Non-Refillable Steel Cylinders from China

Investigation Nos. 701-TA-644 and 731-TA-1494 (Final)

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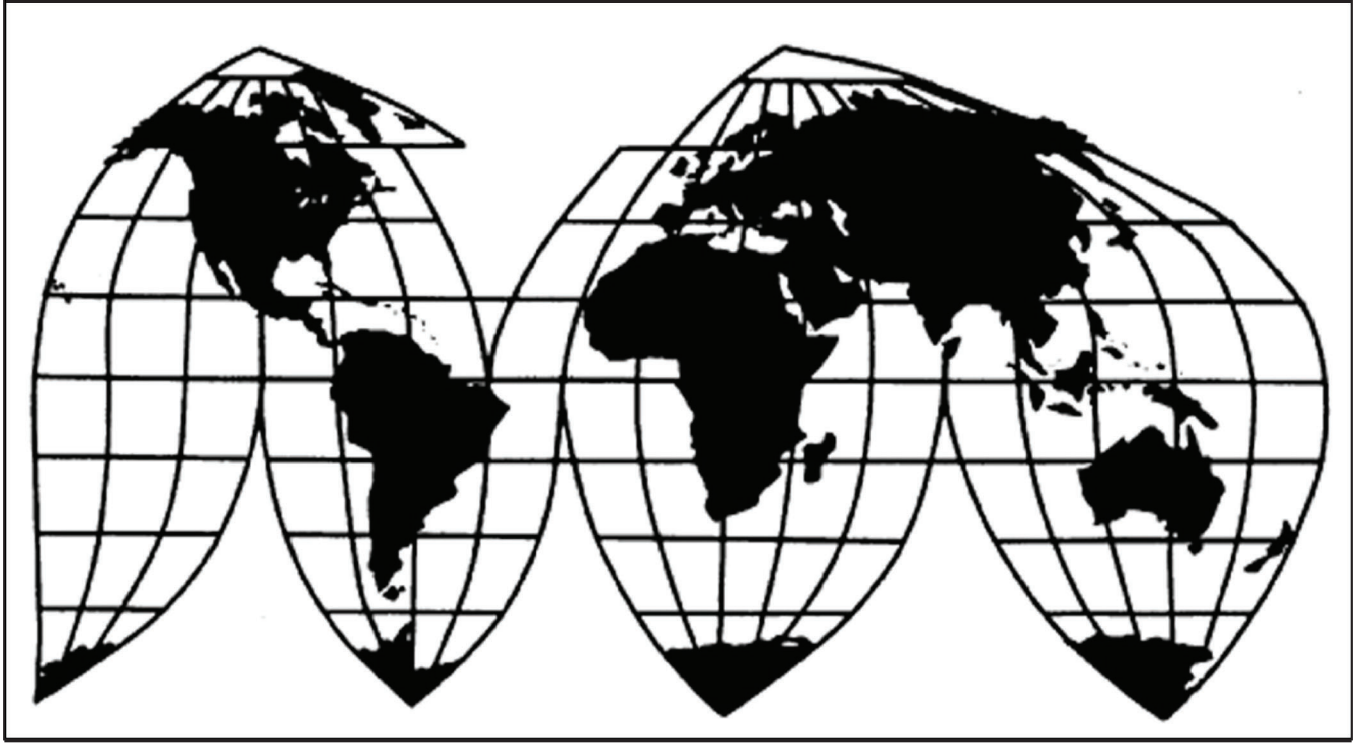

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-644 and 731-TA-1494 (Final)

Non-Refillable Steel Cylinders 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 an industry in the United States is materially injured by reason of imports of non-refillable steel cylinders from China, provided for in subheadings 7310.29.00 and 7311.00.00 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV"), and to be subsidized by the government of China.

BACKGROUND

The Commission instituted these investigations effective March 27, 2020, following receipt of petitions filed with the Commission and Commerce by Worthington Industries, Columbus, Ohio. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of non-refillable steel cylinders from China were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on December 28, 2020 (85 FR 84367). In light of the restrictions on access to the Commission building due to the COVID–19 pandemic, the Commission conducted its hearing through written testimony and video conference on March 11, 2021. All persons who requested the opportunity were permitted to participate.

