Corrosion Inhibitors from China

Investigation Nos. 701-TA-638 and 731-TA-1473 (Preliminary)

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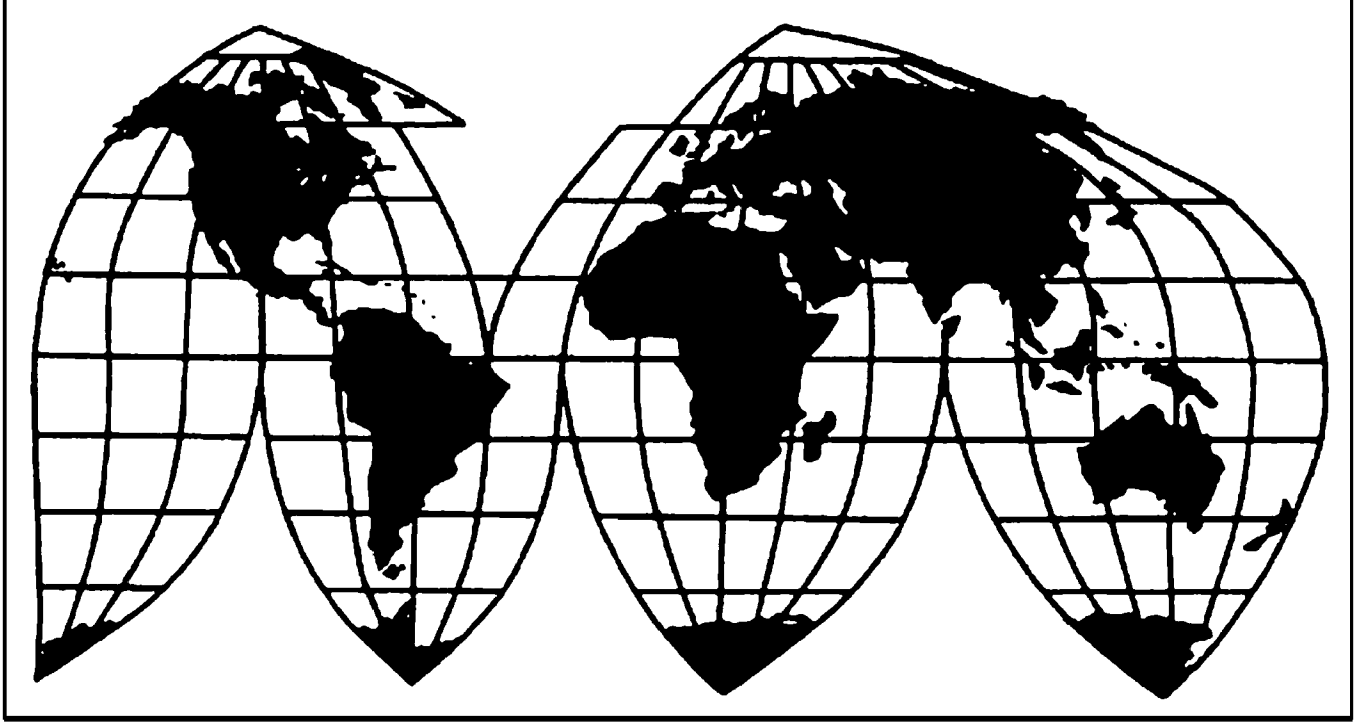
U.S. International Trade Commission



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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Note.—Information that would reveal confidential operations of individual concerns may not be published.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 in confidential reports and is deleted and replaced with asterisks (***) in public reports.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-638 and 731-TA-1473 (Preliminary)

Corrosion Inhibitors from China

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of corrosion inhibitors from China, provided for in subheading 2933.99.82 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the government of China.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in section 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under sections 703(b) or 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under sections 705(a) or 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing

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

[2] *Certain Corrosion Inhibitors from the People's Republic of China: Initiation of Countervailing Duty Investigation,* 85 FR 12502 (March 3, 2020); and *Certain Corrosion Inhibitors from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation,* 85 FR 12506 (March 3, 2020).

duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

BACKGROUND

On February 5, 2020, Wincom Incorporated, Blue Ash, Ohio filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of corrosion inhibitors from China and LTFV imports of corrosion inhibitors from China. Accordingly, effective February 5, 2020, the Commission instituted countervailing duty investigation No. 701-TA-638 and antidumping duty investigation No. 731-TA-1473 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference 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* of February 11, 2020 (85 FR 7784). The conference was held in Washington, DC, on February 26, 2020, and all persons who requested the opportunity were permitted to appear in person or by counsel.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of corrosion inhibitors from China that are allegedly sold in the United States at less than fair value and that are allegedly subsidized by the government of China.

I. The Legal Standard for Preliminary Determinations

The legal standard for preliminary antidumping and countervailing duty determinations requires the Commission to determine, based upon the information available at the time of the preliminary determinations, whether there is a reasonable indication that a domestic industry is materially injured or threatened with material injury, or that the establishment of an industry is materially retarded, by reason of the allegedly unfairly traded imports.[1] In applying this standard, the Commission weighs the evidence before it and determines whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of such injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[2]

II. Background

Wincom Inc. ("Wincom" or "Petitioner"), a U.S. purifier and distributor of corrosion inhibitors, filed the petitions in these investigations on February 5, 2020. Texmark Chemical Inc. ("Texmark") and SantoLubes LLC ("SantoLubes"), toll producers that produce crude corrosion inhibitors for Wincom, submitted letters of support for the petitions.[3] Representatives for Petitioner, Texmark, SantoLubes, and Zibex, Inc., a purchaser of corrosion inhibitors, appeared at the staff conference accompanied by Petitioner's counsel, and Petitioner submitted a postconference brief.

Several respondent entities participated in these investigations. Counsel for Dober Chemical Corporation ("Dober"), a purchaser of corrosion inhibitors, appeared at the staff conference and submitted a postconference non-interested party statement. SUEZ WTS USA, Inc. ("Suez"), and Nalco Company, LLC ("Nalco"), importers of corrosion inhibitors, did not appear at the staff conference but submitted postconference briefs.

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[1] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States, 2*0 CIT 353, 354-55 (1996).

[2] *American Lamb Co*., 785 F.2d at 1001; *see also Texas Crushed Stone Co. v. United States*, 35 F.3d 1535, 1543 (Fed. Cir. 1994).

[3] *See* Petition at Exhibit I-1.

U.S. industry data in the Commission's report are based on the questionnaire responses of three firms – Wincom and its toll producers Texmark and SantoLubes – accounting for the vast majority of U.S. production of corrosion inhibitors in 2019.[4] U.S. import data are based on official Commerce import statistics under HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220 and the questionnaire responses from 17 U.S. importers, accounting for *** of U.S. imports of corrosion inhibitors from China in 2019 under those two HTS numbers.[5] Foreign industry data and related information are based on the questionnaire response of Nantong Botao Chemical Co., Ltd. ("Nantong Botao"), which is estimated to account for *** of all corrosion inhibitor production in China in 2019, and *** of all U.S. imports of corrosion inhibitors from China in 2019.[6]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[7] 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."[8] In turn, the Tariff Act defines

[4] Confidential Report, INV-SS-030 (Mar. 16, 2020) (as revised by memoranda INV-SS-031 (Mar. 17, 2020) (CR) and Public Report (PR) at I-3 to I-4. The Commission also received U.S. producer questionnaire responses from ***, in which these entities reported varying processing operations. CR/PR at I-4 n.6. As discussed in part IV.B below, we find for the purposes of our preliminary determinations that these *** entities do not engage in sufficient production-related activities to be considered domestic producers.

[5] CR/PR at IV-1. Staff estimated import coverage by comparing the quantity of U.S. imports of corrosion inhibitors from China in 2019 reported in the combined 17 U.S. importer questionnaires *** with the 10.5 million pounds of total U.S. imports of corrosion inhibitors from China reported in official import statistics under HTS statistical reporting numbers 2933.99.8210 (benzotriazole) and 2933.99.8220 (tolyltriazole). *Id.* at IV-1 n.2. However, U.S. import data are likely understated because additional imports from China arrived under HTS statistical reporting number 2933.99.8290. This is a "basket" category that includes both in-scope liquid tolyltriazole and liquid benzotriazole and out-of-scope merchandise. *Id*. Importer questionnaire responses indicate that *** pounds of U.S. imports that arrived under the "basket" category HTS statistical reporting number 2933.99.8290 during 2019 were out-of-scope merchandise. *Id.* at IV-1. We invite the parties in their comments on the draft questionnaires to address the best method for ascertaining and measuring in any final phase investigations the in-scope merchandise that is included in this "basket" category.

[6] CR/PR at I-4.

[7] 19 U.S.C. § 1677(4)(A).

[8] 19 U.S.C. § 1677(4)(A).

"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."[9]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[10] Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[11] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[12] The decision regarding the appropriate domestic like product(s) 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.[13] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[14]

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[9] 19 U.S.C. § 1677(10).

[10] 19 U.S.C. § 1677(10). The Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See*, *e.g.*, *USEC, Inc. v. United States*, 34 Fed. App'x 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).

[11] *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v. United States*, Case No. 19-1289, slip op. at 8-9 (Fed. Circ. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[12] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *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); *Torrington Co. v. United States*, 747 F. Supp. 744, 748–52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[13] *See*, *e.g.*, *Cleo*, 501 F.3d at 1299; *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*, 747 F. Supp. at 749 n.3 ("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).

[14] *See*, *e.g.*, S. Rep. No. 96-249 at 90–91 (1979).

The Commission looks for clear dividing lines among possible like products and disregards minor variations.[15]

A. Scope Definition

In its notices of initiation, Commerce defined the imported merchandise within the scope of these investigations as:

> The merchandise covered by this investigation is tolyltriazole and benzotriazole. This includes tolyltriazole and benzotriazole of all grades and forms, including their sodium salt forms. Tolyltriazole is technically known as Tolyltriazole IUPAC 4,5 methyl benzotriazole. It can also be identified as 4, 5 methyl benzotriazole, tolutriazole, TTA, and TTZ.
>
> Benzotriazole is technically known as IUPAC 1,2,3-Benzotriazole. It can also be identified as 1,2,3-Benzotriazole, 1,2-Aminozophenylene, 1H-Benzotriazole, and BTA.
>
> All forms of tolyltriazole and benzotriazole, including but not limited to flakes, granules, pellets, prills, needles, powder, or liquids, are included within the scope of these petitions.
>
> The scope includes tolyltriazole/sodium tolyltriazole and benzotriazole/sodium benzotriazole that are combined or mixed with other products. For such combined products, only the tolyltriazole/sodium tolyltriazole and benzotriazole/sodium benzotriazole component is covered by the scope of these investigations. Tolyltriazole and sodium tolyltriazole that have been combined with other products is included within the scope, regardless of whether the combining occurs in third countries.
>
> Tolyltriazole, sodium tolyltriazole, benzotriazole and sodium benzotriazole that is otherwise subject to these investigations is not excluded when commingled with tolyltriazole, sodium tolyltriazole, benzotriazole, or sodium benzotriazole from sources not subject to these investigations. Only the subject merchandise component of such commingled products is covered by the scope of these investigations.

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[15] *See*, *e.g.*, *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.").

> A combination or mixture is excluded from this investigation if the total tolyltriazole or benzotriazole component of the combination or mixture (regardless of the source or sources) comprises less than 5 percent of the combination or mixture, on a dry weight basis.
>
> Notwithstanding the foregoing language, a tolyltriazole or benzotriazole combination or mixture that is transformed through a chemical reaction into another product, such that, for example, the tolyltriazole or benzotriazole can no longer be separated from the other products through a distillation or other process is excluded from this investigation.
>
> Tolyltriazole has the Chemical Abstracts Service ("CAS") registry number 299385-43-1. Tolyltriazole is classified under Harmonized Tariff Schedule of the United States ("HTSUS") subheading 2933.99.82.20.
>
> Sodium Tolyltriazole has the CAS registry number 64665-57-2 and is classified under HTSUS subheading 2933.99.82.90.
>
> Benzotriazole has the CAS registry number #95-14-7 and is classified under HTSUS subheading 2933.99.82.10.
>
> Sodium Benzotriazole has the CAS registry number 15217-42-2. Sodium Benzotriazole is classified under HTSUS subheading 2933.99.82.90.[16]

The in-scope merchandise encompasses solid and liquid forms of tolyltriazole ("TTA") and benzotriazole ("BTA"). Before TTA and BTA are used commercially, they undergo a purification process; the purified product may be sold in solid or liquid forms.[17] These products are collectively referred to as corrosion inhibitors, and are used to protect elements and metal alloys, including copper, copper alloys, zinc, cobalt, silver, aluminum, and steel from corrosion.[18] They are typically used in applications such as industrial water treatment, automotive fluids, metalworking fluids, aircraft and runway de-icers, lubricants, cleaners, direct treatment, circuit boards, inks, and coatings.[19]

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[16] *Certain Corrosion Inhibitors From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 85 Fed. Reg. 12506, 12510-11 (Mar. 3, 2020); *Certain Corrosion Inhibitors From the People's Republic of China: Initiation of Countervailing Duty Investigation*, 85 Fed. Reg. 12502, 12506 (Mar. 3, 2020). Staff determined that one of the CAS registry numbers were reported incorrectly by Commerce in its scope. CR/PR at I-7 n.12.

[17] *See* CR/PR at Figure I-2. Solid TTA or BTA can be added to sodium hydroxide, referred to as "caustic," and water to produce liquid forms, referred to as "sodium" TTA or BTA. CR/PR at I-9 n. 25.

[18] CR/PR at I-8.

[19] CR/PR at II-1.

B. Arguments of the Parties

Petitioner proposes that the Commission define a single domestic like product. It contends that TTA and BTA share similar physical characteristics and end uses; can be produced in the same production facilities using the same employees and similar production processes, with the only difference being the primary raw material; are both sold to end users and distributors in the U.S. market; and are generally considered by market participants to be interchangeable.[20] It also claims that prices for TTA and BTA fall within the same general range.[21] Petitioner also observes that, even to the extent that there may be differences between TTA and BTA, BTA is not currently produced in the United States and TTA is the most similar domestically produced product.[22]

Suez does not contest the Petitioner's definition of the domestic like product, but reserves the right to address the definition in any final phase of the investigations.[23] The other respondents do not directly make like product arguments, nor do they contend that application of the Commission's like product analysis warrants a finding of multiple like products. They do, however, contend that TTA and BTA are not interchangeable.[24]

C. Analysis

Based on the record, we define a single domestic like product coextensive with the scope.

Physical Characteristics and Uses. Structurally, the difference between BTA and TTA is that the latter has a methyl group on its benzene ring.[25] The chemical formula of liquid BTA is $Na(C_6H_4N_3)$ and of liquid TTA is $Na(CH_3C_6H_4N_3)$.[26] Both solid BTA and solid TTA can be produced and sold as powder, flakes, granules, or crystals.[27] The color of solid BTA ranges from white to light tan and solid TTA ranges from white to light brown.[28] Liquid BTA can range from colorless to a pale yellow and liquid TTA can range from pale yellow to amber.[29] Liquid BTA and liquid TTA are both solubilized for use in a 40-50 percent concentration.[30]

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[20] Wincom's Postconference Brief at 4-7.
[21] Wincom's Postconference Brief at 7.
[22] Wincom's Postconference Brief at 4, 9 n.31.
[23] Suez's Postconference Brief at 6.
[24] Nalco's Postconference Brief at 1-4; Dober's Postconference Statement at 4-5, 10-11.
[25] CR/PR at I-8.
[26] CR/PR at I-8.
[27] CR/PR at I-9.
[28] CR/PR at I-9.
[29] CR/PR at I-9.
[30] CR/PR at I-9.

BTA and TTA, in either solid or liquid form, overlap in many end-use applications, including industrial water treatment, automotive fluids, metalworking fluid, de-icer, lubricants, cleaners, direct treatment, circuit boards, and inks and coatings.[31] There are some applications however, in which only BTA can be used, such as a vapor phase corrosion inhibitor.[32]

A majority (four of five) of entities responding as U.S. producers[33] indicated that the physical characteristics and uses of TTA and BTA are mostly comparable or similar, while one producer indicated that they were somewhat comparable or similar.[34] Half (six of 12) of responding U.S. importers indicated that the physical characteristics and uses of TTA and BTA were mostly comparable or similar, while the other six indicated that they were somewhat or never comparable.[35]

Manufacturing Facilities, Production Processes and Employees. Although Wincom does not currently do so, it claims to have the ability to produce BTA using the same or similar manufacturing equipment and employees that it uses to produce TTA.[36] Wincom claims that its patented process for the production of TTA can be applied to BTA.[37] The manufacturing phases for BTA products are similar to the manufacturing phases for TTA products: crude process, purification, production of desired chemical form, and packaging and reconstitution.[38] The difference is that the manufacturing process for BTA products uses orthophenylenediamine ("OPD") as a raw material input in place of ortho toluenediamine ("oTDA").[39] Liquid TTA and BTA are manufactured by adding sodium hydroxide, referred to as "caustic," and water to the purified TTA and BTA.[40] Solid TTA and BTA are manufactured by acidifying and flaking purified TTA and BTA.[41]

A majority (five of six) of entities responding as U.S. producers indicated that the manufacturing facilities, production processes and employees for TTA and BTA were fully or

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[31] CR/PR at Table I-1.

[32] CR/PR at I-11.

[33] For purposes of the discussion in this section, entities responding as U.S. producers include Wincom, Texmark, SantoLubes, Suez, PMC, and Dober.

[34] CR/PR at Table D-3.

[35] CR/PR at Table D-3.

[36] CR/PR at I-14.

[37] CR/PR at I-14; *see also* Wincom's U.S. Producer Questionnaire Response at Question V-1c (***). As described by Wincom President Jim Milawski, Wincom has been planning to expand its production to include domestic production of BTA. Conf. Tr. at 19-20 (Milawski). *But see* Wincom's U.S. Producer Questionnaire Response at Question III-15 (Wincom ***).

[38] CR/PR at I-11, Fig. I-2.

[39] CR/PR at I-14 to I-15.

[40] CR/PR at I-9 n.25, Fig. I-2.

[41] CR/PR at I-13, I-15.

mostly comparable, while one indicated that they were somewhat comparable.[42] A majority (five of nine) of responding U.S. importers indicated that the manufacturing facilities, production processes and employees for TTA and BTA were fully or mostly comparable, while four indicated that they were somewhat or never comparable.[43]

Channels of Distribution. Wincom's two toll producers, SantoLubes and Texmark, directed *** shipments of crude TTA to Wincom, and Wincom *** directed its shipments to end users and distributors (as did importers of subject merchandise).[44] All five entities responding as U.S. producers indicated that the channels of distribution for TTA and BTA are fully or mostly comparable.[45] A majority (eight of ten) of responding U.S. importers indicated that the channels of distribution for TTA and BTA are fully or mostly comparable, while two indicated that they are somewhat comparable.[46]

Interchangeability. A majority (three of five) of entities responding as U.S. producers indicated that TTA and BTA are fully or mostly interchangeable, while two indicated that they are somewhat interchangeable.[47] Three of 12 responding U.S. importers indicated that TTA and BTA are mostly interchangeable while nine indicated that they are somewhat or never interchangeable.[48]

Producer and Customer Perceptions. A majority (four of six) of entities responding as U.S. producers indicated that producer and customer perceptions of TTA and BTA are fully or mostly comparable, while two indicated that they are somewhat comparable.[49] A majority (seven of 13) of responding U.S. importers indicated that producer and customer perceptions of TTA and BTA are fully or mostly comparable, while six indicated that they are somewhat or never comparable.[50]

Price. The available pricing data exclusively concern TTA products, which are the sole in-scope products produced domestically.[51] Half (three of six) of the entities responding as U.S. producers indicated that the price of TTA and BTA was mostly comparable, while three indicated that the price was somewhat comparable.[52] Three of 11 responding U.S. importers

[42] CR/PR at Table D-3.
[43] CR/PR at Table D-3.
[44] CR/PR at Table II-1.
[45] CR/PR at Table D-3.
[46] CR/PR at Table D-3.
[47] CR/PR at Table D-3.
[48] CR/PR at Table D-3.
[49] CR/PR at Table D-3.
[50] CR/PR at Table D-3.
[51] CR/PR at V-3.
[52] CR/PR at Table D-3.

indicated that the price of TTA and BTA was fully or mostly comparable, while eight indicated that the price was somewhat or never comparable.[53]

Conclusion. Notwithstanding some limits on interchangeability and some differences in price, the record does not indicate that there is a clear dividing line between BTA and TTA in terms of physical properties, uses, production processes, and channels of distribution. Therefore, for purposes of our preliminary determinations, we define a single domestic like product coextensive with the scope in these investigations.[54]

IV. 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."[55] 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.

These investigations raise two domestic industry issues. The first concerns whether the production-related activities of Suez, PMC, and Dober are sufficient to constitute domestic production. The second concerns whether appropriate circumstances exist to exclude any domestic producers from the domestic industry pursuant to the related parties provision.

A. Arguments of the Parties

Petitioner argues that the domestic industry consists of Wincom and its two toll producers, Texmark and SantoLubes.[56] It contends that the Commission should not include in the domestic industry other entities which perform minor amounts of additional processing.[57] Petitioner further argues that even though Wincom is an importer of subject merchandise and is therefore a related party under the statute, it should not be excluded from the domestic industry.[58]

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[53] CR/PR at Table D-3.

[54] In any final phase of these investigations, if any party intends to argue that the Commission should adopt an alternative domestic like product definition(s), it should provide specific information in its draft questionnaire comments regarding whether and why the Commission should adopt an alternative definition(s) to allow the Commission to seek appropriate information and data for its analysis. *See* 19 C.F.R. § 207.63(b). If warranted, the Commission will reconsider this issue in the final phase of the investigations.

[55] 19 U.S.C. § 1677(4)(A).

[56] Wincom's Postconference Brief at 9.

[57] Wincom's Postconference Brief at 9-11.

[58] Wincom's Postconference Brief at Exhibit 1 at 12-15.

While Suez does not directly argue that the Commission should define the domestic industry to include it and other companies that carry out similar manufacturing processes, it did submit a producer questionnaire response, and argues that the domestic industry for corrosion inhibitors is larger than Wincom, Texmark, and SantoLubes.[59] It claims that imports of crude TTA undergo manufacturing processes in the United States similar to those that Wincom performs.[60]

B. Sufficient Production-Related Activities

In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm's U.S. production-related activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.[61]

We discuss below the data in the record for the three firms that submitted domestic producer questionnaire responses – Suez, PMC, and Dober – but whose status as domestic producers is disputed. Because the information in the record concerning the nature of each firm's U.S. production operations lacks uniformity,[62] we discuss each of the firms individually.[63]

[59] Suez's Postconference Brief at 19.

[60] Suez's Postconference Brief at 19.

[61] The Commission generally considers six factors: (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative and the Commission may consider any other factors it deems relevant in light of the specific facts of any investigation. *Crystalline Silicon Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012).

