 2019

* * * * *

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

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.⁴ 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.⁵ The antidumping duty order was extended by the European Union in January 2017.⁶

INFORMATION ON NONSUBJECT COUNTRIES

In assessing whether the domestic industry is materially injured or threatened with material injury “by reason of subject imports,” the legislative history states “that the Commission must examine all relevant evidence, including any known factors, other than the dumped or subsidized imports, that may be injuring the domestic industry, and that the Commission must examine those other factors (including non-subject imports) ‘to ensure that it is not attributing injury from other sources to the subject imports.’”⁷

⁴ *Council Implementing Regulation (EU), No 965/2010 of 25 October 2010*, Official Journal of the European Union, L 282, October 28, 2010, p. 24.

⁵ *Ibid.* p. 27.

⁶ *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.

⁷ *Mittal Steel Point Lisas Ltd. v. United States*, Slip Op. 2007-1552 at 17 (Fed. Cir. Sept. 18, 2008), quoting from Statement of Administrative Action on Uruguay Round Agreements Act, H.R. Rep. 103-316, Vol. I at 851-52; see also *Bratsk Aluminum Smelter v. United States*, 444 F.3d 1369 (Fed. Cir. 2006).

According to published sources, global capacity of GNA products in 2016 was ***, global production was ***, and global apparent consumption was ***,⁸ (table VII-8).⁹ World production is largely centered in China ***, Europe ***, and the United States *** with some additional non-Chinese production in Asia ***.¹⁰ The consumption of gluconates in 2016 was *** for the United States, *** for Europe, *** for China.¹¹ World consumption of hydroxycarboxylic acids and salts by region in 2016 is shown in figure VII-1, and consumption of hydroxycarboxylic acids and salts¹² by application in major regions is outlined in table VII-9. Global exports by exporting country for 2015–17 are listed in table VII-10.

Outside of the subject country there are a limited number of producers of GNA products.¹³ In Europe production is limited to two producers—Jungbunzlauer SA (JBL) in France and Roquette in Italy. In 2016, JBL produced *** of GA and GNA accounting for *** percent of European production, while Roquette produced *** of GA and GNA in 2016, accounting for approximately *** percent of European production of GA and GNA.¹⁴ Both JBL and Roquette produce GDL, with Roquette being PMP’s GDL supplier.¹⁵ Mihwa Co., Ltd., in South Korea, produced approximately *** of GA and GNA in 2016.¹⁶

**Table VII-8
GNA products: World supply/demand for gluconates, 2016**

* * * * *

**Figure VII-1
GNA products: World consumption of hydroxycarboxylic acids and salts by region, 2016**

* * * * *

**Table VII-9
GNA products: Consumption of hydroxycarboxylic acids and salts by major region and application, 2016¹² (thousands of pounds, 100% dry sodium salt basis)**

* * * * *

⁸ ***; *Chemical Economics Handbook: Chelating Agents*, IHS, May 2017, p. 12.

⁹ Gluconates include gluconic acid, sodium gluconate, and other gluconates but ***; *Chemical Economics Handbook: Chelating Agents*, IHS, May 2017, p. 12.

¹⁰ Ibid.

¹¹ Ibid.

¹² Includes gluconates and glucoheptonates; glucoheptonates do not fall within the scope of this investigation.

¹³ Conference transcript, p. 136 (Torres).

¹⁴ *Chemical Economics Handbook: Chelating Agents*, IHS, May 2017, p. 90.

¹⁵ Conference transcript, p. 93 (Zinkhon).

¹⁶ Mihwa does not supply GDL; Mihwa Co. Ltd. “Products,” <http://mhchem.co.kr/products-e.htm>, retrieved August 6, 2018.

Table VII-10
GNA products: Global exports by exporter, 2015-17

Exporter	Calendar year		
	2015	2016	2017
	Quantity (1,000 dry pounds)		
United States	42,622	39,457	38,283
China	452,353	500,655	532,975
All other major reporting exporters.--			
France	74,703	67,345	71,266
United Kingdom	14,702	17,105	29,462
Thailand	10,475	22,492	22,631
Japan	25,025	24,454	20,596
Italy	19,482	18,758	19,222
Germany	16,872	15,191	15,197
Netherlands	10,529	10,243	11,596
Taiwan	14,737	10,270	10,908
Belgium	12,696	11,964	10,746
India	5,040	6,181	8,352
All other exporters	26,194	33,002	22,782
Total global exports	725,430	777,118	814,017
	Value (1,000 dollars)		
United States	149,094	162,031	119,842
China	943,314	924,157	946,998
All other major reporting exporters.--			
France	27,305	25,042	25,103
United Kingdom	35,260	39,485	58,347
Thailand	6,975	20,357	17,814
Japan	61,379	51,992	49,877
Italy	45,222	55,383	55,160
Germany	128,820	148,373	128,627
Netherlands	43,137	40,572	45,603
Taiwan	10,425	6,144	8,624
Belgium	24,247	26,762	23,055
India	84,109	39,284	63,642
All other exporters	536,857	519,125	486,335
Total global exports	2,096,144	2,058,708	2,029,026

Table continued on next page.