[62] Suez claims to ***, but also produces mixed and blended products in which TTA comprises five percent or more of the combination or mixture on a dry weight basis. Suez's Postconference Brief at 1, 19-20. ***. *See* Phone Notes with ***, EDIS Doc. No. 705107. Dober claims to react TTA purchased from China with caustic and water to produce liquid TTA, as well as blend TTA and BTA to be used in its end-use products. Dober's Postconference Statement at 1,8; Conf. Tr. at 138-139 (Helton).

[63] In particular, there is a lack of clarity whether the data in these firms' questionnaire responses were limited to corrosion inhibitor operations, as opposed to their production operations generally. In any final phase of these investigations, we intend to obtain more particularized information concerning the nature and extent of each firm's U.S. operations concerning corrosion inhibitors, focusing specifically on the nature of purification operations, as well as whether there is any production of crude BTA or TTA. Based on new or revised data, we may reconsider whether any of the firms engage in sufficient production-related activities to be considered a domestic producer.

1. Suez

Source and Extent of Capital Investment. Suez asserts that it ***.[64] It claims that, while ***.[65] ***.[66] ***.[67]

Technical Expertise Involved. Suez reported that the technical expertise related to its operations ***.[68] ***.[69]

Value Added. Suez reported that the value added by its operations is ***.[70] Staff estimates that the value added by Suez ranged from *** during the POI.[71]

Employment Levels. Suez reported that its production ***.[72] Suez reported *** production and related workers (PRWs) during the POI.[73]

Quantity and Type of Parts Sourced in the United States. Suez ***. While Suez reported production of *** pounds of corrosion inhibitors in 2017, *** pounds in 2018, and *** pounds in 2019, and subject imports of *** pounds in 2017, *** pounds in 2018, and *** pounds in 2019,[74] it also reported *** pounds of purchases of subject merchandise in 2017 through 2019, suggesting that Suez does not source appreciable quantities of crude TTA and BTA from the United States.[75]

Other Costs and Activities in the United States. Suez reported other costs and activities in the United States of ***.[76]

Conclusion. Based on the available information on the record, we find for purposes our preliminary determinations that Suez does not engage in sufficient production-related activities to be considered a domestic producer. While Suez claims that, ***, it provided no information on its capital expenditures and total assets. Further, while Suez reported *** levels of employment than *** or any other entity that reported being involved with production or purification activities, the firm stated that *** the instruction only to report those workers

[64] Suez's Postconference Brief at 19. Suez claims ***. *Id*.

[65] Suez's Postconference Brief at 19-20.

[66] Suez's Postconference Brief at 20.

[67] CR/PR at Tables E-3, E-13 and E-14.

[68] Suez's U.S. Producer Questionnaire Response at Question II-8.

[69] CR/PR at Tables E-3 and E-14.

[70] Suez's U.S. Producer Questionnaire Response at Question II-8.

[71] CR/PR at Table E-3. Staff used the standard value added formula of conversion costs (direct labor and other factory costs) as a percentage of total cost of goods sold (COGS). *Id.* at Table E-3 n.3. It should be noted, however, that ***. *Id.* at Table E-3, n.5.

[72] Suez's U.S. Producer Questionnaire Response at Question II-8.

[73] CR/PR at Table E-3. ***. *Id.* at n.5.

[74] CR/PR at Table E-8. Suez's ratio of U.S. production to subject imports was *** percent in 2017 and *** percent in 2018. *Id.*

[75] CR/PR at Table V-8.

[76] Suez's U.S. Producer Questionnaire Response at Question II-8.

involved in production of corrosion inhibitors. Additionally, the technical expertise involved with its production processes appears to be less than Wincom's patented process, its value added is modest, and it does not appear to source its raw materials from the United States.

2. PMC

Source and Extent of Capital Investment. PMC did not report the nature of the activities that it conducts in its questionnaire.[77] In response to subsequent staff inquiries, PMC indicated that it engages in purification processes similar to Wincom's and may also produce crude TTA.[78] PMC reported that ***.[79] PMC did ***.[80] Total assets reported by PMC were $*** in 2017, $*** in 2018, and $*** in 2019.[81]

Technical Expertise Involved. PMC reported that it ***.[82] PMC did ***.[83]

Value Added. PMC reported that it ***.[84] Staff estimates that the value added by PMC ranged from *** during the POI.[85]

Employment Levels. PMC reported that it ***.[86] PMC reported *** PRWs during the POI.[87]

Quantity and Type of Parts Sourced in the United States. PMC reported that it ***.[88] PMC reported production of *** pounds of corrosion inhibitors in 2017, *** pounds in 2018, and *** pounds in 2019, and subject imports of *** pounds in 2017, *** pounds in 2018, and *** pounds in 2019.[89]

Other Costs and Activities in the United States. PMC reported that it ***.[90]

Conclusion. Based on available information in the record, we find for purposes of our preliminary determinations that PMC does not engage in sufficient production-related activities

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[77] PMC's U.S. Producer Questionnaire Response at Question II-8.

[78] *See* Phone Notes with PMC Specialties Group, EDIS Doc. #705107.

[79] PMC's U.S. Producer Questionnaire Response at Question II-8.

[80] CR/PR at Table E-14.

[81] CR/PR at Tables E-3 and E-13.

[82] PMC's U.S. Producer Questionnaire Response at Question II-8.

[83] CR/PR at Tables E-3 and E-14.

[84] PMC's U.S. Producer Questionnaire Response at Question II-8.

[85] CR/PR at Table E-3. Staff used the standard value added formula of conversion costs (direct labor and other factory costs) as a percentage of total COGS. *Id.* at Table E-3 n.3. It should be noted, however, that ***. *Id.* at Table E-3 n.5.

[86] PMC's U.S. Producer Questionnaire Response at Question II-8.

[87] CR/PR at Table E-3.

[88] PMC's U.S. Producer Questionnaire Response at Question II-8.

[89] CR/PR at Table E-8. PMC's ratio of U.S. production to subject imports was *** percent in 2017 and *** percent in 2018 and *** percent in 2019. *Id.*

[90] PMC's U.S. Producer Questionnaire Response at Question II-8.

to be considered a domestic producer. The nature of PMC's production activities is not clear. While PMC claims to conduct the same purification process as Wincom, this seems unlikely considering that Wincom's purification process is patented, and Wincom's owner, ***, testified that he is not aware of any other entities in the United States that perform the same purification process as Wincom.[91] Furthermore, PMC reported no information on its capital expenditures and it appears not to source its raw materials from the United States. While PMC's reported value added and employment levels were *** than those Wincom reported, it is not clear if the variation is due to differing levels of processing activities or the way each company reported its expenses and employees. Indeed, notwithstanding its employment levels, PMC's reported production, ranging from *** pounds to *** pounds annually throughout the POI,[92] was *** less than that of Wincom, whose annual production ranged from *** pounds to *** pounds.[93]

3. Dober

Source and Extent of Capital Investment. Dober claims to react TTA purchased from China with sodium hydroxide and water to produce liquid TTA as well as blending TTA and BTA to be used in its water treatment and anti-freeze products.[94] Dober reported capital expenditures of $*** in 2017, $*** in 2018, and $*** in 2019.[95] Total assets reported by Dober were $*** in 2017, $*** in 2018, and $*** in 2019.[96]

Technical Expertise Involved. Dober reported that the technical expertise required for its operations involves ***.[97] Dober reported research and development expenses of $*** in 2017, $*** in 2018, and $*** in 2019.[98]

Value Added. Dober, which reported ***,[99] reported that the value added by its *** operations includes ***.[100] Staff estimates that the value added by Dober ranged from *** of total COGS during the POI.[101]

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[91] Conf. Tr. at 77 (Milawski).

[92] CR/PR at Table E-4.

[93] CR/PR at Table III-7.

[94] Dober's Postconference Statement at 1, 8; Conf. Tr. at 138-39 (Helton).

[95] CR/PR at Table E-14.

[96] CR/PR at Tables E-3 and E-13.

[97] Dober's U.S. Producer Questionnaire Response at Question II-8.

[98] CR/PR at Tables E-3 and E-14.

[99] Dober's U.S. Producer Questionnaire Response at Questions II-11 and III-9a.

[100] Dober's U.S. Producer Questionnaire Response at Question II-8.

[101] CR/PR at Table E-3. Staff used the standard value added formula of conversion costs (direct labor and other factory costs) as a percentage of total COGS. *Id.* at Table E-3 n.3.

Employment Levels. Dober reported *** PRWs during the POI.[102]

Quantity and Type of Parts Sourced in the United States. Dober reported production of *** pounds of corrosion inhibitors in 2017, *** pounds in 2018, and *** pounds in 2019, and purchases of subject imports of *** pounds in 2017, *** pounds in 2018, and *** pounds in 2019.[103]

Other Costs and Activities in the United States. Dober reported that ***.[104]

Conclusion. Based on the available information, we find for purposes of our preliminary determinations that Dober does not engage in sufficient production-related activities to be considered a domestic producer. Dober's value added is low, and it does not appear to source its raw materials from the United States. Furthermore, notwithstanding its reported employment and asset levels, Dober's reported production, ranging from *** pounds to *** pounds annually throughout the POI,[105] is *** less than that of Wincom, which reported annual production ranging from *** pounds to *** pounds.[106]

C. Related Parties

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to Section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[107]

[102] CR/PR at Table E-3.

[103] CR/PR at Table E-9. Dober's ratio of U.S. production to purchases of subject imports was *** percent in 2017 and *** percent in 2018 and *** percent in 2019. *Id.*

[104] Dober's U.S. Producer Questionnaire Response at Question II-8.

[105] CR/PR at Table E-4.

[106] CR/PR at Table III-7.

[107] *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem.,* 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[108]

We consider Petitioner and domestic producer Wincom under the related party provision because it imported subject merchandise during the POI.[109] Wincom imported *** pounds of corrosion inhibitors from China in 2017 (the equivalent of *** percent of its domestic production), *** pounds of corrosion inhibitors from China in 2018 (the equivalent of *** percent of its domestic production), and *** pounds of corrosion inhibitors from China in 2019 (the equivalent of *** percent of its domestic production).[110]

Wincom stated that it imported ***[111] Furthermore, Wincom reported capital expenditures *** of $*** in 2017, $*** in 2018, and $*** in 2019, and research and development expenses of $*** each year of the POI.[112] Wincom reported total net assets of $*** for each year of the POI.[113]

We find that appropriate circumstances do not exist to exclude Wincom from the domestic industry. Based on the record in the preliminary phase of these investigations, available data indicate that Wincom accounts for the overwhelming majority (if not all) of U.S. shipments of the domestic like product in the merchant market by domestic producers.[114] Consequently, exclusion of Wincom's data would provide an unrepresentative depiction of the domestic industry. Furthermore, according to Wincom, the purpose of its importation was to enable it to continue to compete in the TTA market and it has been unable to compete in the

[108] The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

(1) the percentage of domestic production attributable to the importing producer;

(2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);

(3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;

(4) the ratio of import shipments to U.S. production for the imported product; and

(5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. USITC*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015); *see also Torrington Co.*, 790 F. Supp. at 1168.

[109] CR/PR at Table III-12.

[110] CR/PR at Table III-12. During the POI, it appears that ***. *See* Wincom's U.S. Producer Questionnaire Response at Question II-5c. Wincom ***. *See* CR/PR at VI-7 n.8.

[111] CR/PR at Table III-12; *see also* Conf. Tr. at 19-20 (Milawski).

[112] CR/PR at VI-10 nn.16 & 17 and Table VI-5.

[113] CR/PR at Table VI-6.

[114] *Compare* CR/PR at Table III-10 (Wincom U.S. shipments) *with* CR/PR at Table E-6 (combined U.S. TTA and BTA shipments of Suez, PMC, and Dober).

BTA market due to low-priced subject imports. Moreover, Wincom made significant investments in its domestic production throughout the POI and its ratio of subject imports to domestic production, although high, declined throughout the POI.

We consequently define the domestic industry to include all domestic producers of the domestic like product. On the record in the preliminary phase of these investigations, this encompasses Wincom and its toll producers SantoLubes and Texmark.

V. Negligible Imports

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.[115]

Based on official Commerce import statistics under HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220, subject imports from China accounted for 98.1 percent of total U.S. imports of corrosion inhibitors in the 12-month period (February 2019 to January 2020) preceding the filing of the petitions.[116] Thus, we find that subject imports from China are not negligible.

VI. Reasonable Indication of Material Injury by Reason of Subject Imports

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[117] 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.[118] The statute defines "material injury" as "harm which is not inconsequential,

[115] 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). The exceptions to this general rule are not applicable here.

[116] CR/PR at Table IV-3.

[117] 19 U.S.C. §§ 1671b(a), 1673b(a).

[118] 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).

immaterial, or unimportant."[119] In assessing whether there is a reasonable indication that 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.[120] 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."[121]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[122] 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.[123] 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.[124]

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

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[119] 19 U.S.C. § 1677(7)(A).

[120] 19 U.S.C. § 1677(7)(C)(iii).

[121] 19 U.S.C. § 1677(7)(C)(iii).

[122] 19 U.S.C. §§ 1671b(a), 1673b(a).

[123] *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).

[124] 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 "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).

injury threshold.[125] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[126] 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.[127] It is clear that the existence of injury caused by other factors does not compel a negative determination.[128]

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"

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[125] Uruguay Round Agreements 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.

[126] 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.").

[127] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

[128] *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.").

as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[129]

The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports."[130] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[131]

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.[132] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[133]

B. Conditions of Competition and the Business Cycle

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

1. Demand Conditions

U.S. demand for corrosion inhibitors depends on the demand for certain U.S.-produced downstream products or services.[134] The largest end uses for corrosion inhibitors are industrial

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[129] *Mittal Steel*, 542 F.3d at 876 &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 *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal Steel*.

[130] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[131] *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.").

[132] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[133] *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.").

[134] CR/PR at II-5.

water treatment and automotive fluids.[135] Corrosion inhibitors typically account for a small share of the cost of the end-use products in which they are used.[136]

Most market participants reported that U.S. demand for corrosion inhibitors either was unchanged or fluctuated during the POI.[137] Apparent U.S. consumption of corrosion inhibitors fluctuated on an annual basis but increased overall by *** percent from 2017 to 2019.[138] Apparent U.S. consumption increased from *** pounds in 2017 to *** pounds in 2018 before decreasing to *** pounds in 2019.[139]

2. Supply Conditions

During the POI, the U.S. market was supplied by the domestic industry, subject imports from China, and nonsubject imports. The domestic industry was the second largest source of supply. Its share of apparent U.S. consumption decreased from *** percent in 2017 to *** percent in 2018 and then increased to *** percent in 2019, which was below the level of 2017.[140] The domestic industry only supplies purified liquid TTA commercially, and toll producers SantoLubes and Texmark ship all of their crude TTA production to Wincom.[141] The domestic industry does not produce BTA in any form.[142]

Subject imports were the largest source of supply in the U.S. market. Subject imports' share of apparent U.S. consumption increased from *** percent in 2017 to *** percent in 2018 before decreasing to *** percent in 2019, which was still above the 2017 level.[143] Subject producers supply both BTA and TTA to the U.S. market[144] and, according to respondents, supply the merchant market with crude TTA.[145]

Nonsubject imports were a small source of supply to the U.S. market throughout the POI. Nonsubject imports' share of apparent U.S. consumption decreased from *** percent in 2017 to ***.[146] The largest sources of nonsubject imports were Japan, Germany, and Kuwait.[147]

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[135] CR/PR at I-10, II-1.
[136] CR/PR at II-6.
[137] CR/PR at Table II-4.
[138] CR/PR at Tables IV-5, C-1.
[139] CR/PR at Table IV-5.
[140] CR/PR at Table IV-5.
[141] CR/PR at I-13, Tables III-8, III-10.
[142] CR/PR at I-14. Petitioner estimates that Wincom ***. Petitioner's Postconference Brief at Exhibit 1 at 10-11.
[143] CR/PR at Table IV-5.
[144] CR/PR at I-14, Table IV-4.
[145] Suez's Postconference Brief at 2. ***. CR/PR at Table IV-1.
[146] CR/PR at Table IV-5.

3. Substitutability and Other Conditions

There is a moderate-to-high degree of substitutability between domestically produced corrosion inhibitors and subject imports, although the degree of substitutability depends on such factors as relative price, type of product, quality, and conditions of sale.[148] As noted above, the domestic industry currently only offers liquid TTA for commercial sale while Chinese producers offer TTA and BTA in both solid and liquid forms. The one responding U.S. producer (***) and a majority (eight of 12) of responding U.S. importers indicated that domestically produced corrosion inhibitors and subject imports are always or frequently interchangeable.[149]

Price is an important factor in purchasing decisions. Purchasers responding to lost sales and lost revenue allegations reported price, along with quality and availability, as a major factor affecting purchasing decisions.[150] The one responding U.S. producer (***) and a majority (nine of 13) of responding U.S. importers indicated that differences other than price between domestically produced corrosion inhibitors and subject imports are sometimes or never significant.[151]

TTA is produced using oTDA and sodium nitrite.[152] The price of oTDA was *** and the price of sodium nitrite *** during the POI.[153] BTA is produced from OPD and sodium nitrite.[154]

U.S. producers reported selling ***.[155] Importers reported selling most of their corrosion inhibitors in spot sales or under short-term contracts.[156]

[147] CR/PR at II-5.

[148] CR/PR at II-7.

[149] CR/PR at Table II-5. Three importers reported that the domestic like product and subject imports were sometimes interchangeable and one reported that they were never interchangeable. *Id.*

[150] CR/PR at II-8.

[151] CR/PR at Table II-6

[152] CR/PR at V-1.

[153] CR/PR at V-1. Respondent Dober claims that there is recently an abundant global supply of oTDA after a Saudi Arabian producer entered the market. Dober's Postconference Statement at 4; Conf. Tr. at 127 (Bode).

[154] CR/PR at V-1.

[155] CR/PR at Table V-2.

[156] CR/PR at Table V-2.

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."[157]

Subject imports had a large and predominant presence in the U.S. market throughout the POI. Subject imports increased from 9.9 million pounds in 2017 to 12.8 million pounds in 2018 before decreasing to 10.5 million pounds in 2019.[158] Subject imports' share of U.S. apparent consumption increased from *** percent in 2017 to *** percent in 2018 before decreasing to *** percent in 2019.[159] Moreover, notwithstanding that subject imports were by far the predominant supplier to the U.S. market in 2017, their quantity increased by *** percent overall from 2017 to 2019.[160] Subject imports also captured some of the domestic industry's relatively modest market share, gaining *** percentage points of market share between 2017 and 2019 while the domestic industry lost *** percentage points of market share during the same period.[161]

We have considered respondents' arguments that conditions of competition mitigate the significance of subject import volume. In particular, they contend that high subject import volume and market penetration can be explained by the limited range of products the domestic industry offers in the merchant market.[162]

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[157] 19 U.S.C. § 1677(7)(C)(i).

[158] CR/PR at Table IV-2.

[159] CR/PR at Tables IV-5.

[160] CR/PR at Table C-1.

[161] CR/PR at Table IV-5. The domestic industry's share of apparent U.S. consumption decreased from *** percent in 2017 to *** percent in 2018 before increasing to *** percent in 2019. *Id*. Additionally, the *** from 2017 to 2019. It increased from *** percent in 2017 to *** percent in 2018 before decreasing to *** percent in 2019. Derived from CR/PR at Tables III-7 and IV-2.

[162] Nalco's Postconference Brief at 7-8; Suez's Postconference Brief at 22-23. Respondents cite *Titanium Sponge from Japan and Kazakhstan*, Inv. Nos. 701-TA-587 and 731-TA-1385-1386 (Preliminary), USITC Pub. 4736 (Oct. 2017), for the proposition that subject import volume and effects cannot be significant here. We find *Titanium Sponge* to be inapposite. There the Commission found that there were virtually no commercial sales of the domestic like product on which to base a meaningful analysis of market share shifts or price comparisons. *See* USITC Pub. 4736 at 25-26. Here, however, the record indicates that Wincom does make commercial sales of the domestic like product, in the form of purified liquid TTA.

They also contend that the domestic industry's own imports of subject merchandise reduce the significance of subject import volume.[163]

While we acknowledge product range differences between the subject imports and the domestic industry, questionnaire data indicate that most U.S. shipments of the subject merchandise during the POI were TTA products, the type of corrosion inhibitor produced by the domestic industry.[164] Furthermore, Wincom claims it would produce BTA, but it cannot compete with the low price of subject imports.[165] Additionally, while *** was ***– accounting for *** percent of all reported subject imports in 2017, *** percent in 2018, and *** percent in 2019[166] – its volume of imports declined each year during the POI while the total volume of subject imports increased from 2017 to 2019.[167] This reflects in part Wincom's acquisition of crude TTA from domestic sources during the POI.[168] Consequently, although Wincom was the single largest importer of subject merchandise, it was not responsible for the vast majority of subject imports in the market nor was it responsible for the increase in subject import volume during the POI.

In light of the foregoing, we find for purposes of our preliminary determinations that the volume of subject imports is significant in both absolute terms and relative to consumption in the United States.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of 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

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[163] Nalco's Postconference Brief at 5-8; Dober's Postconference Statement at 6. Suez also argues that import trends over the last ten years evidence a cyclical trend that has decreased over the POI. Suez's Postconference Brief at 23-25. The Commission's typical practice is to observe import trends over a three-year period of investigation. The record does not indicate that conditions of competition in the U.S. market during the POI were comparable to those during preceding periods.

[164] CR/PR at Table IV-4. Official U.S. import statistics cited by Suez and the Petitioner also indicate that most subject imports during the POI were TTA products, as opposed to BTA products. Suez's Postconference Brief at 9. Petitioner's Postconference Brief at Exhibit 3. In any final phase investigations, we intend to collect U.S. producer and importers' U.S. shipment data on a product specific basis for TTA and BTA.

[165] Wincom's Postconference Brief at Exhibit 1 at 11.

[166] CR/PR at IV-3 n.4.

[167] *Compare* CR/PR Tables III-12, IV-2. Wincom's ratio of imports from China to U.S. production also *** from *** percent in 2017 to *** percent in 2018, and *** to *** percent in 2019). CR/PR at Table IV-2; *see also* Table III-12 (summarizing "Wincom's reason for importing").

[168] ***. CR/PR at VI-7 n.8.

(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.[169]

As addressed in Section VI.B.3 above, the record indicates that there is a moderate-to-high degree of substitutability between subject imports and the domestic like product and that price is an important factor in purchasing decisions.

The Commission collected quarterly pricing data from U.S. producers and importers on three TTA products shipped to unrelated U.S. customers during the POI.[170] One U.S. producer (***) and nine importers of corrosion inhibitors from China provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[171] Reported pricing data accounted for approximately *** of the U.S. producers' U.S. commercial shipments and 14.4 percent of U.S. commercial shipments of subject imports in 2019.[172] There was pervasive underselling throughout the POI. Subject imports consisting of *** pounds undersold the domestic like product in all 18 quarterly comparisons, at margins ranging from *** percent to *** percent.[173]

Information collected in response to lost sales allegations further supports a finding that subject imports were recurrently priced lower than the domestic like product and that subject imports gained sales as a result of lower prices. A majority (eight of 15) of responding purchasers reported that, since 2017, they had purchased subject imports instead of the

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[169] 19 U.S.C. § 1677(7)(C)(ii).

[170] Product 1 is sodium TTA in totes of 2,400 to 2,600 pounds dry weight. Product 2 is sodium TTA in drums of 450 to 550 pounds dry weight. Product 3 is TTA in supersacks 1,000 to 1,200 pounds dry weight. CR/PR at V-3.

[171] CR/PR at V-3. U.S. producers did not report any pricing data for Product 3, which is solid TTA, for which domestic production is not sold in the merchant market.

Suez questions the comparability of the domestic and imported pricing products. It contends that the Commission's pricing data compare crude subject import products with the purified product Wincom sells, and points out that Wincom has estimated that its purification process accounts for *** of the value of its final product. Suez's Postconference Brief at 26-27. The record does not indicate, however, that subject import prices for pricing products 1 and 2 are only of crude product. Furthermore, even if product differences can explain some of the underselling, they likely cannot fully explain the magnitude. Average underselling margins were *** percent for Pricing Product 2 and *** percent for Pricing Product 1. CR/PR at Table V-7. This exceeds both the figure Suez provides for the value added by Wincom's purification process and the staff's estimate of the value added by that process. *See* CR/PR at II-4. Nevertheless, in any final phase of these investigations, we intend further to examine pricing product definitions, and we invite the parties in their comments on draft questionnaires to address how pricing information should be collected to improve the comparisons.

[172] CR/PR at V-3 to V-4.

[173] CR/PR at Table V-7.

domestic like product.[174] Six of these purchasers reported that subject imports were lower priced than the domestic like product, and three of these purchasers reported that price was the primary reason for their decision to purchase subject imports rather than the domestic like product.[175] These three purchasers estimated that they purchased *** pounds of subject imports instead of domestic like product.[176]

In light of the record evidence indicating that subject import prices were lower than the prices for the domestic like product and that the domestic industry lost sales to subject imports at least in part due to price, we find for purposes of our preliminary determinations that the underselling by subject imports was significant.

We have also considered price trends for the domestic like product and subject imports during the POI. Prices for both domestically produced pricing products were lower in the fourth quarter of 2019 than the first quarter of 2017.[177] Although subject import prices generally increased modestly over the POI, they remained well below domestic producer prices.[178] The record does not indicate any other factor, other than low-priced subject imports, that can explain the magnitude of the price declines for the domestically produced pricing products. Apparent U.S. consumption fluctuated but increased overall during the POI.[179] The domestic industry's average unit cost of goods sold (COGS) fluctuated but increased overall during the POI from $*** per pound in 2017 to $*** per pound in 2018 and $*** per pound in 2019.[180] Moreover, information collected in response to lost revenue allegations further supports a finding that competition from subject imports caused prices for the domestic like product to decline. Three of 15 responding purchasers reported that U.S. producers had reduced prices in

[174] CR/PR at Table V-9.

[175] CR/PR at Table V-9.

[176] CR/PR at Table V-9

[177] CR/PR at Table V-6. Prices for domestically produced Product 1 declined by *** percent and prices for domestically produced Product 2 declined by *** percent from the first quarter of 2017 to the fourth quarter of 2019. *Id.*

[178] CR/PR at Table V-6. Prices for subject imports of Product 1 were the same in the first quarter of 2019 (the last quarter in which data available) as compared to the first quarter of 2017, however, they fluctuated in between; prices for subject imports of Product 2 increased by *** percent from the first quarter of 2017 to the fourth quarter of 2017 and then generally decreased through the fourth quarter of 2019, ending *** percent higher than in the first quarter of 2017. Derived from CR/PR at Tables V-3, V-4, and V-6.

[179] Apparent U.S. consumption increased by *** percent overall during the POI. CR/PR at C-1. While apparent U.S. consumption decreased by *** percent from 2018 to 2019, *id.,* prices for the domestically produced pricing products showed much steeper declines. Prices for domestically produced Product 1 declined by *** percent and prices for domestically produced Product 2 declined *** from the first quarter of 2018 to the last quarter of 2019. Derived from CR/PR at Tables V-3 & V-4.

[180] CR/PR at VI-1. The prices of raw materials for TTA *** (oTDA) or *** (sodium nitrite) during the POI. CR/PR at V-1.

order to compete with subject imports.[181] The reported estimated price reduction ranged from *** percent.[182]

The record consequently supports a finding that the subject imports had significant price-depressing effects.[183]

In light of the foregoing, we find for purposes of these preliminary determinations that there was a significant volume of subject imports that significantly undersold the domestic like product. Moreover, these imports depressed prices for domestically produced corrosion inhibitors to a significant degree. We consequently find that the subject imports had significant price effects.

E. Impact of the Subject Imports[184]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, 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."[185]

U.S. demand for corrosion inhibitors grew over the POI, with apparent U.S. consumption increasing by *** percent overall from 2017 to 2019.[186] Nevertheless, several of the domestic industry's trade and financial indicators declined during this period.

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[181] CR/PR at Table V-10.

[182] CR/PR at Table V-10.

[183] We note that in 2019, the one year in which the domestic industry suffered a deterioration (*i.e.*, increase) in the ratio of COGS to net sales, it is unclear that prices would have otherwise increased given, for example, declining U.S. demand. CR/PR at Tables IV-5 and VI-1. This issue is complicated further by the entry of a new domestic producer in 2018 and other changes in domestic industry production that affected the industry's reported COGS. CR/PR at VI-8 n.11. However, having found significant price depression, we do not reach the question of whether subject imports prevented price increases that otherwise would have occurred to a significant degree.

[184] In its notice initiating the antidumping duty investigation on corrosion inhibitors from China, Commerce reported estimated dumping margins ranging from 384.97 to 420.32 percent. *Certain Corrosion Inhibitors From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 85 Fed. Reg. at 12509.

[185] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[186] CR/PR at Table C-1.

The domestic industry's output-related indicators generally declined overall from 2017 to 2019, notwithstanding some increases from 2017 to 2018 when apparent U.S. consumption increased by *** percent.[187] Wincom's production capacity increased overall by *** percent from 2017 to 2019.[188] During this period the capacity of toll producers SantoLubes and Texmark increased overall by *** percent.[189] Wincom's production decreased overall by *** percent.[190] The toll producers' production increased overall by *** percent.[191] Wincom's capacity utilization decreased each year of the POI for an overall decrease of *** percentage points.[192] The toll producers' capacity utilization increased by *** percentage points.[193] The domestic industry's U.S. shipments decreased overall by *** percent from 2017 to 2019.[194] The domestic industry's share of apparent U.S. consumption decreased overall by *** percentage points.[195] The domestic industry's inventories increased each year of the POI for an overall increase of *** percent.[196]

Trends in the domestic industry's employment factors were mixed, reflecting the fact that Texmark began production of crude TTA in 2018.[197] The number of Wincom's PRWs decreased overall by *** workers from 2017 to 2019.[198] The number of PRWs at toll producers

[187] CR/PR at Table C-1.

[188] CR/PR at Table C-1. Wincom's production capacity increased from *** pounds in 2017 to *** pounds in 2018 and *** pounds in 2019. CR/PR at Table III-7.

[189] CR/PR at Table C-1. SantoLubes and Texmark's production capacity increased from *** pounds in 2017 to *** pounds in 2018 and *** pounds in 2019. CR/PR at Table III-6. Texmark began production of TTA in 2018. CR/PR at III-4.

[190] CR/PR at Table C-1. Wincom's production quantity increased from *** pounds in 2017 to *** pounds in 2018 before decreasing to *** pounds in 2019. CR/PR at Table III-7.

[191] CR/PR at Table C-1. SantoLubes and Texmark's production quantity increased from *** pounds in 2017 to *** pounds in 2018 before decreasing to *** pounds in 2019. CR/PR at Table III-7.

[192] CR/PR at Table C-1. Wincom's capacity utilization decreased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019. CR/PR at Table III-7.

[193] CR/PR at Table C-1. SantoLubes and Texmark's capacity utilization increased from *** percent in 2017 to *** percent in 2018 before decreasing to *** percent in 2019. CR/PR at Table III-6.

[194] CR/PR at Table C-1. The domestic industry's U.S. shipments by quantity increased from *** pounds in 2017 to *** pounds in 2018 before decreasing to *** pounds in 2019. CR/PR at Table III-9.

[195] CR/PR at Table C-1. The domestic industry's share of apparent U.S. consumption decreased from *** percent in 2017 to *** percent in 2018 before increasing to *** percent in 2019. CR/PR at Table IV-5.

[196] CR/PR at Table C-1. The domestic industry's ending inventory quantity increased from *** pounds in 2017 to *** pounds in 2018 and *** pounds in 2019. CR/PR at Table III-11.

[197] CR/PR at Table III-3.

[198] CR/PR at Table III-14. The number of Wincom's PRWs decreased from *** in 2017 to *** in 2018 and remained at *** in 2019. *Id.*

increased overall by *** workers.[199] Total hours worked at Wincom fluctuated but increased overall by *** percent.[200] Total hours worked at toll producers increased overall by *** percent.[201] Hours worked per PRW at Wincom increased overall by *** percent.[202] Hours worked per PRW at toll producers decreased overall by *** percent.[203] Wincom's wages paid fluctuated but increased overall by *** percent.[204] Toll producers' wages paid increased overall by *** percent.[205] Hourly wages at Wincom decreased overall by *** percent.[206] Hourly wages at toll producers increased overall by *** percent.[207] Productivity at Wincom decreased overall by *** percent.[208] Productivity at toll producers decreased overall by *** percent.[209]

The domestic industry's financial performance declined overall during the POI, notwithstanding some increases from 2017 to 2018. The domestic industry's net sales revenues decreased overall by *** percent from 2017 to 2019.[210] The unit value of the domestic industry's net sales decreased overall by *** percent.[211] At the same time, the unit value of the domestic industry's unit COGS increased; the domestic industry's ratio of COGS to

[199] CR/PR at Table III-13. The number of SantoLubes and Texmark's PRWs increased from *** in 2017 to *** in 2018 before decreasing to *** in 2019. *Id.*

[200] Derived from CR/PR at Table III-14. Total hours worked at Wincom decreased from *** hours in 2017 to *** hours in 2018 before increasing to *** hours in 2019. CR/PR at Table III-14.

[201] Derived from CR/PR at Table III-13. Total hours worked at toll producers increased from *** hours in 2017 to *** hours in 2018 and *** hours in 2019. CR/PR at Table III-13.

[202] Derived from CR/PR at Table III-14. Hours worked per PRW at Wincom increased from *** hours in 2017 to *** hours in 2018 and *** hours in 2019. CR/PR at Table III-14.

[203] Derived from CR/PR at Table III-13. Hours worked per PRW at toll producers decreased from *** hours in 2017 to *** hours in 2018 before increasing to *** hours in 2019. CR/PR at Table III-13.

[204] Derived from CR/PR at Table III-14. Wincom's wages paid decreased from $*** in 2017 to $*** in 2018 before increasing to $*** in 2019. CR/PR at Table III-14.

[205] Derived from CR/PR at Table III-3. SantoLubes and Texmark's wages paid increased from $*** in 2017 to $*** in 2018 and $*** in 2019. CR/PR at Table III-3.

[206] Derived from CR/PR at Table III-14. Hourly wages at Wincom increased from $*** per hour in 2017 to $*** per hour in 2018 before decreasing to $*** per hour in 2019. CR/PR at Table III-14.

[207] Derived from CR/PR at Table III-13. Hourly wages at toll producers increased from $*** per hour in 2017 to $*** per hour in 2018 and $*** per hour in 2019. CR/PR at Table III-13.

[208] CR/PR at Table C-1. Productivity at Wincom increased from *** pounds per hour in 2017 to *** pounds per hour in 2018 before decreasing to *** pounds per hour in 2019. CR/PR at Table III-14.

[209] CR/PR at Table C-1. Productivity at toll producers decreased from *** pounds per hour in 2017 to *** pounds per hour in 2018 and *** pounds per hour in 2019. CR/PR at Table III-13.

[210] CR/PR at Table C-1. The domestic industry's net sales revenues increased from $*** in 2017 to $*** in 2018 before decreasing to $*** in 2019. CR/PR at Table VI-1.

[211] CR/PR at Table C-1. The unit value of the domestic industry's net sales increased from $*** per pound in 2017 to $*** per pound in 2018 before decreasing to $*** per pound in 2019. CR/PR at Table VI-1.

net sales increased by *** percentage points from 2017 to 2019.[212] The domestic industry's gross profits decreased overall by *** percent.[213] The domestic industry's operating income decreased overall, going from ***.[214] Its operating income to net sales margin decreased overall by *** percentage points, going from ***.[215] The domestic industry's net income also decreased overall, going from ***.[216]

The domestic industry's capital expenditures and net assets increased overall by *** and *** percent, respectively, from 2017 to 2019; these increases were attributable to ***.[217] The domestic industry's return on assets decreased each year of the POI, going from ***.[218] Two of the three domestic producers reported actual and potential negative effects on investment due to the subject imports and all three reported negative effects on growth and development.[219]

For purposes of our preliminary determinations, we find that the significant volume of lower-priced subject imports took sales from the domestic industry and depressed domestic prices, leading to shipments and revenues for the domestic industry that were lower than they would have been otherwise; in particular, lower prices led to declines in financial performance during 2019. In light of these considerations, we find that subject imports had a significant impact on the domestic industry.

Respondents argue that competition between subject imports and the domestic like product is attenuated because of differences in product range.[220] Although there are some

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[212] CR/PR at Table C-1. The domestic industry's average COGS to net sales ratio decreased from *** percent in 2017 to *** percent in 2018 before increasing to *** percent in 2019. CR/PR at Table VI-1.

[213] CR/PR at Table C-1. The domestic industry's gross profits increased from $*** in 2017 to $*** in 2018 before decreasing to $*** in 2019. CR/PR at Table VI-1.

[214] CR/PR at Table VI-1. The domestic industry's operating income increased from $*** in 2017 to $*** in 2018 before decreasing to *** in 2019. *Id.*

[215] CR/PR at Table C-1. The domestic industry's operating income to net sales margin increased from *** percent in 2017 to *** percent in 2018 before decreasing to *** percent in 2019. CR/PR at Table VI-1.

[216] CR/PR at Table VI-1. The domestic industry's net income increased from $*** in 2017 to $*** in 2018 before decreasing to *** in 2019. *Id.*

[217] CR/PR at Table C-1. The domestic industry's capital expenditures increased from $*** in 2017 to $*** in 2018 before decreasing to $*** in 2019. CR/PR at Table VI-5. Its net assets increased from $*** in 2017 to $*** in 2018 before decreasing to $*** in 2019. CR/PR at Table VI-6.

[218] CR/PR at Table VI-6. The domestic industry's return on assets decreased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019. *Id.*

[219] CR/PR at Tables VI-7 and VI-8.

[220] Suez's Postconference Brief at 28-31.

differences in product range, we have found that the domestic like product and subject imports are moderately to highly substitutable, as discussed above.

Moreover, as previously explained, the majority of U.S. shipments of subject merchandise consisted of TTA products, which is the type of product produced by the domestic industry.[221] Hence, the current record does not indicate that subject imports were present predominantly in products that the domestic industry does not supply.[222] As previously indicated, we intend to examine further the extent of competition between the domestic like product and subject imports in any final phase of these investigations. This includes examining the substitutability of the domestic like product and subject imports generally as well as the interchangeability between the various forms of the product. Furthermore, as previously noted, we intend to collect U.S. producers' and importers' U.S. shipment data on a product-specific basis, including crude, solid, and liquid forms of TTA and BTA, so we may better assess the overlap of competition between the domestic like product and subject imports.

Finally, we have also considered other factors to ensure that we are not attributing any injury they cause to subject imports. In this context, we have considered the role of nonsubject imports. They maintained a small presence in the U.S. market during the POI and were being

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[221] Respondents argue that substitutability between domestically produced corrosion inhibitors and subject imports is limited because domestic producers only sell purified liquid TTA in the merchant market, while subject imports include crude, solid, and liquid forms of both TTA and BTA. *See* Nalco's Postconference Brief at 4-5; Suez's Postconference Brief at 7-13. They also argue that TTA cannot be readily substituted for BTA in all applications in which the latter is used. Nalco's Postconference Brief at 1-4; Dober's Postconference Statement at 4-5, 10-11. In contrast, Petitioner contends that TTA and BTA can be substituted in a number of specific applications, with end users only needing to make minor adjustments to switch between them. Wincom's Postconference Brief at 6. Petitioner claims that it would attempt to produce BTA but for the low price of subject imports of BTA. Wincom's Postconference Brief at Exhibit 1 at 11.

As discussed in section III.C. above, market participants had mixed perceptions of the interchangeability of TTA and BTA, with three of five entities responding as producers indicating that TTA and BTA were frequently interchangeable and the remaining two indicating that they were somewhat interchangeable, while three of 12 responding importers reported that the products were frequently interchangeable, seven reported that they were somewhat interchangeable, and two reported that they were never interchangeable. CR/PR at Table D-3. Notwithstanding this, and the acknowledged differences in product range between the domestic like product and subject imports, market participants generally found the domestic like product and subject imports interchangeable.

We will examine the issue of the substitutability of the domestic like product and the subject imports further in any final phase of these investigations. We intend to seek data from purchasers about this question and will examine the extent to which domestically produced liquid TTA is interchangeable with imported BTA and imported solid TTA for end-use applications.

[222] We also note that information collected in response to lost sales allegations lends further support to there being direct price-based competition between the domestic like product and subject imports. *See* CR/PR at Table V-9.

sold at much higher average unit value (AUVs) than subject imports. Their market share ranged from *** percent to *** percent[223] and their AUVs ranged from $*** per pound to $*** per pound.[224] Nonsubject imports, therefore, cannot explain the underselling, price depression, lost sales, and lower shipments and revenues that we have attributed to the subject imports.

VII. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of subject imports of corrosion inhibitors from China that are allegedly subsidized and sold in the United States at less than fair value.

[223] CR/PR at Table IV-5.

[224] CR/PR at Table IV-2. Subject import AUVs ranged from $*** per pound to $*** per pound. *Id.* We acknowledge that differences in product mix may affect AUV comparisons but these are the best data available regarding nonsubject import prices.

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 Wincom Incorporated ("Wincom"), Blue Ash, Ohio, on February 5, 2020, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value ("LTFV") imports of corrosion inhibitors[1] from China. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
February 5, 2020	Petitions filed with Commerce and the Commission; institution of Commission investigations (85 FR 7784, February 11, 2020)
February 26, 2020	Commission's conference
February 25, 2020	Commerce's notice of initiation of LTFV investigation (85 FR 12506, March 3, 2020) and Commerce's notice of initiation of countervailing duty investigation (85 FR 12502, March 3, 2020)
March 19, 2020	Commission's vote
March 23, 2020	Commission's determinations
March 30, 2020	Commission's views

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--

> *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*

[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 who appeared at the conference is presented in appendix B of this report.

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]

(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

[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.

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, alleged 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

Corrosion inhibitors are generally used for corrosion protection in a variety of applications, such as industrial water treatment, automotive fluids, metalworking fluids, and for many other lubricants and fluids. The three U.S. producers (tollee and toll producers) of corrosion inhibitors are Wincom, SantoLubes LLC ("SantoLubes"), and Texmark Chemicals, Inc. ("Texmark"). The leading U.S. importers of corrosion inhibitors from China are ***. Nonsubject imports of corrosion inhibitors accounted for *** of all imports during 2017-19. U.S. purchasers of corrosion inhibitors are firms that distribute, process, and use corrosion inhibitors for a variety of purposes; leading purchasers include ***.

Apparent U.S. consumption of corrosion inhibitors totaled approximately *** in 2019. Currently, *** firms are known to produce corrosion inhibitors in the United States. U.S. producers' U.S. shipments of corrosion inhibitors totaled *** in 2019 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 pounds ($18.4 million) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of three firms, consisting of two groups. The first group includes tolling processor firms (tollees) that provide raw materials to the producer/toll producer, retain title to the product produced, and

ultimately sell the corrosion inhibitors to their customers. This group consists of the petitioner, Wincom. The second group includes toll producers (tollers) that either produce corrosion inhibitors for their own account or process the product for the account of other firms under a toll agreement. This group consists of SantoLubes and Texmark. The three firms that either toll produce or toll process corrosion inhibitors accounted for the vast majority of U.S. production of corrosion inhibitors during 2019. [6] Except as noted, U.S. import data are based on the questionnaire responses of 17 U.S. importers that are believed to have accounted for *** of all U.S. imports of corrosion inhibitors in 2019.[7] Foreign industry data and related information is based on the questionnaire response of Nantong Botao Chemical Co., Ltd. ("Nantong Botao") which is estimated to account for *** of all corrosion inhibitors produced in China in 2019. Nantong Botao's exports of corrosion inhibitors to the United States were equivalent to *** of all reported U.S. imports of corrosion inhibitors from China in 2019.

Previous and related investigations

Corrosion inhibitors have not been the subject of prior countervailing or antidumping duty investigations in the United States.

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On March 3, 2020, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on corrosion inhibitors from China.[8] Commerce identified the following 18 government programs in China[9]:

[6] The Commission also received U.S. producer questionnaire responses from ***. Additional U.S. producer data is presented in Appendix E of this report.

[7] The 17 U.S. importers reported importing *** pounds of in-scope corrosion inhibitors in 2019. In-scope corrosion inhibitors were imported under three HTS statistical reporting numbers 2933.99.8210, 2933.99.8220, and 2933.99.8290, the last of which is a basket category. Staff adjusted the basket category by subtracting out the imports of responding U.S. imports who indicated that their imports under the basket category were not corrosion inhibitors. Staff estimates that the U.S. import data based on questionnaire responses represents approximately ***percent of the adjusted official import statistics.

[8] 85 FR 12502, March 3, 2020.

[9] Certain Corrosion Inhibitors from the People's Republic of China *Enforcement and Compliance, Office of AD/CVD Operations, Initiation Checklist in the Countervailing Duty Investigation of Certain Corrosion Inhibitors from the People's Republic of China,* February 25, 2020.