Table VII-10—Continued
GNA products: Global exports by exporter, 2015-17

Exporter	Calendar year		
	2015	2016	2017
	Unit value (dollars per dry pound)		
United States	3.50	4.11	3.13
China	2.09	1.85	1.78
All other major reporting exporters.--			
France	0.37	0.37	0.35
United Kingdom	2.40	2.31	1.98
Thailand	0.67	0.91	0.79
Japan	2.45	2.13	2.42
Italy	2.32	2.95	2.87
Germany	7.64	9.77	8.46
Netherlands	4.10	3.96	3.93
Taiwan	0.71	0.60	0.79
Belgium	1.91	2.24	2.15
India	16.69	6.36	7.62
All other exporters	20.50	15.73	21.35
Total global exports	2.89	2.65	2.49
	Share of quantity (percent)		
United States	5.9	5.1	4.7
China	62.4	64.4	65.5
All other major reporting exporters.--			
France	10.3	8.7	8.8
United Kingdom	2.0	2.2	3.6
Thailand	1.4	2.9	2.8
Japan	3.4	3.1	2.5
Italy	2.7	2.4	2.4
Germany	2.3	2.0	1.9
Netherlands	1.5	1.3	1.4
Taiwan	2.0	1.3	1.3
Belgium	1.8	1.5	1.3
India	0.7	0.8	1.0
All other exporters	3.6	4.2	2.8
Total global exports	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 2918.16 and 2932.20 reported by various national statistical authorities in the Global Trade Atlas database, accessed August 7, 2018.

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
82 FR 57614, December 6, 2017	<i>Sodium Gluconate, Gluconic Acid, and Derivative Products From China and France; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations</i>	https://www.gpo.gov/fdsys/pkg/FR-2017-12-06/pdf/2017-26268.pdf
83 FR 499, January 4, 2018	<i>Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Initiation of Countervailing Duty Investigation</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-01-04/pdf/2017-28431.pdf
83 FR 516, January 4, 2018	<i>Sodium Gluconate, Gluconic Acid, and Derivative Products From France and the People's Republic of China: Initiation of Less-Than-Fair-Value Investigations</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-01-04/pdf/2017-28430.pdf
83 FR 23888, May 23, 2018	<i>Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Preliminary Affirmative Determination and Alignment of Final Determination With Final Antidumping Duty Determination</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-05-23/pdf/2018-10566.pdf
83 FR 31949, July 10, 2018	<i>Sodium Gluconate, Gluconic Acid, and Derivative Products From the People's Republic of China: Preliminary Determination of Sales of Less Than Fair Value</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-07-10/pdf/2018-14729.pdf
83 FR 33944, July 18, 2018	<i>Sodium Gluconate, Gluconic Acid, and Derivative Products From China; Scheduling of the Final Phase of Countervailing Duty and Anti-Dumping Duty Investigations</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-07-18/pdf/2018-15277.pdf

83 FR 478779 September 21, 2018	<i>Sodium Gluconate, Gluconic Acid and Derivative Products From the People's Republic of China: Final Affirmative Countervailing Duty Determination</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-09-21/pdf/2018-20605.pdf
83 FR 47876 September 21, 2018	<i>Sodium Gluconate, Gluconic Acid and Derivative Products From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value</i>	https://www.gpo.gov/fdsys/pkg/FR-2018-09-21/pdf/2018-20606.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

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

Subject: Sodium Gluconate, Gluconic Acid, and Derivative Products from China

Inv. Nos.: 701-TA-590 and 731-TA-1397 (Final)

Date and Time: September 18, 2018 - 9:40 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

OPENING REMARKS:

Petitioner (**David M. Spooner**, Barnes & Thornburg LLP)
Respondent (**Andrew T. Schutz**, Grunfeld, Desiderio, Lebowitz,
Silverman & Klestadt LLP)

In Support of the Imposition of Antidumping and Countervailing Duty Orders:

Barnes & Thornburg LLP
Washington DC
on behalf of

PMP Fermentation Products, Inc. ("PMP")

Jim Zinkhon, President & Chief Executive Officer, PMP

Tonya Lodge, Manager of Corporate Planning & Sales, PMP

Dan Rudy, Director of Administration, PMP

Gary D. Russell, Vice President, RussTech, Inc.

Bruce Malashevich, President & Chief Executive Officer,
Economic Consulting Services

Jerrie Mirga, Vice President, Economic Consulting Services

David M. Spooner)
Christine J. Sohar Henter) – OF COUNSEL
Nicholas A. Galbraith)

**In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders:**

Grunfeld, Desiderio, Lebowitz, Silverman & Klestadt LLP
Washington, DC
on behalf of

Valudor Products, Inc. (“Valudor”)

Semyon Melamed, President, Valudor

Michelle Tung, Operations Manager, Valudor

Andrew T. Schutz

Dharmendra N. Choudhary

)
) – OF COUNSEL
)

REBUTTAL/CLOSING REMARKS:

Petitioner (**David M. Spooner**, Barnes & Thornburg LLP)

Respondent (**Andrew T. Schutz**, Grunfeld, Desiderio, Lebowitz,
Silverman & Klestadt LLP)

-END-

APPENDIX C
SUMMARY DATA

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		2017	January to June		Calendar year		2016-17	Jan-Jun 2017-18
	2015	2016		2017	2018	2015-17	2015-16		
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.