1. Preferential policy lending
2. Export buyer's credit
3. Export seller's credit
4. Export credit guarantees
5. Export credit insurance
6. Special fund grants for energy saving technology reform
7. Grants for energy conservation and emission reduction
8. Grants, loans and other incentives for the development of famous brands
9. SME technology innovation fund
10. State key technology fund grants
11. SME international market exploration fund
12. Income tax reductions for high and new technology enterprises
13. Import tariff exemptions for foreign invested enterprises (FIEs) and certain domestic enterprises using imported equipment
14. Income tax credits for domestically owned companies purchasing domestically produced equipment
15. Provision of land use rights to corrosion inhibitor producers for LTAR
16. Provision of electricity for LTAR
17. Provision of ortho toluene diamine (oTDA) for LTAR
18. Provision of sodium nitrate for LTAR

Alleged sales at LTFV

On March 3, 2020, Commerce published a notice in the *Federal Register* of the initiation of its antidumping duty investigation on product from China.[10] Commerce has initiated the antidumping duty investigation based on estimated dumping margins that range from 384.97 percent to 420.32 percent for corrosion inhibitors from China.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[11]

> *The merchandise covered by this investigation is tolyltriazole and benzotriazole. This includes tolyltriazole and benzotriazole of all grades and forms, including their sodium salt forms. Tolyltriazole is technically known as Tolyltriazole IUPAC 4,5 methyl benzotriazole. It can also be identified as 4, 5 methyl benzotriazole, tolutriazole, TTA, and TTZ.*

[10] 85 FR 12506, March 3, 2020.
[11] 85 FR 12506, March 3, 2020.

Benzotriazole is technically known as IUPAC 1,2,3-Benzotriazole. It can also be identified as 1,2,3-Benzotriazole, 1,2-Aminozophenylene, 1H-Benzotriazole, and BTA.

All forms of tolyltriazole and benzotriazole, including but not limited to flakes, granules, pellets, prills, needles, powder, or liquids, are included within the scope of these petitions.

The scope includes tolyltriazole/sodium tolyltriazole and benzotriazole/sodium benzotriazole that are combined or mixed with other products. For such combined products, only the tolyltriazole/sodium tolyltriazole and benzotriazole/sodium benzotriazole component is covered by the scope of these investigations. Tolyltriazole and sodium tolyltriazole that have been combined with other products is included within the scope, regardless of whether the combining occurs in third countries.

Tolyltriazole, sodium tolyltriazole, benzotriazole and sodium benzotriazole that is otherwise subject to these investigations is not excluded when commingled with tolyltriazole, sodium tolyltriazole, benzotriazole, or sodium benzotriazole from sources not subject to these investigations. Only the subject merchandise component of such commingled products is covered by the scope of these investigations.

A combination or mixture is excluded from this investigation if the total tolyltriazole or benzotriazole component of the combination or mixture (regardless of the source or sources) comprises less than 5 percent of the combination or mixture, on a dry weight basis.

Notwithstanding the foregoing language, a tolyltriazole or benzotriazole combination or mixture that is transformed through a chemical reaction into another product, such that, for example, the tolyltriazole or benzotriazole can no longer be separated from the other products through a distillation or other process is excluded from this investigation.

Tolyltriazole has the Chemical Abstracts Service ("CAS") registry number 299385-43-1. Tolyltriazole is classified under Harmonized Tariff Schedule of the United States ("HTSUS") subheading 2933.99.82.20.

Sodium Tolyltriazole has the CAS registry number 64665-57-2 and is classified under HTSUS subheading 2933.99.82.90.

Benzotriazole has the CAS registry number #95-14-7 and is classified under HTSUS subheading 2933.99.82.10.
Sodium Benzotriazole has the CAS registry number 15217-42-2. Sodium Benzotriazole is classified under HTSUS subheading 2933.99.82.90.[12]

Although the HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes, the written description of the scope of these investigations is dispositive.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to this investigation are currently imported under statistical reporting numbers 2933.99.8210, 2933.99.8220, and 2933.99.8290. The 2020 general rate of duty is 6.5 percent *ad valorem* for HTSUS subheading 2933.99.82. There are currently no Section 301 duties on imports from China in effect.[13] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

The product

Description and applications

The imported products subject to these investigations are collectively referred to as corrosion[14] inhibitors—the solids benzotriazole ("BTA") and tolyltriazole ("TTA")[15] and their liquid forms sodium BTA and sodium TTA (figure 1). These products are imported under different HTSUS statistical reporting numbers but have similar applications.[16] They are used to

[12] Staff determined that one of the CAS registry numbers were reported incorrectly by Commerce in its scope.

[13] Harmonized Tariff Schedule, 2020 Revision 5, Chapter 99; Conference transcript, pp. 8, 62 (Orava).

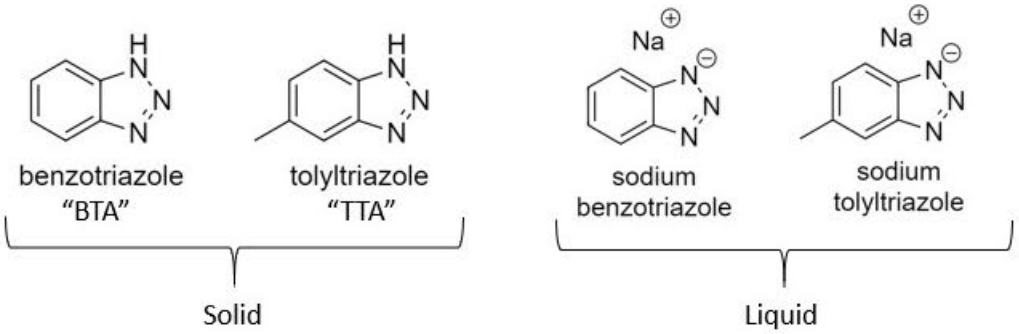
[14] Corrosion is a natural process that converts a refined metal into a more chemically stable form such as oxide, hydroxide, or sulfide. The Electrochemical Society, "What Is Corrosion?" www.electrochem.org/corrosion-science, retrieved March 8, 2020.

[15] BTA (CAS No. 95-14-7) and TTA (CAS No. 29385-43-1) are members of the triazole family of chemicals. Petition, p. 4. There are on the order of dozens of compounds that are in the class of these corrosion inhibitors; however, due to their lower price, TTA and BTA are pragmatic choices. Conference transcript, p. 99 (Zibrida), pp. 100-101 (Reynolds); Petitioner's postconference brief, p. 20.

[16] Petition, p. 5.

provide corrosion protection of metals and elements of copper, copper alloys, zinc, cobalt, silver, aluminum and steel.[17]

Figure 1-1: Chemical structures and phases of subject products.



Source: Petition, Exhibit I-3.

Structurally, the difference between BTA ($C_6H_4N_3$) and TTA ($C_7H_7N_3$) is that the latter has a methyl group on its benzene ring.[18] The chemical formulas of both liquids BTA and TTA are the sodium salts: $Na(C_6H_4N_3)$ and $Na(CH_3C_6H_4N_3)$, and in the liquid form, the anions of BTA and TTA are active (as denoted by the negative symbol "-" in figure 1-1).

Both BTA and TTA can be produced and sold as powder, flakes, granules, or crystals.[19] The color of solid BTA ranges from white to light tan in color, and solid TTA ranges from white to light brown.[20] Sodium BTA and sodium TTA (e.g., the liquid forms) are both solubilized for use in a 40-50 percent concentration.[21] Sodium BTA can range from colorless to a pale yellow solution, and sodium TTA's color can range from pale yellow to amber.[22]

According to the petitioner, BTA and TTA make up the majority of subject imports because the solid form is easier to transport than the liquid forms due to freight costs.[23] However, the majority of end users actually require sodium TTA or sodium BTA as the corrosion inhibitor input for their applications as they are aqueous formulations.[24] The petitioner surmises that many purchasers purchase and import solid BTA and solid TTA and make their

[17] Conference transcript, p. 15 (Milawski).
[18] Petition, p. 4; Conference transcript, p. 15 (Milawski).
[19] Conference transcript, p. 15 (Milawski).
[20] Petition, p. 4.
[21] Conference transcript, p. 15 (Milawski).
[22] Petition, p. 4.
[23] Petitioner's postconference brief, pp. 3, 6.
[24] Petitioner's postconference brief, p. 16.

own sodium BTA and sodium TTA solutions as it is cost effective compared to purchasing the liquid forms.[25]

Sodium BTA, and sodium TTA are used in a variety of corrosion inhibitor applications and are used in many different industries as shown in Table I-1.

[25] Adding sodium hydroxide (NaOH), referred to as "caustic soda" or "caustic," to a solution of TTA or BTA in water- yields sodium BTA and sodium TTA. Petitioner's postconference brief, p. 6.

Table I-1: Corrosion Inhibitors: Illustrative applications in industries which utilize BTA, TTA, sodium BTA, and sodium TTA[1]

Application	BTA (solid form)	TTA (solid form)	Sodium BTA (liquid form)	Sodium TTA (liquid form)
Industrial water treatment	X	X	X	X
Automotive fluids	X	X	X	X
Metalworking fluids	X	X	X	X
De-icer (aircraft and runway)	X	X	X	X
Lubricants[2]	X	X	X	X
Cleaners	X	X	X	X
Direct treatment	X	X	X	X
Circuit boards	X	X	X	X
Inks and coatings	X	X	X	X
Blends[3]	X	X	X	X

1. There is a distinction between the industries which utilize the products and whether the end user ultimately uses the solid or liquid in the specific application. The final state of matter used in industries is mostly all or always in the liquid form.
2. It is less common to use the liquid sodium salt forms of TTA and BTA in lubricants. Nonetheless, some aqueous-based lubricants can use the liquid forms of TTA and BTA. Lubricants primarily consist of a solvent which are categorized as a base oil. These formulas are hydrocarbon. TTA/BTA in their solid acid form would be preferred in lubricants due to the absence of water. Lubricants are used at high temps and having water in a formula which evaporates at 100 degrees Celsius is typically unwanted. There are, however, aqueous based lubricants that can utilize the solid and liquid forms of TTA or BTA. For example, some lubricant formulas use a liquid modified benzotriazole, which is a liquid product compatible with hydrocarbon formulas (Written communication, USITC and petitioner, March 16, 2020).
3. Blends are for applications such as engine coolants, water treatment products and metal working products. Conference transcript, p. 15 (Milawski). There are firms that mix BTA and TTA together. Conference transcript, p 120 (Milawski).

Source: Petition, pp. 5, 12; Conference transcript p. 92; Petitioner's postconference brief, p. 5; Exhibit I, pp. 6, 16.

The two most important applications for corrosion inhibitors are in the water treatment industry and the engine cooling industry, which together account for at least half of the total use.[26]

BTA and TTA (solid forms) are largely viewed as inputs in the production of sodium BTA and sodium TTA, which are the liquid forms ultimately used for the final applications. BTA and

[26] Conference transcript, p. 81-82 (Milawski).

TTA are used as corrosion inhibitors in lubricants[27] and in the production of corrosion inhibitor blends.[28] In the solid form, granular and flake forms are sometimes used in blending applications because they are free-flowing and low-dusting. Other users prefer the powder or crystal form because they believe the product dissolves more quickly.[29] The properties of BTA are such that it can be used in the end application as a vapor phase corrosion inhibitor, while TTA does not work well in the vapor phase.[30] There are firms that mix BTA and TTA together.[31]

According to the respondent, even where BTA and TTA can be used interchangeably in application, they are not interchangeable due to regulatory requirements.[32] They state the two chemicals have different health and environmental safety concerns internationally. The industry must use different safety data sheets, labels and hazards for the two chemicals in order to meet the regulatory requirements.[33]

Manufacturing processes

In general, the capitally intensive production process of BTA and sodium BTA has four phases: 1) "Crude Process" to produce a crude sodium salt solution that has impurities; 2) "Purification" of the crude product to reduce or eliminate impurities; 3) "Production of the desired commercial form," which is either the solid or liquid phase; and 4) "Packaging and reconstitution," as outlined in figure I- for China and the United States.[34]

[27] Petitioner's postconference brief, Exhibit I, p. 16.

[28] Petitioner's postconference brief, Exhibit I, p. 6.

[29] Petitioner's postconference brief, Exhibit I, p. 6.

[30] Conference transcript, p. 92 (Milawski).

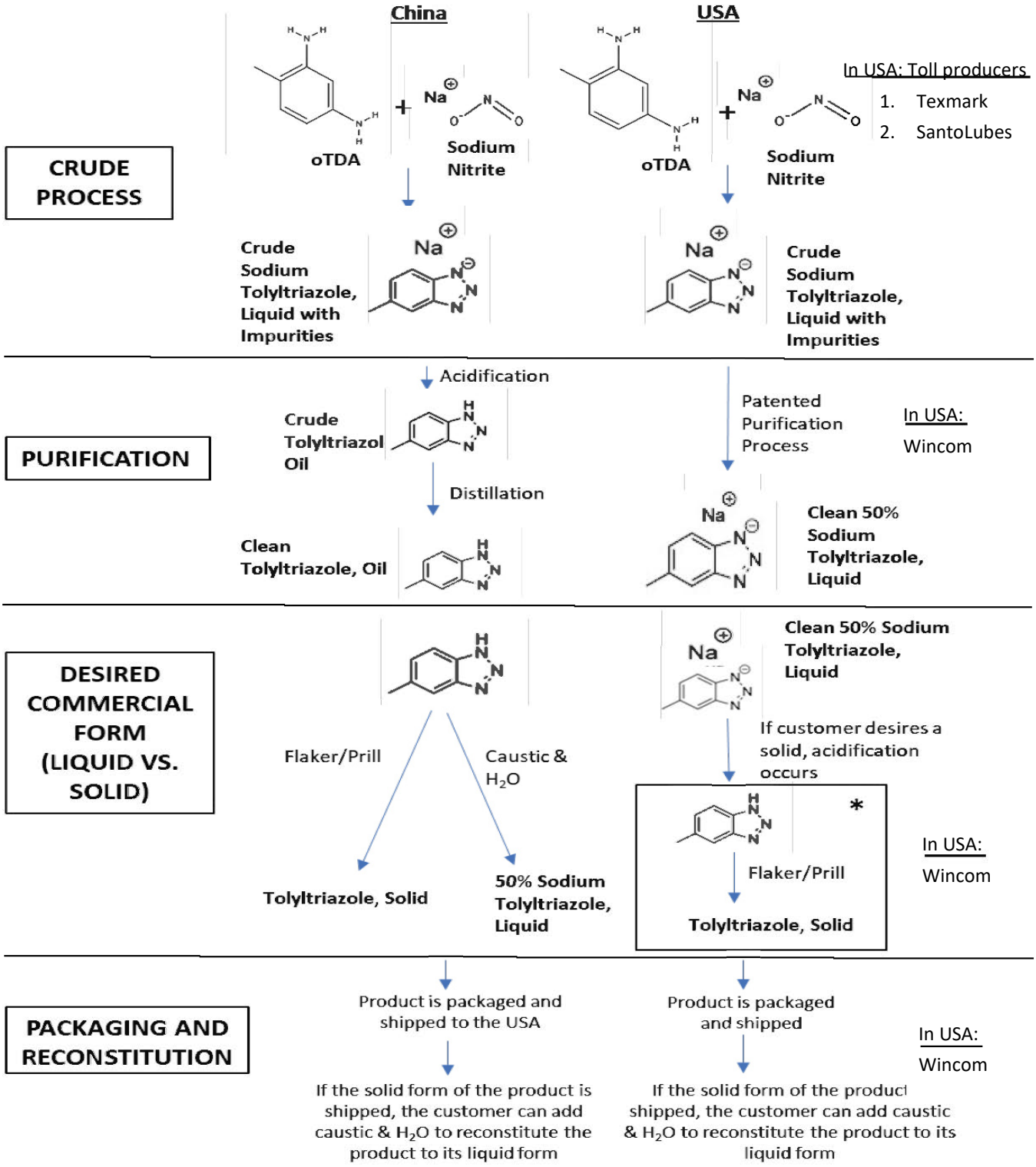
[31] Conference transcript, p 120 (Milawski).

[32] Dober Chemical Corporation's postconference statement, p. 4.

[33] Dober Chemical Corporation's postconference statement, p. 5. The regulations cited by the respondent that limit the interchangeability of BTA and TTA are European regulations and not U.S. regulations. Conference transcript, p. 141 (Helton).

[34] SUEZ states it is a U.S. importer of crude sodium TTA and a domestic producer of TTA mix and blend products in which TTA comprises 5 percent or more of the combination or mixture on a dry weight basis. SUEZ WTS USA postconference brief, p. 1. SUEZ states it purchases crude TTA from China and then domestically further purifies the product. SUEZ states their purification process is different from Wincom's process but no less substantial. SUEZ WTS USA postconference brief, p. 19. As there are no further details as to the manufacturing activities in these preliminary investigations, SUEZ's process is not depicted in the text or figures of this manufacturing section. ***

Figure I-2: Corrosion Inhibitors: Tolyltriazole and Sodium Tolyltriazole Manufacturing Process in China and the United States



*TTA (solid form) is not produced by Wincom as they produce the liquid form, sodium TTA. The figure illustrates what the production of TTA (solid) would be if they were to transform the liquid, sodium TTA, into a solid form of TTA. Source: Petition, pp. 6-7, Exhibit I-3; Conference transcript, pp. 16-17, 112 (Milawski).

The first part of the production process is combining raw materials ortho toluene diamine ("oTDA") and sodium nitrite in a pressure reactor to produce crude sodium TTA. The petitioner does not perform this part of the manufacturing process as they are not zoned to do so, and it requires specialized knowledge, equipment, and compliance with complex safety standards.[35] In the United States, production of crude is completed by domestic toll manufacturers. The crude product has impurities and is not sold commercially in the merchant market.[36] The petitioner starts with crude for downstream processing.

The second part of the production process is purification, which is carried out by the petitioner, who uses a patented process.[37] The purification process reduces or eliminates impurities.[38] Crude product is purified to yield sodium TTA, which is one of the two desired commercial forms.[39] This patented purification process reduces the amount of chemical waste during the process and lessens its environmental impact.[40]

The third part in the production process involves producing the product in the customers' desired form. The petitioner's patented purification process produces sodium TTA, one of the two desired forms.[41] Currently, the petitioner does not sell TTA, which is the solid form.[42] However, they have the ability to produce TTA by acidifying and flaking and/or prilling the sodium TTA (liquid) to TTA (solid).[43]

The last step in the production process involves packaging. The petitioner provides their domestic product, sodium TTA, in tank trucks, totes, and drums.[44]

As denoted in figure I-1, the Chinese manufacturing process begins the same way as in the United States. The same raw materials, oTDA and sodium nitrite, are used to produce crude

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[35] The petitioner is located in Cincinnati, Ohio. The use of a high pressure and temperature reactor requires specialized skills, capital, and regulatory compliance (Environmental Protection Agency and Occupational Safety and Health Administration). Conference transcript, pp. 105-107 (Milawski); p. 108 (Spore).

[36] SUEZ postconference brief, p. 3.

[37] The patent is currently in effect and has about 10 years until expiration. Conference transcript, p. 66 (Milawski). The process is described in U.S. Patent No. ***. Petitioner's postconference brief, Exhibit 1, p. 17.

[38] Impurities in this process are ***. Petitioner's postconference brief, Exhibit I, p. 19.

[39] Petition, Exhibit I, p. 4.

[40] This also reduces the costs associated with the disposal of hazardous waste. Conference transcript, p. 16, 94 (Milawski).

[41] Petition, Exhibit I, p. 4.

[42] Conference transcript, p. 112 (Milawski).

[43] Conference transcript, p. 112 (Milawski); Petition, Exhibit I, p. 4.

[44] Conference transcript, p. 112 (Milawski).

sodium TTA.[45] The Chinese manufacturers may perform this reaction on their own or may use toll producers.

The Chinese purification process involves the acidification and distillation of the crude TTA to a clean TTA oil. It is different from the patented process in the United States. The Chinese purify by using sulfuric acid in the acidification step of production, which results in a sodium sulfate waste solution. The purification process produces a voluminous amount of waste of approximately one pound of waste for every pound of product that must then be disposed.[46] The U.S. process is more efficient in that it does not generate the sodium sulfate waste. The petitioner states that their patented process has fewer steps and is less costly than the Chinese process.[47]

The Chinese produce both desired commercial forms of TTA and sodium TTA. Sodium TTA (solid form) is produced by adding sodium hydroxide (caustic) and water to the clean the TTA oil from the purification step. The respondent also produces TTA by flaking and/or prilling the clean TTA oil from the purification step.[48] The Chinese usually ship their product to the United States as a solid in paper and woven packaging materials.[49] If the manufacturer ships TTA (solid form), the customer can add sodium hydroxide (caustic) and H_2O to reconstitute the product to its liquid form.[50]

The petitioner currently does not produce BTA for the merchant market.[51] They report they have the ability to produce BTA using the same or similar manufacturing equipment and employees that are now used to produce TTA.[52] The patented process techniques for production of TTA can be applied to BTA.

The Chinese currently produce BTA and sodium BTA. This manufacturing process is similar to the manufacturing process for TTA and sodium TTA. In production of BTA and sodium BTA, orthophenylenediamine ("OPD") is used as an input in place of oTDA for raw materials during the production of crude.[53] The OPD and sodium nitrite produce the crude sodium BTA in liquid form. The crude is then acidified and distilled to a clean BTA oil. The oil is then used to

[45] Petition, Exhibit 1, p. 4.
[46] Conference transcript, pp. 104-105 (Milawski).
[47] Conference transcript, pp. 66, 94 (Milawski).
[48] Petition, Exhibit I, p. 4.
[49] Conference transcript, p. 112 (Milawski).
[50] Petition,Exhibit 1, p. 4.
[51] Conference transcript, p. 47 (Milawski). The petitioner ***. Petition, p. 9.
[52] Petition, p. 7.
[53] Conference transcript, p. 16 (Milawski).

produce BTA or sodium BTA. Sodium BTA is produced by adding sodium hydroxide (caustic) and water. BTA is produced by flaking and/or prilling the clean BTA oil.[54] The desired commercial form is then packaged and shipped to the United States. If the solid form of the product is shipped, the customer can add caustic and water to reconstitute the product to its liquid form.[55] Adding caustic and water to yield a solid product does not require complex technical expertise and is commonly known to corrosion inhibitor companies.[56] The petitioner states that the product solid to liquid transformation (reconstitution) costs a small percentage of overall sales of *** percent.[57]

Domestic 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) interchangeability; (3) channels of distribution; (4) common manufacturing facilities, production processes, and production employees; (5) customer and producer perceptions; and (6) price.

The petitioner proposes a single like product, co-extensive with the scope that includes both tolytriazole and benzotriazole.[58] Respondents do not appear to contest the petitioner's definition of the domestic like product, however, they argue that TTA and BTA are not interchangeable, furthermore, Dober contends that "the scope of the petition" improperly includes BTA.[59] Appendix D presents a summary of U.S. producers' and U.S. importers' responses on the comparability of tolyltriazole versus benzotriazole and full narrative responses to the questions on the comparability of these products.

[54] Petition, Exhibit I, p. 4.
[55] Petition, Exhibit I, p. 4.
[56] Dober Chemical Corporation's postconference statement, p. 8.
[57] Petitioner's postconference brief, p. 10. It is also reported ***.
[58] Petition, p. 9.
[59] Dober's postconference brief, pp. 4-5; Nalco's postconference brief, pp. 1-2; Suez postconference brief, p. 7.

Part II: Conditions of competition in the U.S. market

U.S. market characteristics

Corrosion inhibitors are used in industrial water treatment, automotive fluids, metals and metal alloys, metalworking fluids, aircraft and runway de-icers, lubricants, cleaners, direct treatment, circuit boards, inks and coatings.[1] The largest end uses for corrosion inhibitors are industrial water treatment and automotive fluids.[2] TTA and BTA mainly prevent corrosion of copper and brass and may be combined in some formulas to increase efficiency on metal surfaces.[3] [4] In industrial water treatment, water combined with TTA and/or BTA and possibly other ingredients is used in a circulating system for heating or cooling. In end uses such as automobile engines with multiple metals, TTA and/or BTA may be used with chemicals that inhibit corrosion of other metals resulting in "multi-metal corrosion" inhibitors.[5] In metal working, corrosion inhibitors are used to prevent corrosion of metal components during production and assembly.[6]

Apparent U.S. consumption of corrosion inhibitors increased by 3.7 percent between 2017 and 2019.

Channels of distribution

U.S. producers/tollers sold *** to processors, while U.S. processor/tollee sold most of its product to end users. Importers of Chinese product sold mainly to processors and end users, as shown in table II-1.[7]

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[1] Petition, p. 1.

[2] Conference transcript p. 81. (Milawski).

[3] Conference transcript pp. 87-88, 90-91 (Zibrida, Milawski).

[4] Petitioners' postconference brief, response to questions p. 21.

[5] Conference transcript p. 99 (Zibrida).

[6] Conference transcript pp. 99-100 (Zibrida).

[7] A number of importers (including ***) reported selling to processors. ***, it reported these firms as processors.

Table II-1
Corrosion inhibitors: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2017-19

* * * * * * *

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

Geographic distribution

U.S. producers and importers reported selling corrosion inhibitors to *** (table II-2). For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table II-2
Corrosion inhibitors: Geographic market areas in the United States served by U.S. producers and importers

Region	U.S. producers	Importers
Northeast	***	12
Midwest	***	12
Southeast	***	10
Central Southwest	***	8
Mountain	***	5
Pacific Coast	***	10
Other	***	---
All regions (except Other)	***	4
Reporting firms	3	13

Note: 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

Table II-3 provides a summary of the supply factors regarding corrosion inhibitors from U.S. producers and from China. U.S. capacity and other factors are reported separately for producer/tollers and processors/tollees. U.S. producers currently produce only TTA. Chinese producers are reported to produce both TTA and BTA. U.S. producers report that they have been planning to produce BTA but are unable to because of Chinese imports.[8] U.S. producers reported that BTA is produced using a similar production process to that of TTA.[9] Chinese capacity is much larger than U.S. capacity.

[8] Conference transcript, pp. 19-20 (Milawski).
[9] Conference transcript, p. 32 (Reynolds).

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

	Capacity (1,000 pounds)		Capacity utilization (percent)		Ratio of inventories to total shipments (percent)		Shipments by market, 2019 (percent)		Able to shift to alternate products
Country	2017	2019	2017	2019	2017	2019	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States: Producers/ Tollers	***	***	***	***	***	***	***	***	
United States: Processors/ Tollees	***	***	***	***	***	***	***	***	0 of 3
China	***	***	***	***	***	***	***	***	0 of 1

Note: Responding U.S. producers accounted for all of U.S. production of TTA in 2019. The reported U.S. capacity does not reflect U.S. capacity for production of blends. Responding foreign producer/exporter firms accounted for less than a quarter of U.S. imports of corrosion inhibitors from China during 2019. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from China, please refer to Part I, "Summary Data and Data Sources."

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

Domestic production

Based on available information, U.S. producers of corrosion inhibitors have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced corrosion inhibitors to the U.S. market. The factor contributing to this degree of responsiveness of supply is the availability of unused capacity. Factors mitigating responsiveness of supply include limited ability to shift shipments from inventories, limited ability to shift shipments from alternate markets, and limited ability to shift production to or from alternate products.

Both production and production capacity increased between 2017 and 2019 leading to an overall increase in capacity utilization for the producers/tollers and a reduction in capacity utilization by the processor/tollee. Producers reported that they cannot produce other products on the same equipment as corrosion inhibitors. Factors that limit U.S. producers' capacity are ***.

Subject imports from China

Based on available information, producers of corrosion inhibitors from China have the ability to respond to changes in demand with moderate changes in the quantity of shipments of corrosion inhibitors to the U.S. market. The main contributing factors to this degree of

responsiveness of supply are the availability of unused capacity or inventories, and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include limited inventories, no reported ability to shift production to or from alternate products.

Capacity utilization decreased as production fell and capacity was unchanged. Production was constrained by maintenance and environmental and safety concerns.

Imports from nonsubject sources

Nonsubject imports accounted for 10.0 percent of U.S. imports of TTA and BTA in dry form, in 2019.[10] The largest sources of nonsubject imports during 2017-19 were Japan, Germany, and Kuwait. Combined, these countries accounted for 92.4 percent of nonsubject imports in 2019.

Supply constraints

None of the U.S. producers reported supply constraints. One of the 15 responding importers reported supply constraints. It reported that shortages occur and when this occurs it does not sell to "opportunistic purchasers." One importer reported that it was currently facing shortages because of the Chinese New Year holiday and the corona virus.

U.S. demand

Based on available information, the overall demand for corrosion inhibitors 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 corrosion inhibitors in most of its end-use products and the high cost of not using proper corrosion inhibitors in the processes in which they are used. If proper corrosion inhibitors are not used in systems, the system may stop working and the equipment will deteriorate more rapidly. These costs would be much greater than savings from using less effective corrosion inhibitors.

End uses and cost share

U.S. demand for corrosion inhibitors depends on the demand for U.S.-produced downstream products/or services. Reported end uses include its use in ingredients in industrial water treatment, automotive fluids, metalworking fluids, aircraft and runway de-icers, lubricants, cleaners, direct treatment, circuit boards, inks and coatings.

[10] Based on official U.S. import statistics for HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220. HTS 2933.99.8290 was not included because it is a basket category that includes additional products

(*continued*...)

Corrosion inhibitors typically account for a small share of the cost of the end-use products in which it is used.[11] Reported cost shares for some end uses were as follows:

- Copper corrosion inhibitor - 20 percent;
- industrial cooling water treatment products using BTA - 14.3 percent;
- industrial cooling water treatment products using TTA - 9.3 percent;
- chemical water treatment - 5 to 50 percent;
- metal working product - 80 percent
- boiler treatment product - 80 percent
- lubricants used in metal working - 5 percent; and
- semiconductors and electronics - 5 percent.

Business cycles

*** 8 of 16 responding importers indicated that the market was subject to business cycles or conditions of competition. Specifically, demand is seasonal because of higher demand in the industrial water treatment in the spring/summer for summer cooling and more use in the fall and winter for corrosion inhibitors used in antifreeze. One firm also mentioned use of corrosion inhibitors was affected by the number of new autos and aircraft, and demand for these was less robust in 2019 than it had been in 2017.

Demand trends

Most firms reported U.S. demand for corrosion inhibitors either was unchanged or had fluctuated since January 1, 2017 (table II-4).

Table II-4
Corrosion inhibitors: 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	---	8	1	5
Demand outside the United States				
U.S. producers	***	***	***	***
Importers	1	4	1	3

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

[11] Corrosion inhibitors TTA and BTA are used to produce corrosion inhibitors sodium TTA and sodium BTA. The petitioners report that conversion of TTA to sodium TTA accounts for *** percent of the cost for end users. Petitioner's post conference brief, p. 10. In contrast, one importer (***) reported that TTA represented only 44 percent of the cost of sodium TTA, and BTA represents only 40 percent of the cost of sodium BTA.

Substitute products

*** 4 of 14 responding importers reported that there were substitutes. Substitutes for corrosion inhibitors are limited; reported substitutes include mercaptoBTA (MBT) (less effective when used in water treatment), chlorinated TTA (only used in water treatment), THT (hydrogenated TTA)/BBT (butyl BTA) (products derived from TTA and BTA and much more expensive), NaMBT (used in water treatment and antifreeze but used in different applications), irgomet 39 (used in metal working applications), irgomet 42 (used in metal working applications), sodium nitrite (used in metal working applications, but less effective and health risks) and diacid blends (for metal working). No firm reported that the price of substitutes affects the price of corrosion inhibitors.

Substitutability issues

The degree of substitution between domestic and imported corrosion inhibitors depends upon such factors as relative prices (e.g., price discounts/rebates), type of product (TTA, BTA, blend, sodium TTA, or sodium BTA), quality (e.g., purity and type of chemical impurities, etc.), conditions of sale (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.). Based on available data, staff believes that there is moderate to high degree of substitutability between domestically produced corrosion inhibitors and corrosion inhibitors imported from subject sources.

Substitution is reduced for a number of reasons. First some U.S. purchasers' systems are designed to use TTA, rather than sodium TTA, but only sodium TTA is domestically produced. Second, BTA is not currently being produced in the United States. The end uses of BTA differ somewhat from the uses of TTA and there are some costs associated with any change from BTA to TTA, and since BTA is more expensive, it is likely that it is currently used in end uses in which it is more effective than the same amount of TTA.[12] Third, when BTA is combined with TTA, Chinese BTA is used because it enhances the effectives of the combined product, in this case they are not substitutes.[13]

Lead times

Corrosion inhibitors are primarily sold from inventories. U.S. producers reported that 84.5 percent of their commercial shipments came from inventories, with lead times averaging 4

[12] Petitioners' postconference brief answers to staff questions p. 18.
[13] Petitioners' postconference brief answers to staff questions p. 21.

(*continued*...)

days. The remaining 15.5 percent of their commercial shipments were produced-to-order, with lead times averaging 4 days. Importers reported that 86.3 percent[14] of their commercial shipments came from U.S. inventories, with lead times averaging 5 days, and 2.5 percent from overseas inventories with lead times averaging 66 days. The remaining 11.2 percent of their commercial shipments were produced-to-order, with lead times averaging 44 days.

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations[15] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for corrosion inhibitors. The major purchasing factors identified by firms include quality, price, and availability (including reliability of supply and supply security).[16] Two purchasers also reported preference for domestic product was the most important factor for them.

Dober reported it cost time and money to qualify suppliers.[17] Long-term relationships with the supplier were also important because of occasional raw material shortages and this relationship allowed Dober to secure supplies during the shortage.[18]

TTA vs BTA

This section analyzes the differences and the barriers to switching between BTA and TTA in order to understand the impact of the U.S. production of only TTA on the interchangeability and differences other than price between U.S. and Chinese corrosion inhibitors. Staff estimates that BTA made up 33.1 percent of the combined BTA and TTA produced in the United States and imported from China in 2019. Petitioners report that BTA is more expensive than TTA.[19] Petitioners state that Wincom has been planning to produce BTA but has been prevented from

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[14] Importers had difficulty answering questions about where product was sold from and lead times because a number of them sold corrosion inhibitors (blends with more than 5 percent TTA or BTA) that were produced-to-order in the United States. There was no category in the questionnaire that reflected this type of U.S. making of blends by importers and some importers initially reported this as produced to order in China with low lead times that reflected the fact that the production to order occurred in the United States. This type of making of blends has been combined with sales from U.S. inventories of imported corrosion inhibitors.

[15] This information is compiled from responses by purchasers identified by petitioners to the lost sales lost revenue allegations. See Part V for additional information.

[16] Other factors reported included made in the United States, demand for the product, and freight.

[17] Conference transcript p. 124 (Bode).

[18] Conference transcript p. 125 (Bode).

[19] Petition p. 13.

(*continued*...)

doing so because of the low price of imports from China.[20] Until U.S. producers are able to produce BTA commercially, any difference between BTA and TTA will lessen the interchangeability of U.S. product and BTA produced in China. In addition, to the extent that TTA is less expensive than BTA, purchasers will tend to use and develop applications for TTA in applications for which the effectiveness of BTA and TTA are the same.

Petitioners state that TTA and BTA "are considered interchangeable in many applications."[21] They report that in some end uses TTA and BTA are not interchangeable. For example, only BTA works well as a vapor phase corrosion inhibitor.[22] They also report that purchasers sometimes combine TTA and BTA in blends, because using a combination of TTA and BTA makes the blended product more effective.[23]

Respondents claim that TTA and BTA are not interchangeable.[24] BTA is less acidic than TTA and as a result their performance differs in some applications.[25]

Respondents state that even when TTA and BTA can technically be used to replace each other in an end use, there remain barriers to substitution. First, TTA and BTA are both hazardous if used improperly, however, their hazard, and therefore their labeling, differ.[26] Thus even if both products are equally effective, Dober cannot switch between TTA and BTA because this would require its customers to have multiple labels which would increase costs.[27] Dober also sells products in the EU, under the EU regulations, and each formula is entered in its ERP system (Enterprise Resource Planning software system) if Dober changes its formula between TTA and BTA it would need to file it as a new product in the ERP system.[28] BTA is more stable when conditions are lower pH.[29] Customers are also reluctant to switch between TTA and BTA because performance may differ.[30]

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[20] Conference transcript pp. 19-20 (Milawski).
[21] Conference transcript p. 8 (Orava).
[22] Conference transcript p. 92 (Milawski).
[23] Conference transcript pp. 92-93 (Milawski).
[24] Conference transcript p. 124 (Bode).
[25] Conference transcript pp. 135-136 (Bode).
[26] Conference transcript p. 128 (Helton).
[27] Conference transcript pp. 128-129 (Helton).
[28] Conference transcript p. 129 140-141 (Helton).
[29] Conference transcript p. 129 (Helton).
[30] Conference transcript p. 135-136 (Bode),

Comparison of U.S.-produced and imported corrosion inhibitors

In order to determine whether U.S.-produced corrosion inhibitors can generally be used in the same applications as imports from China, U.S. producers and importers were asked whether the corrosion inhibitors can always, frequently, sometimes, or never be used interchangeably. As shown in table II-5 the one responding U.S. producer reported that U.S. and Chinese corrosion inhibitors were *** interchangeable. Most importers reported that U.S. and Chinese corrosion inhibitors were always or frequently interchangeable. Three importers reported differences. One (***) reported that Wincom does not produce BTA in any form and does not produce granular or fine granular TTA, which are "key to our business and the business of our customers… The product is not sourced from any other location in the proper (solid) form as necessary to our business… Any change in formulation or composition requires lengthy trials with customers to ensure the product functions in the same manner as in the current composition. This is something customers are not often willing to wait for or pay for, so the process becomes quite burdensome on ***… Some customers feel the petitioner's product is not to the same performance and hence decide to use the salt manufactured from China solids." Respondents also fear that because the U.S. producer has a different manufacturing process than the Chinese use, the TTA may differ and this creates uncertainty for the purchasers and their customers.[31]

Table II-5
Corrosion inhibitors: Interchangeability between corrosion inhibitors 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			
	A	F	S	N	A	F	S	N
U.S. vs. subject countries:								
U.S. vs. China	***	***	***	***	4	4	3	1
Nonsubject countries comparisons:								
U.S. vs. nonsubject	---	---	---	---	---	2	---	1
China vs. nonsubject	---	---	---	---	---	2	---	1

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

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of corrosion inhibitors from the United States, subject,

[31] Conference transcript p. 136 (Bode).

or nonsubject countries. As seen in table II-6, *** most responding importers reported that differences other than price were sometimes significant. Three importers reported differences in addition to those reported in response to the question on interchangeability. One reported that “China is the only stable source of the majority of this product. Wincom sources these materials from China heavily. See import records. Any Chinese tariff on TTA or BTA will create a serious supply problem for thousands of small and medium sized businesses.” One importer reported “US/China: quality (equal), availability (USA advantage), transportation (USA advantage), product range (China advantage), technical support (equal).” “Some customers feel the petitioner's product is not to the same performance and hence decide to use the salt manufactured from China solids.” One importer reported differences in “quality, contract terms, (and) certainty of supply.”

Table II-6
Corrosion inhibitors: Significance of differences other than price between corrosion inhibitors 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			
	A	F	S	N	A	F	S	N
U.S. vs. subject countries: U.S. vs. China	***	***	***	***	4	---	6	3
Nonsubject countries comparisons: U.S. vs. nonsubject	---	---	---	---	---	---	1	---
China vs. nonsubject	---	---	---	---	---	---	1	---

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

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

Part III: U.S. producers' 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 is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of three firms that accounted for the *** of U.S. production of corrosion inhibitors during 2019.

U.S. tollers/producers and tollees/processors

The Commission issued U.S. producer questionnaires to three firms based on information contained in the petition. These firms provided usable data on their operations.[1] The three responding U.S. producers include firms that either produce corrosion inhibitors for their own accounts or process the product for the accounts of other firms under a toll agreement. The later group consists of U.S. producers SantoLubes and Texmark. The responding tollee includes a firm that provides raw materials to the producer, retain title to the product produced, and ultimately sells the corrosion inhibitors to its customers. This group consists of Wincom. Staff believes that these responses represent (***) of U.S. production of corrosion inhibitors.

Table III-1 lists U.S. producers of corrosion inhibitors, their production locations, positions on the petition, and shares of total production.

[1] The Commission received U.S. producer questionnaire responses from three additional firms that were not identified in the petition. Dober Chemical Corporation ("Dober"), PMC Specialties Group, Inc. ("PMC"), and Suez WTS USA, Inc. ("Suez") each submitted U.S. producer questionnaires that are presented in Appendix E. ***. *** indicated that the data it provided was "***." *** U.S. producer questionnaire response, section II-13.

Table III-1
Corrosion inhibitors: U.S. producers of corrosion inhibitors, their positions on the petition, production locations, and shares of reported production, 2019

Firm	Position on petition	Production location(s)	Share of toller production (percent)	Share of tollee production
SantoLubes	***	Spartanburg, SC	***	***
Texmark	***	Galena Park, Texas	***	***
Wincom	Petitioner	Blue Ash, Ohio	***	***
Total			***	***

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

*** indicated that they are not owned by another firm, or any have related and/or affiliated firms.

Table III-2 presents U.S. producers' reported changes in operations since January 1, 2017.

Table III-2
Corrosion inhibitors: U.S. producers' reported changes in operations, since January 1, 2017

* * * * * * *

Table III-3 presents important industry events since January 1, 2017. Table III-4 presents comparisons with chemical manufacturing with processing activities during 2017-19.

Table III-3
Corrosion inhibitors: Important industry events since January 1, 2017

Year	Month	Event
2016	September	Wincom is granted patent 9447322: A composition with one or more tetrahydrobenzotriazoles and one or more one or more tetrahydrobenzotriazole activating solvents and a method for metal corrosion inhibition.[1]
2017	September	SUEZ Water and Technology Solutions acquires GE Water & Process Technologies for $3.4 billion.[2]
2017	October	Wincom is granted patent 9802905 for purification of azole mixtures (TTA and BTA are azole chemicals).[3]
2018		Texmark began producing tolyltriazole for Wincom in 2018.[4]

[1] Justia Patents, "Patents assigned to Wincom," n.d., retrieved March 11, 2020. https://patents.justia.com/assignee/wincom-inc.
[2] SUEZ, "With the acquisition of GE Water & Process Technologies, SUEZ takes a new step towards growth on the industrial water market," October 2, 2018. https://www.suez.com/en/news/with-the-acquisition-of-ge-water-process-technologies-suez-takes-a-new-step-towards-growth; De Clercq, Geert, "Suez finalizes GE Water deal, confirms synergy targets," Reuters, October 2, 2017. https://www.reuters.com/article/us-suez-outlook/suez-finalizes-ge-water-deal-confirms-synergy-targets-idUSKCN1C70GH.
[3] Justia Patents, "Patents assigned to Wincom," n.d., retrieved March 11, 2020. https://patents.justia.com/assignee/wincom-inc.
[4] Conference transcript, p. 22 (Spore).

Table III-4
Corrosion inhibitors: Comparison of chemical manufacturing with processing activities, 2017-19

Factor	Corrosion inhibitors chemical manufacturing	Corrosion inhibitors processing
Source and extent of the firm's capital investment[1]	***	***
Technical expertise involved in U.S. production activities[2]	***	***
Value added to the product in the United States[3]	***[4]	***
Employment levels[5]	***	***
Quantity and type of parts and materials sourced in the United States[6]	***[7]	***

[1] Net assets (range 2017-2019). Corrosion inhibitor processors had the same value for all periods and thus a single value reported in table.
[2] Technical expertise based on aggregate R&D (range 2017-2019). Corrosion inhibitor processors had the same value for all periods and thus a single value reported in table.
[3] Total conversion costs / total COGS (range 2017-19).
[4] Since the chemical manufacturers are tollers, and thus do not incur (or report) the cost of the vast majority of raw materials, total COGS had to be constructed for the calculation of value-added to the product from chemical manufacturing. For 2018 and 2019, this was done by adding the tollee's raw material costs to the total COGS of the tollers. In 2017, the tollee's raw material costs included the cost of importing corrosion inhibitors for *** net sales in that year. Therefore, staff used the average unit value of the tollee's raw material costs in 2018 and 2019 *** to estimate the raw material costs of the product manufactured by the tollers in that period.
[5] Aggregate production and related workers (PRW) (range 2017-2019).
[6] Aggregate raw material values (range 2017-2019). These values are being reported under the assumption that raw materials other than imported corrosion inhibitors (i.e., oTDA and sodium nitrite) are being sourced domestically.
[7] Per footnote number 4 regarding adjustment of COGS for value added calculation of tollers, the same adjusted raw materials values were used for the quantity and type of parts sourced in the United States value range presented.

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

Table III-5 presents the nature and extent of *** processing operations during 2019.

Table III-5
Corrosion inhibitors: U.S. processors/tollees nature and extent of processing operations, 2019

* * * * * * *

U.S. production, capacity, and capacity utilization

Table III-6 and figure III-1 present U.S. producers/tollers' production, capacity, and capacity utilization. SantoLubes and Texmark were the only firms identified in the petitions as toll producers. Texmark indicated that it began producing tolyltriazole for Wincom in 2018, and

further stated that SantoLubes, Texmark, and Wincom were the only firms in the United States that can produce tolyltriazole from start to finish.[2] From 2017 to 2019, all U.S. producers/toller capacity increased by *** percent, which can be attributed to Texmark's initiation of tolyltriazole production. U.S producers/tollers' production increased by *** percent, while capacity utilization fluctuated, but increased by *** percentage points during 2017-19.

Table III-7 and figure III-2 present U.S. processors/tollees' production, capacity, and capacity utilization. Wincom was the only firm identified in the petitions as a U.S. processor/tollee. From 2017 to 2019, U.S. processor/tollee capacity increased by *** percent, while U.S processor/tollee production fluctuated, but decreased by *** percent. Capacity utilization decreased by *** percentage points during 2017-19.

Table III-6
Corrosion inhibitors: U.S. producers/tollers' production, capacity, and capacity utilization, 2017-19

* * * * * * *

Figure III-1
Corrosion inhibitors: U.S. producers/tollers' production, capacity, and capacity utilization, 2017-19

* * * * * * *

Table III-7
Corrosion inhibitors: U.S. processors/tollees' production, capacity, and capacity utilization, 2017-19

* * * * * * *

Figure III-2
Corrosion inhibitors: U.S. processors/tollees' production, capacity, and capacity utilization, 2017-19

* * * * * * *

[2] Conference transcript, p. 23 (Spore).

Alternative products

U.S. producers/tollers and U.S. processors/tollees combined reported ***. *** indicated it produced ***.[3] *** was the only producer *** that produced out-of-scope product. At the Commision's conference, SantoLubes and Texmark indicated that they both produced out-of-scope products that were not subject to the toll agreements that they each have with Wincom.[4]

U.S. producers' U.S. shipments and exports

Tables III-8 and III-9 present U.S. producers/tollers and U.S. processors/tollees' U.S. shipments, export shipments, and total shipments of corrosion inhibitors during 2017-19. Table III-8 presents U.S. producers/tollers *** U.S. shipments, exports shipments, and total shipments that was exclusively tolled merchandise that was returned to the tollee. Tolled merchandise that was returned to the tollee increased in terms of quantity and value during 2017-19 by *** percent and *** percent, respectively. The unit value of the tolled merchandise that was returned to the tollee decreased by *** percent or *** during 2017-19.

Table III-9 presents U.S. processors/tollees *** U.S. shipments, exports shipments, and total shipments during 2017-19. Commercial U.S. shipments accounted for *** percent of total shipments in terms of quantity and value during each year. *** commercial shipments, based on quantity fluctuated, but decreased by *** percent during 2017-19, and decreased based on value by *** percent. Unit values fluctuated but decreased by *** percent during 2017-19.

Table III-10 presents U.S. processors/tollees U.S. shipments by type during 2017-19. U.S. processors/tollees *** U.S. shipments were ***.[5] At the Commission's conference, Wincom indicated that it currently did not produce benzotriazole.[6]

Table III-8
Corrosion inhibitors: U.S. producers/tollers' U.S. shipments, exports shipments, and total shipments, 2017-19

* * * * * * *

[3] *** U.S. producer questionnaire response, section II-3a.
[4] Conference transcript, pp. 58-61 (Spore and Starnes).
[5] *** indicated that it only produces sodium tolyltriazole. Petitioners' postconference brief, pp. 6-7.
[6] Conference transcript, p. 51 (Reynolds).

Table III-9
Corrosion inhibitors: U.S. processors/tollees' U.S. shipments, exports shipments, and total shipments, 2017-19

* * * * * * *

Table III-10
Corrosion inhibitors: U.S. processors/tollees' U.S. shipments, by type, 2017-19

* * * * * * *

U.S. producers' inventories

Table III-11 presents U.S. producers' and processors' end-of-period inventories and the ratio of these inventories to U.S. shipments, and total shipments**.** Since 2017, U.S. producers/tollers and processors/tollees combined have increased their inventories and their ratio of inventories to U.S. shipments.

Table III-11
Corrosion inhibitors: U.S. producers' and processors' inventories, 2017-19

* * * * * * *

U.S. producers' imports and purchases

U.S. producers' imports and purchases of corrosion inhibitors are presented in table III-12. *** did not purchase or import corrosion inhibitors during 2017-19. During 2017-19, ***.[7]

Table III-12
Corrosion inhibitors: U.S. producers/tollers' and U.S. processors/tollees' U.S. production, imports and purchases, 2017-19

* * * * * * *

U.S. employment, wages, and productivity

Tables III-13, III-14, and III-15 present U.S. producers/tollers, U.S. processors/tollees, and U.S. producers/tollers and processors/tollees' employment-related data, respectively, during 2017-19. In table III-13 and III-15, U.S. producers/tollers' production related data increased in most categories ***.[8]

[7] *** U.S. producer questionnaire response, section II-11.
[8] *** U.S. producer questionnaire response, section II-7c.

Table III-13
Corrosion inhibitors: U.S. producers/tollers' employment related data, 2017-19

* * * * * * *

Table III-14
Corrosion inhibitors: U.S. processors/tollees' employment related data, 2017-19

* * * * * * *

Table III-15
Corrosion inhibitors: U.S. producers/tollers and U.S. processors/tollees' employment related data, 2017-19

* * * * * * *

Part IV: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 40 firms believed to be importers of subject corrosion inhibitors, as well as to all U.S. producers of corrosion inhibitors.[1] Usable questionnaire responses were received from 17 companies, representing *** percent of U.S. imports from China in 2019 under HTS statistical reporting numbers 2933.99.8210 (benzotriazole), 2933.99.8220 (tolyltriazole).[2] Based on the analysis of the questionnaire data and official import statistics, the *** of corrosion inhibitors arrived as tolyltriazole, while ***.[3] Table IV-1 lists all responding U.S. importers of corrosion inhibitors from China and other sources, their locations, and their shares of U.S. imports, in 2019.

[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 statistical reporting numbers 2933.99.8210, 2933.99.8220, and 2933.99.8290 in 2019. The Commission received eight responses from companies that indicated that they did not import corrosion inhibitors at any time during 2017-19.

[2] The coverage estimate was calculated by the quantity of U.S. imports of corrosion inhibitors from China in 2019 reported in the combined 17 U.S. importer questionnaires *** divided by the quantity of total U.S. imports of corrosion inhibitors from China based on official import statistics under HTS statistical reporting numbers 2933.99.8210 (benzotriazole), 2933.99.8220 (tolyltriazole) which totaled 10.5 million pounds. Additionally, 7.8 million pounds of imports from China arrived under HTS statistical reporting number 2933.99.8290, the "basket" category that includes both sodium tolyltriazole and sodium benzotriazole during 2019.

[3] Based on their "NO" responses to the U.S. importer questionnaire and proprietary *** files reported under HTS statistical reporting number 2933.99.8290, ***.

Table IV-1
Corrosion inhibitors: U.S. importers by source, 2019

Firm	Headquarters	Share of imports by source (percent)		
		China	Nonsubject sources	All import sources
Aceto	Port Washington, NY	***	***	***
Charkit	South Norwalk, CT	***	***	***
ChemTreat	Glen Allen, VA	***	***	***
Connect Chemicals	Alpharetta, GA	***	***	***
Ivanhoe	Tullytown, PA	***	***	***
Nalco	Naperville, IL	***	***	***
North Metal	York, PA	***	***	***
P.A.T. Products	Hermon, ME	***	***	***
Penn	Bensalem, PA	***	***	***
PMC	Cincinnati, OH	***	***	***
Quaker	Conshohocken, PA	***	***	***
SDA	Long Beach, CA	***	***	***
Sea-Land	Westlake, OH	***	***	***
Suez WTS	Trevose, PA	***	***	***
Superior	Indianapolis, IN	***	***	***
Wego	Great Neck, NY	***	***	***
Wincom	Blue Ash, OH	***	***	***
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 corrosion inhibitors from China and all other sources. U.S. imports of corrosion inhibitors from China accounted for the vast majority of U.S. imports during 2017-19. During 2017-19, U.S. imports of corrosion inhibitors from China increased based on quantity and value by 5.8 percent but decreased by 22.8 percent, respectively.[4] [5] [6] [7] During 2017-19, the unit value of imports of corrosion inhibitors from China decreased by 27.0 percent, Nonsubject imports were less than 2.0 percent of all imports of corrosion inhibitors during 2017-19, but increased slightly (from 152,000 pounds in 2017 to 199,000 pounds of corrosion inhibitors) from 2017 to 2019. As a share of both quantity and value, subject imports were at least 90.0 percent of total imports of corrosion inhibitors during 2017-19, based on HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220.

[4] *** was the largest subject importer during 2017-19, accounting for ***. *** indicated ***. *** U.S. importer questionnaire, section II-5a.

[5] *** was the second largest subject importer of corrosion inhibitors during 2017-19, accounting for ***. *** U.S. importer questionnaire, section II-5a.

[6] In its U.S. importer questionnaire, ***. *** U.S. importer questionnaire response, section II-8.

[7] ***. *** U.S. importer questionnaire response, section II-8.

Table IV-2
Corrosion inhibitors: U.S. imports by source, 2017-19

Item	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
U.S. imports from.--			
China	9,910	12,780	10,480
Nonsubject sources	152	170	199
All import sources	10,062	12,950	10,679
	Value (1,000 dollars)		
U.S. imports from.--			
China	23,811	30,086	18,382
Nonsubject sources	715	924	2,034
All import sources	24,526	31,010	20,416
	Unit value (dollars per pound dry weight)		
U.S. imports from.--			
China	2.40	2.35	1.75
Nonsubject sources	4.71	5.44	10.22
All import sources	2.44	2.39	1.91
	Share of quantity (percent)		
U.S. imports from.--			
China	98.5	98.7	98.1
Nonsubject sources	1.5	1.3	1.9
All import sources	100.0	100.0	100.0
	Share of value (percent)		
U.S. imports from.--			
China	97.1	97.0	90.0
Nonsubject sources	2.9	3.0	10.0
All import sources	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 U.S. import statistics for HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220, accessed March 13, 2020.

Figure IV-1
Corrosion inhibitors: U.S. import volumes and prices, 2017-19

* * * * * * *

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[8] 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.[9] Imports from China accounted for nearly all total imports (based on the HTS statistical reporting numbers 2933.99.8210 2933.99.8220, but not including 2933.99.8290, the "basket" category HTS statistical reporting number) of corrosion inhibitors by quantity during 2019.

Table IV-3 presents U.S. imports of corrosion inhibitors in the twelve-month period preceding the filing of the petition (February 2019 through January 2020).[10]

[8] 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)).

[9] Section 771 (24) of the Act (19 U.S.C § 1677(24)).

[10] In its U.S. importer questionnaire response, *** reported its imports of corrosion inhibitors separated into benzotriazole and tolyltriazole for February 2019 through January 2020. *** reported approximately *** during the twelve-month period preceding the petition. *** U.S. importer questionnaire response, section II-3b.

Table IV-3
Corrosion inhibitors: U.S. imports in the twelve-month period preceding the filing of the petition, February 2019 through January 2020

Item	February 2019 through January 2020	
	Quantity (1,000 pounds dry weight)	Share quantity (percent)
U.S. imports from.--		
China	10,222	98.1
Nonsubject sources	202	1.9
All import sources	10,425	100.0

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

Source: Official U.S. import statistics for HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220, accessed March 13, 2020.

Fungibility

Table IV-4 and figure IV-2 present data for U.S. importers' U.S. shipments by type during 2017-19. U.S. shipments by type are categorized by chemical type: tolyltriazole/sodium tolyltriazole or benzotriazole/sodium benzotriazole. U.S. shipments of all product types decreased based on quantity, value, and unit value during 2017-19. U.S. shipments of benzotriazole/sodium benzotriazole fluctuated, but *** based on quantity, value, and unit value, but the share of quantity and value both increased by *** percentage points.

Table IV-4
Corrosion Inhibitors: U.S. importers' U.S. shipments of subject imports, by type, 2017-19

Item	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
U.S. shipments from China.--			
Tolyltriazole / sodium tolytriazole	***	***	***
Benzotriazole / sodium benzotriazole	***	***	***
All product types	***	***	***
	Value (1,000 dollars)		
U.S. shipments from China.--			
Tolyltriazole / sodium tolytriazole	***	***	***
Benzotriazole / sodium benzotriazole	***	***	***
All product types	***	***	***
	Unit value (dollars per pound dry weight)		
U.S. shipments from China.--			
Tolyltriazole / sodium tolytriazole	***	***	***
Benzotriazole / sodium benzotriazole	***	***	***
All product types	***	***	***
	Share of quantity (percent)		
U.S. shipments from China.--			
Tolyltriazole / sodium tolytriazole	***	***	***
Benzotriazole / sodium benzotriazole	***	***	***
All product types	***	***	***
	Share of value (percent)		
U.S. shipments from China.--			
Tolyltriazole / sodium tolytriazole	***	***	***
Benzotriazole / sodium benzotriazole	***	***	***
All product types	***	***	***

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

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

Figure IV-2
Corrosion Inhibitors: U.S. producers' and U.S. importers' U.S. shipments share of quantity, by type, 2019

* * * * * * *

Apparent U.S. consumption

Table IV-5 and figure IV-3 present data on apparent U.S. consumption and U.S. market shares for corrosion inhibitors during 2017-19. Apparent U.S. consumption based on quantity increased overall by *** percent during 2017-19. Apparent U.S. consumption based on value decreased by *** percent during 2017-19. During 2017-19, U.S. producers' U.S. shipments decreased by *** percent based on quantity and *** percent based on value, while the U.S. producers' U.S. shipments' unit value decreased *** percent. During 2017-19, U.S. importers' U.S. share of imports from China increased by *** percent based on quantity, *** percent based on value, and *** percent based on the unit value. U.S. producers' U.S. shipments share of quantity decreased by *** percentage points, while U.S. importers' share of quantity from China increased by *** percentage points during 2017-19. U.S. producers' U.S. shipments share of value decreased by *** percentage points, while U.S. importers' share of value from China decreased by *** percentage points during 2017-19.

Table IV-5
Corrosion inhibitors: Apparent consumption and market shares, 2017-19

Item	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
U.S. producers' U.S. shipments	***	***	***
U.S. imports from.--			
China	9,910	12,780	10,480
Nonsubject sources	152	170	199
All import sources	10,062	12,950	10,679
Apparent U.S. consumption	***	***	***
	Value (1,000 dollars)		
U.S. producers' U.S. shipments	***	***	***
U.S. imports from.--			
China	23,811	30,086	18,382
Nonsubject sources	715	924	2,034
All import sources	24,526	31,010	20,416
Apparent U.S. consumption	***	***	***
	Share of quantity (percent)		
U.S. producers' U.S. shipments	***	***	***
U.S. imports from.--			
China	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***
	Share of value (percent)		
U.S. producers' U.S. shipments	***	***	***
U.S. imports from.--			
China	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***

Note.--U.S. producers' U.S. shipments quantity and value are the total U.S. shipments for both U.S. producers/tollers and U.S. processors/tollees minus the tolled merchandise returned to tollees. Since U.S. producers/tollers reported 100% of their shipments to tollees and tollees only reported domestic toll production, the overall U.S. shipments quantity and value are equal to the U.S. processors/tollees U.S. shipments data.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics for HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220, accessed March 13, 2020.

Figure IV-3
Corrosion inhibitors: Apparent U.S. consumption, 2017-19

* * * * * * *

Part V: Pricing data

Factors affecting prices

Raw material costs

TTA is produced using ortho toluene diamine (oTDA) and sodium nitrite. The price of (oTDA) was *** between 2017 and 2019.[1] Sodium TTA is produced from TTA by adding caustic and water.[2] BTA is produce from ortho phenylenedimine and sodium nitrite.[3]

Transportation costs to the U.S. market

Transportation costs for corrosion inhibitors shipped from China to the United States averaged 6.4 percent during 2019. These estimates were derived from official import data and represent the transportation and other charges on imports.[4]

U.S. inland transportation costs

*** responding U.S. producers reported that the purchaser typically arranges transportation. Importers reported both that they (8 of 14)[5] or their customers (7 of 14) arrange transportation to their customers. *** reported that its U.S. inland transportation cost was *** percent.[6] Most importers reported costs of 1 to 9 percent.

---

[1] Petitioners' postconference brief, answers to staff questions p. 17. Respondents reported that the price of TTA has declined because supply of oTDA increased as a result of a new producer entering the market. Conference transcript, p. 127 (Bode). Respondents were requested to provide information on raw material costs in their briefs, but none was provided.

[2] Petition p. 6.

[3] Petition p. 7. No price indexes were reported to be available for these raw materials.

[4] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2019 and then dividing by the customs value based on the HTS subheading 2933.99.8210 and 2933.99.8220.

[5] One importer reported both.

[6] ***.

(*continued*...)

Pricing practices

Pricing methods

*** importers reported using transaction-by-transaction negotiations, contracts, and price lists.[7] As presented in table V-1, importers sell primarily on a transaction-by-transaction negotiations basis.

Table V-1
Corrosion inhibitors: U.S. producers' and importers' reported price setting methods, by number of responding firms

Method	U.S. producers	Importers
Transaction-by-transaction	***	12
Contract	***	2
Set price list	***	3
Other	---	2
Responding firms	***	15

Note: 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.

U.S. producers reported selling ***.[8] Importers reported selling most of their corrosion inhibitors in spot sales or under short-term contract. As shown in table V-2, U.S. producers and importers reported their 2019 U.S. commercial shipments of corrosion inhibitors by type of sale.

Table V-2
Corrosion inhibitors: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2019

* * * * * * *

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

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

[7] Two importers reported that they did not sell corrosion inhibitors but used them internally to produce industrial water treatment blends and corrosion inhibitor mixtures.

[8] ***.

U.S. producers' short-term and one-year contracts ***. Importer's short-term contracts typically fix both price and quantity and do not allow for price renegotiation during the contract, annual contracts may fix quantity, price, or both, and typically do not allow price renegotiations during the contract. One importer reported long term contracts, which fix quantity, but have provisions for price renegotiations during the contract.

Sales terms and discounts

U.S. producers ***. Three of 13 responding importers reported selling mainly on a delivered basis, 3 importers sold on both a f.o.b. and delivered basis, and 7 reported selling mainly on a f.o.b. basis. ***. Three importers reported quantity discounts, one reported volume discounts, and eight reported no discounts.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following corrosion inhibitor products shipped to unrelated U.S. customers during 2017-19.

Product 1.-- Sodium TTA in totes of 2,400 to 2,600 pounds dry weight

Product 2.-- Sodium TTA in drums of 450 to 550 pounds dry weight

Product 3.-- TTA in supersacks 1,000 to 1,200 pounds dry weight

One U.S. producer[9] and nine importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[10] Pricing data reported by these firms accounted for approximately *** percent of U.S.

[9] ***.

[10] 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.

producers' shipments of corrosion inhibitors and 14.4 percent of U.S. shipments of subject imports from China in 2019.

Price data for products 1-3 are presented in tables V-3 to V-5 and figures V-1 to V-3.

Table V-3
Corrosion inhibitors: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter, 2017-19

* * * * * * *

Note: Product 1: Sodium TTA in totes of 2,400 to 2,600 pounds net weight

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

Table V-4
Corrosion inhibitors: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarter, 2017-19

* * * * * * *

Note: Product 2: Sodium TTA in drums of 450 to 550 pounds net weight.

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

Table V-5
Corrosion inhibitors: Weighted-average f.o.b. prices and quantities of imported product 3 and margins of underselling/(overselling), by quarter, 2017-19

* * * * * * *

Note: Product 3: TTA in supersacks 1,000 to 1,200 pounds net weight.
Note: U.S. producers reported selling no product 3.

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

Figure V-1
Corrosion inhibitors: Weighted-average prices and quantities of domestic and imported product 1, by quarter, 2017-19

* * * * * * *

Product 1: Sodium TTA in totes of 2,400 to 2,600 pounds net weight

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

Figure V-2
Corrosion inhibitors: Weighted-average prices and quantities of domestic and imported product 2, by quarter, 2017-19

* * * * * * *

Product 2: Sodium TTA in drums of 450 to 550 pounds net weight.

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

Figure V-3
Corrosion inhibitors: Weighted-average prices and quantities of domestic and imported product 3, by quarter, 2017-19

* * * * * * *

Product 3: TTA in supersacks 1,000 to 1,200 pounds net weight.

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

Price trends

In general, U.S. prices decreased while import prices increased during 2017-19. Table V-6 summarizes the price trends, by country and by product. As shown in the table, domestic price decreases ranged from *** to *** percent during 2017-19 while import price increases ranged from 25.7 to 31.3 percent.

Table V-6
Corrosion inhibitors: Summary of weighted-average f.o.b. prices for products 1-3 from the United States and China

* * * * * * *

Note: Percentage change from the first quarter of 2017 to the last quarter of 2019. The price of Chinese product 1 was the same in the first quarter of 2017 and the first quarter of 2019 (the last quarter in which it was available).

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

Price comparisons

As shown in table V-7, prices for product imported from China were below those for U.S.-produced product in all 18 instances (1.4 million pounds dry weight); margins of underselling ranged from 25.9 to 55.7 percent.

Table V-7
Corrosion inhibitors: Instances of underselling/overselling and the range and average of margins, by country, 2017-19

* * * * * * *

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

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

Lost sales and lost revenue

Of the two responding U.S. producers, *** reported that it had to either reduce prices or roll back announced price increases, and it had lost sales. The U.S. producer identified 40 firms with which it lost sales or revenue (5 consisting lost sales allegations, 16 consisting of lost revenue allegations, and 19 consisting of both types of allegations).

Staff contacted 40 purchasers and received responses from 15 purchasers. Responding purchasers reported purchasing *** pounds dry weight of corrosion inhibitors during 2017-19 (table V-8).

During 2019, responding purchasers purchased 54.9 percent from U.S. producers, 45.1 percent from China, and 0.0 percent from nonsubject countries and "unknown source" countries combined. Purchasers were asked about changes in their purchasing patterns from different sources since 2017. Of the responding purchasers, one reported decreasing purchases from domestic producers, five reported increasing purchases, five reported no change, two reported fluctuating purchases, and two did not purchase any domestic product. Explanations for increasing purchases of domestic product included the preference for U.S. produced product and greater sales overall. The explanation for decreasing purchases of domestic product was the need for TTA and BTA because of improvements in chemistry.

Table V-8
Corrosion inhibitors: Purchasers' responses to purchasing patterns

* * * * * * *

Note: Includes all other sources and unknown sources.
Note: Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.
Note: Decreases of 100 percent from 2017 to 2019, with no change in imports, indicates that the firm made no purchases in 2019 but did purchase in 2017. Increases of 100 percent from 2017 to 2019, with no change in imports, indicates that the firm made no purchases in 2017 but did purchase in 2019.

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

Of the 15 responding purchasers, 8 reported that, since 2017, they had purchased imported corrosion inhibitors from China instead of U.S.-produced product. Six of these purchasers reported that subject import prices were lower than U.S.-produced product, and three of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Three purchasers estimated the quantity of corrosion inhibitors from China purchased instead of domestic product; quantities ranged from *** pounds dry weight to *** pounds dry weight (table V-9). Purchasers identified availability (availability of BTA, reliability of supply), qualification, and quality as non-price reasons for purchasing imported rather than U.S.-produced product.

Table V-9
Corrosion inhibitors: Purchasers' responses to purchasing subject imports instead of domestic product

Purchaser	Purchased imports instead of domestic	Import priced lower	If purchased imports instead of domestic, was price a primary reason		
			Yes/No	If Yes, quantity (1,000 pounds dry weight)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes--8; No—7	Yes--6; No--2	Yes--3; No--5	***	

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

Of the 15 responding purchasers, 3 reported that U.S. producers had reduced prices in order to compete with lower-priced imports from China; 1 reported that U.S. producers did not reduce prices and 11 reported that they did not know (table V-10). The reported estimated price reduction ranged from *** percent. In describing the price reductions, purchasers indicated the price of corrosion inhibitors had decreased because construction demand in China had fallen leading to more availability of inputs for production of corrosion inhibitors.

Table V-10
Corrosion inhibitors: Purchasers' responses to U.S. producer price reductions

Purchaser	U.S. producers reduced priced to compete with subject imports	If U.S. producers reduced prices	
		Estimated U.S. price reduction (percent)	Additional information, if available
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Total / average	Yes--3; No--1	***	

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

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics. *** reported that from 2017-2019, the price of domestic product was lower than the price for the product made from the imported (TTA) from the same supplier. Therefore, it mostly purchased the domestic product. In 2018, the price for the product made from the imported TTA dropped by 21.1 percent; whereas, the price for the domestic product dropped by 12.3 percent. The domestic product was still more competitive. *** reported that the price of TTA is primary determined by the availability of (oTDA). TTA and BTA are not interchangeable due to our customer and regulatory requirements.

Part VI: Financial experience of U.S. producers

Background

The financial results presented in this section are based on the responses of three companies that either produce or process corrosion inhibitors.[1] All companies reported financial data on a calendar-year basis and two companies reported financial data on a GAAP basis.[2] Wincom has tolling arrangements with SantoLubes and Texmark that began in 2017 and 2018, respectively, in which Wincom provides the companies with oTDA and sodium nitrite, and the companies produce a crude form of corrosion inhibitors for Wincom. Wincom refines this product through a proprietary method known as ***.

Operations on corrosion inhibitors

Table VI-1 presents data on the operations in relation to corrosion inhibitors,[3] while table VI-2 presents corresponding changes in average unit values on a dry pound basis. Table VI-3 presents selected company-specific financial data.[4]

---

[1] The firms included are Wincom, the tollee and a processor of corrosion inhibitors, and Wincom's tollers, SantoLubes and Texmark, which act as producers of corrosion inhibitors. U.S. producer questionnaire responses were also received from ***. Selected financial data for these companies are presented in appendix E.

[2] ***.

[3] In order to present combined toller/tollee data in table VI-1 without double-counting net sales and distorting the revenue and cost average unit values ("AUVs"), the data excludes the tolling revenue received by the tollers and the tolling expenses reported by Wincom. The exclusions of these items cancel out. While the reported tolling revenue and tolling expenses do not match in each period, the difference between the two is small enough to have no material impact on profitability.

[4] While tolling revenue and expenses are not included in the combined data in table VI-1, they are included in table VI-3 to show the individual firms' performances during the period examined. Totals and averages for "all firms" are not shown in table VI-3 because they would double-count certain values and are, therefore, not meaningful.

Table VI-1
Corrosion inhibitors: Results of operations of U.S. producers/tollers and processor/tollee, 2017-19

Item	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
Total net sales	***	***	***
	Value (1,000 dollars)		
Total net sales	***	***	***
Cost of goods sold.-- Raw materials	***	***	***
Direct labor	***	***	***
Other factory costs	***	***	***
Total COGS	***	***	***
Gross profit	***	***	***
SG&A expense	***	***	***
Operating income or (loss)	***	***	***
Other expense / (income)	***	***	***
Net income or (loss)	***	***	***
Depreciation/amortization	***	***	***
Cash flow	***	***	***
	Ratio to net sales (percent)		
Cost of goods sold.-- Raw materials	***	***	***
Direct labor	***	***	***
Other factory costs	***	***	***
Average COGS	***	***	***
Gross profit	***	***	***
SG&A expense	***	***	***
Operating income or (loss)	***	***	***
Net income or (loss)	***	***	***

Table continued on next page.

Table VI-1—Continued
Corrosion inhibitors: Results of operations of U.S. producers/tollers and processor/tollee, 2017-19

Item	Calendar year		
	2017	2018	2019
	Ratio to total COGS (percent)		
Cost of goods sold.-- Raw materials	***	***	***
Direct labor	***	***	***
Other factory costs	***	***	***
Average COGS	***	***	***
	Unit value (dollars per pound dry weight)		
Total net sales	***	***	***
Cost of goods sold.-- Raw materials	***	***	***
Direct labor	***	***	***
Other factory costs	***	***	***
Average COGS	***	***	***
Gross profit	***	***	***
SG&A expense	***	***	***
Operating income or (loss)	***	***	***
Net income or (loss)	***	***	***
	Number of firms reporting		
Operating losses	***	***	***
Net losses	***	***	***
Data	***	***	***

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

Table VI-2
Corrosion inhibitors: Changes in AUVs for U.S. producers/tollers and processor/tollee, 2017-19

Item	Between calendar years		
	2017-19	2017-18	2018-19
	Change in AUVs (dollars per pound dry weight)		
Total net sales	***	***	***
Cost of goods sold.-- Raw materials	***	***	***
Direct labor	***	***	***
Other factory costs	***	***	***
Average COGS	***	***	***
Gross profit	***	***	***
SG&A expense	***	***	***
Operating income or (loss)	***	***	***
Net income or (loss)	***	***	***

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

Table VI-3
Corrosion inhibitors: Results of operations of U.S. producers/tollers and U.S. processors/tollees, by company, 2017-19

Item	Calendar year		
	2017	2018	2019
	Total net sales (1,000 pounds dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Total net sales (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Cost of goods sold (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Gross profit or (loss) (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	SG&A expenses (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Operating income or (loss) (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Net income or (loss) (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	COGS to net sales ratio (percent)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Gross profit or (loss) to net sales ratio (percent)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***

Table continued on next page.

Table VI-3—Continued
Corrosion inhibitors: Results of operations of U.S. producers/tollers and U.S. processors/tollees, by company, 2017-19

Item	Calendar year		
	2017	2018	2019
	SG&A expense to net sales ratio (percent)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Operating income or (loss) to net sales ratio (percent)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Net income or (loss) to net sales ratio (percent)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit net sales value (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit raw materials (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit direct labor (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit other factory costs (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***

Table continued on next page.

Table VI-3—Continued
Corrosion inhibitors: Results of operations of U.S. producers/tollers and U.S. processors/tollees, by company, 2017-19

Item	Calendar year		
	2017	2018	2019
	Unit tolling fees paid (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit COGS (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit gross profit or (loss) (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit SG&A expenses (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit operating income or (loss) (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***
	Unit net income or (loss) (dollars per pound dry weight)		
SantoLubes	***	***	***
Texmark	***	***	***
Wincom	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Data presented are the full financial results of U.S. producers/tollers and U.S. processors/tollees inclusive of net sales quantity and value for shipments made by tollers to tollees and tolling fees paid by tollees to tollers. For that reason, totals by category will not be equal to data presented in VI-1.

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

Net sales

Net sales of corrosion inhibitors, by both quantity and value, decreased irregularly from 2017 to 2019. The average unit value ("AUV") of net sales increased from $*** per dry pound in 2017 to $*** per dry pound in 2018 and decreased to $*** per dry pound in 2019.[5] [6]

Cost of goods sold and gross profit or (loss)

Raw materials were the largest component of COGS, accounting for between *** percent (in 2019) and *** percent (in 2017) of total COGS during the period for which data were collected.[7] On a per-dry pound basis, raw materials decreased from $*** in 2017 to $*** in 2019.[8] [9] Table VI-4 shows the cost of the major raw material inputs in corrosion inhibitors, as well as the unit values and shares of the total raw material costs.[10]

[5] ***. Email from Neal Reynolds, counsel to petitioners, February 28, 2020.

[6] ***.

[7] Raw materials were primarily ***.

[8] ***. Due to this change in production method, 2017 raw material costs on a per dry pound basis and 2017 tolling fees paid on a per dry pound basis are not directly comparable to the same data reported for 2018 and 2019.

[9] ***. Email from Neil Reynolds, counsel to the petitioners, February 28, 2020.

[10] ***. *** U.S. producer questionnaire response, section III-9c.

Table VI-4
Corrosion inhibitors: Wincom's raw material costs, by type, 2019

Raw materials	Calendar 2019		
	Value (1,000 dollars)	Unit value (dollars per pound dry weight)	Share of value (percent)
Orthotoluene diamine	***	***	***
Sodium nitrite	***	***	***
Other material inputs	***	***	***
Total, raw materials	***	***	***

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

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

Other factory costs were the next largest component of COGS, which represented between *** percent (in 2017) and *** percent (2019) of overall COGS. On a per-dry pound basis, other factory costs increased from $*** in 2017 to $*** in 2019.[11]

Direct labor, the last component of COGS, accounted for between *** percent (2017) and *** percent (2018) of overall COGS. On a per-dry pound basis, direct labor increased from $*** in 2017 to $*** in 2019.[12]

The average unit value of COGS irregularly increased from 2017 to 2019 while the net sales unit value irregularly declined. On an overall basis, the corrosion inhibitor industry's gross profit increased from $*** in 2017 to $*** in 2018, then decreased to $*** in 2019.

[11] In addition to ***, the increase in per-unit other factory costs is at least partially attributable to ***.

[12] Based on the standard value added formula of conversion costs (direct labor and other factory costs) as a percentage of total COGS, ***.

SG&A expenses and operating income or loss

As shown in table VI-1, the industry's SG&A expense ratio (i.e., total SG&A expenses divided by total revenue) increased, from *** percent in 2017 to *** percent in 2019. Table VI-3 shows that from 2017 to 2019 the pattern of company-specific SG&A expense ratios were somewhat similar in terms of directional trend, with *** reporting a general increase in the SG&A expense ratio throughout the calendar years.[13]

Operating income followed the same directional trend as gross profit. It increased from an operating profit of $*** in 2017 to $*** in 2018 and then declined to *** in 2019.

All other expenses and net income or loss

Classified below the operating income level are interest expense, other expense, and other income. Interest expense accounted for *** and increased from $*** in 2017 to $*** in 2018, and it decreased to $*** in 2019.[14] Other income was reported by ***.

Overall, net income followed a similar trend to gross profit and operating income and increased from $*** in 2017 to $*** in 2018, then decreased to $*** in 2019.[15]

[13] ***.

[14] ***. Email from Neil Reynolds, counsel to the petitioners, February 28, 2020.

[15] A variance analysis is not meaningful and is therefore not presented due to ***.

Capital expenditures and research and development expenses

Table VI-5 presents capital expenditures and research and development ("R&D") expenses. *** firms provided capital expenditure data, and *** firms provided data on R&D expenses. *** accounted for the largest company-specific amounts of capital expenditures during the period for which data were collected.[16] Total reported capital expenditures for the industry increased from $*** in 2017 to $*** in 2018, then decreased to $*** in 2019. *** accounted for the *** of overall R&D expenses; however ***.[17] [18]

Table VI-5
Corrosion inhibitors: U.S. producers/tollers' and processor/tollee's capital expenditures and research and development expenses, 2017-19

Item	Calendar year		
	2017	2018	2019
	Capital expenditures (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
U.S. producers/tollers	***	***	***
Wincom	***	***	***
U.S. processors/tollees	***	***	***
All firms	***	***	***
	Research and development expenses (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
U.S. producers/tollers	***	***	***
Wincom	***	***	***
U.S. processors/tollees	***	***	***
All firms	***	***	***

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

[16] ***. U.S. producers' questionnaire, section III-13.

[17] *** described its R&D expenses as ***. U.S. producers' questionnaire, section III-13. ***. Email from Neal Reynolds, counsel to the petitioners, February 28, 2020.

[18] ****. Email from Neal Reynolds, counsel to the petitioners, February 28, 2020.

Assets and return on assets

Table VI-6 presents total assets and operating return on assets (operating income divided by total assets).[19] Total assets increased from $*** in 2017 to $*** in 2018, and then decreased to $*** in 2019. The return on assets decreased from *** percent in 2017 to *** percent in 2019.

Table VI-6
Corrosion inhibitors: U.S. producers/tollers' and processor/tollee's total assets and return on assets, by company, 2017-19

Firm	Calendar years		
	2017	2018	2019
	Total net assets (1,000 dollars)		
SantoLubes	***	***	***
Texmark	***	***	***
U.S. producers/tollers	***	***	***
Wincom	***	***	***
U.S. processors/tollees	***	***	***
All firms	***	***	***
	Operating return on assets (percent)		
SantoLubes	***	***	***
Texmark	***	***	***
U.S. producers/tollers	***	***	***
Wincom	***	***	***
U.S. processors/tollees	***	***	***
All firms	***	***	***

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

[19] With respect to a company's overall operations, staff notes that total asset value (i.e., the bottom-line number on the asset side of a company's balance sheet) reflects an aggregation of a number of assets which are generally not product specific. Accordingly, high level corporate allocations may be required in order to report a total asset value for corrosion inhibitors.

Capital and investment

The Commission requested U.S. producers and processors of corrosion inhibitors to describe any actual or potential negative effects of imports of corrosion inhibitors from China on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-7 presents which effects the firms reported experiencing in each category and table VI-8 provides their narrative responses.

Table VI-7
Corrosion inhibitors: U.S. producers/tollers' and processor/tollee's actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2017

Item	No	Yes
Negative effects on investment	***	***
Cancellation, postponement, or rejection of expansion projects		***
Denial or rejection of investment proposal		***
Reduction in the size of capital investments		***
Return on specific investments negatively impacted		***
Other		***
Negative effects on growth and development	***	***
Rejection of bank loans		***
Lowering of credit rating		***
Problem related to the issue of stocks or bonds		***
Ability to service debt		***
Other		***
Anticipated negative effects of imports	***	***

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

Table VI-8
Corrosion inhibitors: U.S. producers/tollers' and processor/tollee's narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2017

Item / Firm	Narrative
Cancellation, postponement, or rejection of expansion projects:	
***	***
Reduction in the size of capital investments:	
***	***
Return on specific investments negatively impacted:	
***	***
***	***
Other negative effects on investments:	
***	***
Ability to service debt:	
***	***
***	***
Anticipated effects of imports:	
***	***
***	***
***	***

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

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 factors*[1]*--*
>
> *(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 alleged 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 U.S. producers' 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.

[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."

The industry in China

The Commission issued foreign producers' or exporters' questionnaires to eight firms believed to produce and/or export corrosion inhibitors from China.[3] The Commission received a usable questionnaire response from one firm: Nantong Botao Chemical Co., Ltd. ("Nantong Botao"). This firm's exports to the United States accounted for approximately *** percent of U.S. imports of corrosion inhibitors from China in 2019.[4] According to estimates requested of the responding producer (Nantong Botao), its production of corrosion inhibitors in China reported in its questionnaire response accounts for approximately *** percent of overall production of corrosion inhibitors in China. Table VII- 1 presents information on the corrosion inhibitor operations of Nantong Botao.

Table VII-1
Corrosion inhibitors: Summary data for producers in China, 2019

Firm	Production (1,000 pounds dry weight)	Share of reported production (percent)	Exports to the United States (1,000 pounds dry weight)	Share of reported exports to the United States (percent)	Total shipments (1,000 pounds dry weight)	Share of firm's total shipments exported to the United States (percent)
Nantong Botao	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

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

Changes in operations

Nantong Botao reported no operational or organizational changes since January 1, 2017.

Operations on corrosion inhibitors

Table VII-2 presents information on the corrosion inhibitor operations of Chinese producer Nantong Botao in China. During 2017-19, Nantong Botao's capacity to produce

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

[4] In its questionnaire response, Nantong Botao indicated that its exports of corrosion inhibitors to the United States accounted for ***. Nantong Botao's foreign producer questionnaire response, question II-6b.

corrosion inhibitors ***,[5] while its production of corrosion inhibitors ***, but decreased by *** percent from 2017 to 2019.[6] Capacity utilization also ***, but decreased by *** percentage points during 2017-19.

Export shipments to the United States and total home market shipments both fluctuated during 2017-19, but decreased overall by *** percent and *** percent, respectively.[7] Export shipments to the United States as a share of total shipments decreased from *** percent to *** percent during 2017-19, while total home market shipments as a share of total shipments increased from *** percent to *** percent during the same period.

[5] Nantong Botao reported its projections for capacity ***. Nantong Botao's foreign producer questionnaire response, section II-10.

[6] In 2019, Nantong Botao indicated it produced ***. Nantong Botao foreign producer questionnaire response, question II-8.

[7] Nantong Botao indicated ***. Email message from *** March 6, 2020.

Table VII-2
Corrosion inhibitors: Nantong Botao's data on industry in China, 2017-19

Item	Actual experience		
	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
Capacity	***	***	***
Production	***	***	***
End-of-period inventories	***	***	***
Shipments:			
Home market shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to:			
United States	***	***	***
All other markets	***	***	***
Total exports	***	***	***
Total shipments	***	***	***
	Ratios and shares (percent)		
Capacity utilization	***	***	***
Inventories/production	***	***	***
Inventories/total shipments	***	***	***
Share of shipments:			
Home market shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to:			
United States	***	***	***
All other markets	***	***	***
Total exports	***	***	***
Total shipments	***	***	***

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

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

Firms were asked about their constraints on capacity and the ability to switch production from corrosion inhibitors to other products. Nantong Botao reported that its production is constrained by ***.[8]

Alternative products

Nantong Botao reported that corrosion inhibitors ***.[9]

[8] Nantong Botao foreign producer questionnaire response, section II-3d.

Exports

According to GTA, the leading export markets for heterocyclic compounds with nitrogen hetero-atoms (which include corrosion inhibitors) from China based on quantity are India, the United States, and Brazil (table VII-3). During 2019, the United States was the second largest export market for heterocyclic compounds with nitrogen hetero-atoms (which include corrosion inhibitors) from China, accounting for 12.9 percent of total Chinese exports. India and Brazil accounted for 14.6 percent and 7.6 percent of total Chinese exports, respectively.

Table VII-3
Heterocyclic Compounds with Nitrogen Hetero-Atoms: Exports from China, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds)		
United States	39,029	38,057	31,370
India	39,400	34,416	35,477
Brazil	12,224	17,074	18,537
Germany	14,717	15,299	17,260
South Korea	15,050	14,571	15,011
Taiwan	15,297	11,875	10,405
Netherlands	10,874	11,232	10,122
Japan	10,850	9,462	9,774
Russia	9,508	7,104	7,053
All other destination markets	101,163	90,771	88,791
Total exports	268,111	249,862	243,799
	Value (1,000 dollars)		
United States	235,789	278,624	256,694
India	270,958	310,536	284,958
Brazil	65,055	89,081	98,612
Germany	78,353	92,718	93,986
South Korea	138,063	146,779	145,191
Taiwan	57,364	53,031	46,645
Netherlands	66,143	62,475	49,858
Japan	114,696	111,426	136,809
Russia	52,283	44,005	52,735
All other destination markets	858,560	952,826	978,161
Total exports	1,937,264	2,141,502	2,143,647

Table continued on next page.

(…*continued*)

[9] Nantong Botao foreign producer questionnaire, section II-4.

Table VII-3 - Continued
Heterocyclic Compounds with Nitrogen Hetero-Atoms: Exports from China, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Unit value (dollars per pound)		
United States	6.04	7.32	8.18
India	6.88	9.02	8.03
Brazil	5.32	5.22	5.32
Germany	5.32	6.06	5.45
Korea South	9.17	10.07	9.67
Taiwan	3.75	4.47	4.48
Netherlands	6.08	5.56	4.93
Japan	10.57	11.78	14.00
Russia	5.50	6.19	7.48
All other destination markets	8.49	10.50	11.02
Total exports	7.23	8.57	8.79
	Share of quantity (percent)		
United States	***	***	***
India	***	***	***
Brazil	***	***	***
Germany	***	***	***
Korea South	***	***	***
Taiwan	***	***	***
Netherlands	***	***	***
Japan	***	***	***
Russia	***	***	***
All other destination markets	***	***	***
Total exports	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data. GTA data for HS subheading 2933.99 includes products that are outside the scope of these investigations. Consequently, the Chinese export data presented in VII-3 are overstated.

Source: Official exports statistics under HS subheading 2933.99 as reported by China Customs in the Global Trade Atlas database, accessed February 28, 2020.

U.S. inventories of imported merchandise

Table VII-4 presents data on U.S. importers' reported inventories of corrosion inhibitors. U.S importers' end-of-period inventories of imports from China increased *** percent from 2016 to 2018. This increase in U.S. importers' end-of-period inventories of corrosion inhibitors from China is ***. During 2017-19, the ratio of subject importers' inventories to U.S. shipments of imports increased from *** percent in 2017 to *** percent in 2019.

Table VII-4
Corrosion inhibitors: U.S. importers' end-of-period inventories of imports by source, 2017-19

Item	Calendar year		
	2017	2018	2019
	Inventories (1,000 pounds dry weight); Ratios (percent)		
Imports from China			
Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***
Imports from nonsubject sources:			
Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***
Imports from all import sources:			
Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***

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

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

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of corrosion inhibitors from after January 2020. Three of 17 responding firms indicated that they had arranged such imports. Responding firms did not report any arranged imports from nonsubject sources. These data are presented in table VII-5.

Table VII-5
Corrosion inhibitors: Arranged imports, January 2020 through December 2020

Item	Period				
	Jan-Mar 2020	Apr-Jun 2020	Jul-Sept 2020	Oct-Dec 2020	Total
	Quantity (1,000 pounds dry weight)				
Arranged U.S. imports from.--					
China	***	***	***	***	***
All other sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Antidumping or countervailing duty orders in third-country markets

There are no known antidumping or countervailing duty orders on certain corrosion inhibitors in third-country markets.[10]

Information on nonsubject countries

The respondent reports they are only aware of production of tolytriazole in China with very limited production in India.[11] One estimate was that all the nonsubject countries combined would add up to less than 5 percent of the imports.[12] In addition to India, the nonsubject countries include Germany and South Korea.[13] Between 2017 and 2019, the nonsubject import market share was small and ranged between *** percent and *** percent of the total market.[14]

Chinese capacity is estimated at a minimum of 62 million pounds.[15] The capacities in Germany, India, and Korea are unknown.[16] The domestic industry has an approximate capacity of *** million pounds, and global capacity is estimated at a minimum of *** million pounds.[17]

At the global exporter level, TTA, BTA, sodium BTA, and sodium TTA fall under the category of heterocyclic compounds with nitrogen hetero-atoms. In 2019, the three largest global exporters in this larger category of products were Switzerland ($4.77 billion, 34.7 percent of total share of value), Ireland ($3.84 billion, 28 percent of total share of value), and China ($2.14 billion, 15.6 percent of total share of value), as shown in table VII-6.

[10] Conference transcript, p. 96 (Milawski), p. 96 (Reynolds), p. 148 (Bode); Petitioner's postconference brief, Exhibit 1, p. 26.

[11] Dober Chemical Corporation's postconference statement, p. 14. Dober's products are blended in the EU, but Dober believes the EU sources from China.

[12] Conference transcript, p. 60 (Jones).

[13] Conference transcript, p. 111 (Milawski).

[14] Conference transcript, pp. 38-39 (Lutz); Petitioner's postconference brief, pp. 14, and Exhibit 2.

[15] Conference transcript, p. 45 (Morno); Petitioner's postconference brief, p. 28, Exhibit 1, p. 20.

[16] Petitioner's postconference brief, Exhibit 1, pp. 20-21.

[17] Petitioner's postconference brief, Exhibit 1, pp. 20-21.

Table VII-6: Heterocyclic Compounds with Nitrogen Hetero-Atoms, not elsewhere specified or included: Global exports by exporter, 2017—19

Exporter	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	353,103	265,749	278,738
China	1,937,264	2,141,502	2,143,647
Switzerland	3,427,421	4,260,479	4,773,593
Ireland	1,873,818	2,406,037	3,844,689
India	662,320	773,237	933,700
United Kingdom	602,780	651,996	829,483
Japan	340,938	318,071	350,237
South Korea	136,120	128,699	179,453
Spain	108,895	130,193	137,758
Indonesia	134,522	110,892	126,835
Taiwan	34,886	48,997	37,802
Singapore	206,877	23,225	35,389
All other exporters	3,301,176	3,089,932	83,433
Total	13,120,122	14,349,010	13,754,760
	Share of value (percent)		
United States	2.7	1.9	2.0
China	14.8	14.9	15.6
Switzerland	26.1	29.7	34.7
Ireland	14.3	16.8	28.0
India	5.0	5.4	6.8
United Kingdom	4.6	4.5	6.0
Japan	2.6	2.2	2.5
South Korea	1.0	0.9	1.3
Spain	0.8	0.9	1.0
Indonesia	1.0	0.8	0.9
Taiwan	0.3	0.3	0.3
Singapore	1.6	0.2	0.3
All other exporters	25.2	21.5	0.6
Total	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 2933.99 reported by various national statistical authorities in the Global Trade Atlas database, accessed March 15, 2020. HS subheading 2933.99 includes products that are outside the scope of these investigations and therefore overstate exports data.

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
85 FR 7784, February 11, 2020	*Corrosion Inhibitors From China; Institution of Anti-Dumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-02-11/pdf/2020-02643.pdf
85 FR 12502, March 3, 2020	*Certain Corrosion Inhibitors From the People's Republic of China: Initiation of Countervailing Duty Investigation*	https://www.govinfo.gov/content/pkg/FR-2020-03-03/pdf/2020-04342.pdf
85 FR 12506, March 3, 2020	*Certain Corrosion Inhibitors From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2020-03-03/pdf/2020-04339.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

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

Subject: Corrosion Inhibitors from China

Inv. Nos.: 701-TA-638 and 731-TA-1473 (Preliminary)

Date and Time: February 26, 2020 - 9:30 a.m.

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

OPENING REMARKS:

In Support of Imposition (**Stephen J. Orava**, King & Spalding LLP)

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

King & Spalding LLP
Washington, DC
on behalf of

Wincom, Inc.

James Milawski, President, Wincom, Inc.

Eric Spore, Vice President of Sales, Texmark Chemicals, Inc.

Jeter Starnes, Vice President of Technology
and Business Development, SantoLubes LLC

John Zibrida, President, Zibex, Inc.

Richard Lutz, King & Spalding LLP, Consultant to Wincom, Inc.

Stephen J. Orava)
Neal J. Reynolds) – OF COUNSEL
Mercedes C. Morno)

Interested Party in Opposition:

Dober Chemical Corp.
Woodridge, IL

Denise Bode, Partner, Michael Best Strategies

Sarah Helton, Principal, Michael Best Strategies

CLOSING REMARKS:

In Support of Imposition (**Neal J. Reynolds**, King & Spalding LLP)

-END-

APPENDIX C

SUMMARY DATA

Producers and Processor

Table C-1
Corrosion inhibitors: Summary data concerning the U.S. market including one processor *, 2017-19**
(Quantity= 1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2017	2018	2019	2017-19	2017-18	2018-19
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	9,910	12,780	10,480	▲5.8	▲29.0	▼(18.0)
Value	23,811	30,086	18,382	▼(22.8)	▲26.4	▼(38.9)
Unit value	$2.40	$2.35	$1.75	▼(27.0)	▼(2.0)	▼(25.5)
Ending inventory quantity	***	***	***	▲***	▲***	▲***
Nonsubject sources:						
Quantity	152	170	199	▲31.2	▲11.9	▲17.2
Value	715	924	2,034	▲184.5	▲29.2	▲120.2
Unit value	$4.71	$5.44	$10.22	▲116.9	▲15.4	▲87.9
Ending inventory quantity	***	***	***	***	***	***
All import sources:						
Quantity	10,062	12,950	10,679	▲6.1	▲28.7	▼(17.5)
Value	24,526	31,010	20,416	▼(16.8)	▲26.4	▼(34.2)
Unit value	$2.44	$2.39	$1.91	▼(21.6)	▼(1.8)	▼(20.2)
Ending inventory quantity	***	***	***	▲***	▲***	▲***
U.S. producers' and processors':						
Producers: Average capacity quantity	***	***	***	▲***	▲***	▲***
Producers: Production quantity	***	***	***	▲***	▲***	▼***
Producers: Capacity utilization (fn1)	***	***	***	▲***	▲***	▼***
Processor: Average capacity quantity	***	***	***	▲***	▲***	▲***
Processor: Production quantity	***	***	***	▼***	▲***	▼***
Processor: Capacity utilization (fn1)	***	***	***	▼***	▼***	▼***
U.S. shipments (fn2):						
Quantity	***	***	***	▼***	▲***	▼***
Value	***	***	***	▼***	▲***	▼***
Unit value	***	***	***	▼***	▲***	▼***
Export shipments:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	***
Unit value	***	***	***	▼***	▲***	▼***

Table continued on next page.

Table C-1--Continued
Corrosion inhibitors: Summary data concerning the U.S. market including one processor *, 2017-19**
(Quantity= 1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2017	2018	2019	2017-19	2017-18	2018-19
U.S. producers' and processors':						
Ending inventory quantity	***	***	***	▲***	▲***	▲***
Inventories/U.S. shipments (fn1)	***	***	***	▲***	▲***	▲***
Production workers	***	***	***	▲***	▲***	▼***
Hours worked (1,000s)	***	***	***	▲***	▲***	▲***
Wages paid ($1,000)	***	***	***	▲***	▲***	▲***
Hourly wages (dollars per hour)	***	***	***	▲***	▲***	▲***
Producers: Productivity (lbs per hr)	***	***	***	▼***	▼***	▼***
Producers: Unit labor costs	***	***	***	▲***	▲***	▲***
Processor: Productivity (lbs per hr)	***	***	***	▼***	▲***	▼***
Processor: Unit labor costs	***	***	***	▲***	▼***	▲***
Net sales (fn3):						
Quantity	***	***	***	▼***	▲***	▼***
Value	***	***	***	▼***	▲***	▼***
Unit value	***	***	***	▼***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	▼***	▼***	▲***
Gross profit or (loss) (fn4)	***	***	***	▼***	▲***	▼***
SG&A expenses	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn4)	***	***	***	▼***	▲***	▼***
Net income or (loss) (fn4)	***	***	***	▼***	▲***	▼***
Capital expenditures	***	***	***	▲***	▲***	▼***
R&D expenses	***	***	***	▼***	▼***	***
Net assets	***	***	***	▲***	▲***	▼***
Unit COGS	***	***	***	▲***	▼***	▲***
Unit SG&A expenses	***	***	***	▲***	▲***	▼***
Unit operating income or (loss) (fn4)	***	***	***	▼***	▲***	▼***
Unit net income or (loss) (fn4)	***	***	***	▼***	▲***	▼***
COGS/sales (fn1)	***	***	***	▲***	▼***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	▼***	▲***	▼***
Net income or (loss)/sales (fn1)	***	***	***	▼***	▲***	▼***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--U.S. producers' U.S. shipments quantity and value exclude U.S. producers/tollers' tolled merchandise returned to tollees. In measuring consumption and market share this methodology avoids double counting of merchandise.
fn3.--Net sales quantity and value exclude shipments to tollees by U.S. producers/tollers and COGS exclude tolling fees paid by U.S. processors/tollees in order to avoid double counting of financial results.
fn4.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics for HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220, accessed March 13, 2020.

Producers only

Table C-2

Corrosion inhibitors: Summary data concerning the U.S. market including no processors, 2017-19

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

	Reported data			Period changes		
	Calendar year			Comparison years		
	2017	2018	2019	2017-19	2017-18	2018-19
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	9,910	12,780	10,480	▲5.8	▲29.0	▼(18.0)
Value	23,811	30,086	18,382	▼(22.8)	▲26.4	▼(38.9)
Unit value	2	2	2	▼(27.0)	▼(2.0)	▼(25.5)
Ending inventory quantity	***	***	***	▲***	▲***	▲***
Nonsubject sources:						
Quantity	152	170	199	▲31.2	▲11.9	▲17.2
Value	715	924	2,034	▲184.5	▲29.2	▲120.2
Unit value	5	5	10	▲116.9	▲15.4	▲87.9
Ending inventory quantity	***	***	***	***	***	***
All import sources:						
Quantity	10,062	12,950	10,679	▲6.1	▲28.7	▼(17.5)
Value	24,526	31,010	20,416	▼(16.8)	▲26.4	▼(34.2)
Unit value	2	2	2	▼(21.6)	▼(1.8)	▼(20.2)
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	***	***	***	***	***	***

Table continued on next page.

Table C-2--Continued
Corrosion inhibitors: Summary data concerning the U.S. market including no processors, 2017-19
(Quantity= 1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2017	2018	2019	2017-19	2017-18	2018-19
U.S. producers':						
Ending inventory quantity	***	***	***	▼***	▲***	▼***
Inventories/U.S. shipments (fn1)	***	***	***	▼***	▼***	▼***
Production workers	***	***	***	▲***	▲***	▼***
Hours worked (1,000s)	***	***	***	▲***	▲***	▲***
Wages paid ($1,000)	***	***	***	▲***	▲***	▲***
Hourly wages (dollars per hour)	***	***	***	▲***	▲***	▲***
Productivity (lbs per hr)	***	***	***	▼***	▼***	▼***
Unit labor costs	***	***	***	▲***	▲***	▲***
Net sales:						
Quantity	***	***	***	▲***	▲***	▼***
Value	***	***	***	▲***	▲***	▼***
Unit value	***	***	***	▼***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	▲***	▲***	▲***
Gross profit or (loss) (fn2)	***	***	***	▼***	▲***	▼***
SG&A expenses	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Net income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Capital expenditures	***	***	***	▲***	▲***	▼***
R&D expenses	***	***	***	▼***	▼***	***
Net assets	***	***	***	▲***	▲***	▼***
Unit COGS	***	***	***	▲***	▼***	▲***
Unit SG&A expenses	***	***	***	▼***	▼***	▼***
Unit operating income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Unit net income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
COGS/sales (fn1)	***	***	***	▲***	▼***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	▼***	▲***	▼***
Net income or (loss)/sales (fn1)	***	***	***	▼***	▲***	▼***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics for HTS statistical reporting numbers 2933.99.8210 and 2933.99.8220, accessed March 13, 2020.

APPENDIX D

U.S. PRODUCERS' AND IMPORTERS' COMPARISONS OF PRODUCTS BY THE LIKE PRODUCT FACTORS

Tables D-1 (U.S. producers), D-2 (U.S. importers), D-3 (comparisons of corrosion inhibitors) present a summary of U.S. producers' and importers' responses on the comparability of tolyltriazole versus benzotriazole. Each table includes the six like product factors and the narratives provided by U.S. producers and importers.

Table D-1
Corrosion inhibitors: U.S. producers' comparisons of tolyltriazole vs. benzotriazole under the like product factors

* * * * * * *

Table D-2
Corrosion inhibitors: U.S. importers' comparisons of tolyltriazole vs. benzotriazole under the like product factors

* * * * * * *

Table D-3
Corrosion inhibitors: U.S. producers' and U.S. importers' comparisons of tolyltriazole vs. benzotriazole

Factor	U.S. producers				U.S. importers			
	F	M	S	N	F	M	S	N
	Count of firms							
Physical characteristics	---	4	1	---	---	6	3	3
Interchangeability	2	1	2	---	---	3	7	2
Manufacturing	1	4	1	---	1	4	3	1
Channels	3	2	---	---	6	2	2	---
Perceptions	3	1	2	---	1	6	4	2
Price	---	3	3	---	1	2	4	4

Note: F = Fully comparable, M = Mostly comparable, S = Somewhat comparable, N = Not-at-all comparable

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

Table D-3 presents U.S. producers' and U.S. importers comparisons of tolyltriazole versus benzotriazole.[1] For the analysis of each of the following six factors the responses are categorized as follows:

F: fully comparable or the same, *i.e.*, have no differentiation between them;
M: mostly comparable or similar;
S: somewhat comparable or similar;
N: never or not-at-all comparable or similar; or
0: no familiarity with products.

Physical characteristics and uses

Five U.S. producers and twelve U.S. importers addressed the physical characteristics and end uses of tolyltriazole compared to benzotriazole. Four U.S. producers indicated that they mostly comparable or the similar, while one producer indicated that they were somewhat comparable or similar. Six U.S. importers indicated that they were mostly comparable or similar. Additionally, six U.S. importers indicated that they were (three) somewhat comparable or similar or (three) never or not-at-all comparable or similar.

At the Commission's conference, the petitioner indicated that tolyltriazole and benzotriazole "share similar physical characteristics and are used in the same applications. Both are mild acids with similar chemical formulas."[2]

In its postconference brief, the respondents (Dober) asserted that ***.[3]

Interchangeability

Five U.S. producers and twelve U.S. importers addressed the question of the ability to substitute products with the same products in the same application of tolyltriazole compared to benzotriazole. The U.S. producers' responses varied, while the ten U.S. importers indicated that they were (seven) somewhat comparable or similar or (three) never or not-at-all comparable or similar. Additionally, three U.S. importers indicated that they mostly comparable or the similar.

In its postconference brief, the respondents (Nalco) indicated that "a water treatment product that uses sodium benzotriazole cannot have tolyltriazole substituted in its place, or vice

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[1] In its postconference brief, Suez took no position on the domestic like product issue. Respondents (Suez) postconference brief, p. 6.
[2] Conference transcript, p. 14 (Milawski).
[3] Respondents (Dober) postconference brief, p. 11.

versa. Nalco would not obtain one type of corrosion inhibitor for use in making an end product when the formula requires a different one.[4]

In its postconference brief, the petitioner contends that tolyltriazole and benzotriazole are interchangeable in a number of specific applications, with end users typically needing to make only minor adjustments to their production facilities when switching between them.[5]

Channels of distribution

Five U.S. producers and ten U.S. importers responded on the channels of distribution of tolyltriazole and benzotriazole. All five U.S. producers indicated that they were fully comparable or the same or mostly comparable or similar, while the eight of the ten U.S. importers fully comparable or the same or mostly comparable or similar. Two U.S. importers indicated that they were somewhat comparable or similar.

At the Commision's conference, the petitioner indicated that tolyltriazole and benzotriazole are in the same channels of distribution at reasonably similar prices.[6]

Customer and producer perceptions

Five U.S. producers and thirteen U.S. importers addressed the question market perceptions of tolyltriazole compared to benzotriazole regarding market perceptions. Both the U.S. producers' and the U.S. importers' responses varied.

In postconference brief, the respondents (Dober) indicated that they produce ***.[7]

Manufacturing facilities and production employees

Six U.S. producers and nine U.S. importers if tolyltriazole compared to benzotriazole are manufactured in the same facilities, from the same inputs, on the same/shared machinery and equipment, and using the same employees. Five U.S. producers indicated that they were fully comparable or the same or mostly comparable or similar. The U.S. importers' responses were varied.

---

[4] Respondents (Nalco) postconference brief, p. 3.
[5] Petitioners postconference brief, p. 6.
[6] Conference transcript (Reynolds), p. 32.
[7] Respondents (Dober) postconference brief, p. 17.

In its postconference brief, the petitioner indicated that tolyltriazole and benzotriazole can be produced in the same production facilities using the same employees and similar production processes.[8]

In its postconference brief, the respondents (Dober) indicated that the scope of the petition should not include the solid form of tolyltriazole if Wincom only produces the liquid form and does not produce the solid form of tolyltriazole. The respondents further indicate that the petitioner only produces products that fall under one of the three HTS statistical reporting numbers, and that the HTS statistical reporting numbers for solid forms of benzotriazole and tolyltriazole should not be included in the scope.[9]

Price

Six U.S. producers and eleven U.S. importers addressed the question of tolyltriazole compared to benzotriazole. The U.S. producers responses varied, while eight U.S. importers indicated that they were never similar or comparable or somewhat similar and comparable.

In its postconference brief, the petitioner indicated that tolyltriazole and benzotriazole price fall within the same general range.[10]

In its postconference brief, the respondents (Nalco) indicated that "domestic purchasers use a specific type of corrosion inhibitor to make their end products will base purchasing decisions on what their established formulae require, not price."[11]

[8] Petitioners postconference brief, p. 6.
[9] Respondents (Dober) postconference brief, p. 12.
[10] Petitioners postconference brief, p. 7.
[11] Respondents (Nalco) postconference brief, p. 7.

APPENDIX E

SELECTED TRADE AND FINANCIAL DATA FOR SUEZ WTS, PMC, AND DOBER

Select data regarding Suez WTS, PMC, and Dober

Suez WTS, PMC, and Dober provided U.S. producer questionnaire responses in these investigations. These companies ***. In addition, ***.[1] [2]

Tables E-1 through E-10 and figure E-1 provide select industry and trade data for these additional companies.

Table E-1
Corrosion inhibitors: PMC, Suez, and Dober's position on the petition, location of production, and share of production, 2019

Firm	Position on petition	Production locations	Share of additional production (percent)
Dober	***	Hazle Township, PA	***
PMC	***	Cincinnati, Ohio	***
Suez WTS	***	Trevose, PA New Philadelphia, OH Addison, IL Orange, TX Bakersfield, CA	***
Total			***

Source: Compiled from data submitted in response to Commission questionnaires

Table E-2
Corrosion Inhibitors: PMC, Suez, and Dober's ownership, related and/or affiliated firms

* * * * * * *

[1] Respondent Suez postconference brief, Exh. 2 p. 3.

[2] While all three companies provided data in the questionnaire's "producer" questions (PMC also provided data in the "processor" sections), none of these companies produce crude TTA or BTA.

Table E-3
Corrosion inhibitors: Comparison of chemical manufacturing, processing/blending activities of Wincom, and experience of additional U.S. processors/blenders *, 2017-19**

Factor	Corrosion inhibitors chemical manufacturing from Part III of report	Corrosion inhibitors processing from Part III of the report	***	***	***
Source and extent of the firm's capital investment[1]	***	***	***	***	***
Technical expertise involved in U.S. production activities[2]	***	***	***	***	***
Value added to the product in the United States[3]	***[4]	***	***[5]	***[5]	***[5]
Employment levels[6]	***	***	***	***	***
Quantity and type of parts and materials sourced in the United States[7]	***[8]	***	***[9]	***[9]	***[9]

[1] Net assets (range 2017-2019). Corrosion inhibitor processors from Part III of report had the same value for all periods and thus a single value reported in table.
[2] Technical expertise based on aggregate R&D (range 2017-2019). Corrosion inhibitor processors from Part III of report had the same value for all periods and thus a single value reported in table.
[3] Total conversion costs / total COGS (range 2017-19).
[4] Since the chemical manufacturers are tollers, and thus do not incur (or report) the cost of the vast majority of raw materials, total COGS had to be constructed for the calculation of value-added to the product from chemical manufacturing. For 2018 and 2019, this was done by adding the tollee's raw material costs to the total COGS of the tollers. In 2017, the tollee's raw material costs included the cost of importing corrosion inhibitors for approximately half of its net sales in that year. Therefore, staff used the average unit value of the tollee's raw material costs in 2018 and 2019 ($0.62 per dry pound) to estimate the raw material costs of the product manufactured by the tollers in that period.
[5] The value-added calculation for the ***.
[6] Aggregate production and related workers (PRW) (range 2017-2019). ***.
[7] Aggregate raw material values (range 2017-2019). These values are being reported under the assumption that raw materials other than imported corrosion inhibitors (i.e., oTDA and sodium nitrite) are being sourced domestically.
[8] Per footnote number 4 regarding adjustment of COGS for value added calculation of tollers, the same adjusted raw materials values were used for the quantity and type of parts sourced in the United States value range presented.
[9] The majority of these companies' raw materials are the imported crude TTA and BTA and there is not a reliable measure available to break out the portion of those raw materials that are for parts/materials sourced in the United States.

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

Table E-4
Corrosion Inhibitors: PMC, Suez, and Dober's capacity, production, and cap. utilization, 2017-19

* * * * * * *

Figure E-1
Corrosion Inhibitors: PMC, Suez, and Dober's capacity, production, and capacity utilization, 2017-19

* * * * * * *

Table E-5
Corrosion Inhibitors: PMC, Suez, and Dober's U.S. shipments, export shipments, and total shipments, 2017-19

* * * * * * *

Table E-6
Corrosion Inhibitors: PMC, Suez, and Dober's U.S. shipments, by type, 2017-19

* * * * * * *

Table E-7
Corrosion Inhibitors: PMC, Suez, and Dober's inventories, 2017-19

* * * * * * *

Table E-8
Corrosion Inhibitors: *, 2017-19**

* * * * * * *

Table E-9
Corrosion Inhibitors: *, 2017-19**

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Table E-10
Corrosion Inhibitors: PMC, Suez, and Dober's employment related data, 2017-19

Item	Calendar year		
	2017	2018	2019
Production and related workers (PRWs) (number)	***	***	***
Total hours worked (hours)	***	***	***
Hours worked per PRW (hours)	***	***	***
Wages paid (dollars)	***	***	***
Hourly wages (dollars per hour)	***	***	***

Note: ***. Email message from *** March 11, 2020.
Additionally, the reported data may be overstated by ***, because it reported that it was unable to segregate employment related data for the products that were in-scope only. ***. *** further indicated that the relatively low wages and hours for 2017 proportional to 2018-19 were due to ***. Email message from ***, March 17, 2020.

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

Table E-11 presents PMC, Suez WTS, and Dober's financial results in relation to corrosion inhibitors, while table E-12 presents selected financial data, by company. [3] [4] Table E-13 presents data on PMC, Suez WTS, and Dober's total assets, while table E-14 presents the companies' capital expenditure and research and development ("R&D") expenses.[5]

Table E-11
Corrosion Inhibitors: PMC, Suez, and Dober's results of operations, 2017-19

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Table E-12
Corrosion Inhibitors: PMC, Suez, and Dober's results of operations, by company, 2017-19

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[3] ***.
[4] ***.
[5] ***.

Table E-13
Corrosion Inhibitors: PMC, Suez, and Dober's total assets, 2017-19

Firm	Calendar years		
	2017	2018	2019
	Total net assets (1,000 dollars)		
Dober	***	***	***
PMC	***	***	***
Suez WTS	***	***	***
All firms	***	***	***

Note: ROA calculations are less meaningful due to missing and inaccurate data (see footnote 3 of this appendix). Based on available data, the overall ROA calculations are 15.5, 12.5, and 9.7 percent for 2017, 2018, and 2019, respectively.

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

Table E-14
Corrosion Inhibitors: PMC, Suez, and Dober's capital expenditures and research and development expenses, 2017-19

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