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

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of non-refillable steel cylinders ("NRSCs") from China found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV") and subsidized by the government of China.

I. Background

The petitioner is Worthington Industries ("Petitioner" or "Worthington"), a domestic producer of non-refillable steel cylinders ("NRSCs"). Representatives from Worthington appeared at the hearing accompanied by counsel and submitted prehearing and posthearing briefs, and final comments.[1] Two respondent groups participated actively in the final phase of these investigations. Representatives and counsel for Zhejiang Huijin Machinery Manufacture Co., Ltd., Zhejiang Kin- Shine Technology Co., Ltd., Zhejiang Jucheng Cylinder Co., Ltd., Sanjiang Kaiyuan Co., Ltd., Jinhua Sinoblue Machinery Manufacturing Co., Ltd., and Wu Yi Xilinde Machinery Manufacture Co., Ltd., producers of the subject merchandise (collectively, "Chinese Respondents"), appeared at the hearing and jointly submitted prehearing and posthearing briefs, and final comments. Representatives and counsel for National Refrigerants, Inc. ("National"), a U.S. importer and consumer of subject NRSCs, also appeared at the hearing, and submitted prehearing and posthearing briefs, and final comments.

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[2] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output

[1] In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted the hearing in these investigations by video conference on March 11, 2021, as set forth in procedures provided to the parties.

[2] 19 U.S.C. § 1677(4)(A).

of a domestic like product constitutes a major proportion of the total domestic production of the product."[3] In turn, the Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[4]

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.[5] 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."[6] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[7]

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.[8] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the

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[3] 19 U.S.C. § 1677(4)(A).

[4] 19 U.S.C. § 1677(10).

[5] 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).

[6] *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. Cir. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[7] *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).

[8] *See, e.g.*, *Cleo*, 501 F.3d at 1299; *NEC Corp. v. Dep't of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

facts of a particular investigation.[9] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[10]

B. Product Description

In its final determinations, Commerce defined the imported merchandise within the scope of these investigations as –

> … certain seamed (welded or brazed), non-refillable steel cylinders meeting the requirements of, or produced to meet the requirements of, U.S. Department of Transportation (USDOT) Specification 39, TransportCanada Specification 39M, or United Nations pressure receptacle standard ISO 11118 and otherwise meeting the description provided below (non-refillable steel cylinders). The subject non-refillable steel cylinders are portable and range from 300-cubic inch (4.9 liter) water capacity to 1,526-cubic inch (25 liter) water capacity. Subject non-refillable steel cylinders may be imported with or without a valve and/or pressure release device and unfilled at the time of importation. Non-refillable steel cylinders filled with pressurized air otherwise meeting the physical description above are covered by this investigation.
>
> Specifically excluded are seamless nonrefillable steel cylinders.
>
> The merchandise subject to this investigation is properly classified under statistical reporting numbers 7311.00.0060 and 7311.00.0090 of the Harmonized Tariff Schedule of the United States (HTSUS). The merchandise may also enter under HTSUS statistical reporting numbers 7310.29.0025 and 7310.29.0050. Although the HTSUS statistical reporting numbers are provided for convenience and customs purposes, the written description of the merchandise is dispositive.[11]

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

[10] *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.").

[11] *See Non-Refillable Steel Cylinders From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 86 Fed. Reg. 15188, 15190 (Mar. 22, 2021) ("Commerce Final AD Determination") and *Certain Non-Refillable Steel Cylinders From the People's Republic of China:*

NRSCs are portable, non-reusable steel containers specifically designed to store, transport, and dispense compressed or liquefied gases, or liquid materials for a wide variety of end-use applications. Some common end-uses include: (1) refrigerant gases for refrigeration and air-conditioning applications; (2) helium for inflating retail and commercial balloons; (3) gases for medical and industrial applications; and (4) various liquid chemical mixtures such as foam insulations, sealants, and adhesives for residential and commercial construction applications. Generally, the empty cylinders are sold to customers who fill them with gases or liquid chemical mixtures, and the filled cylinders are then sold to end users for each specific application.[12]

The two-piece welded tank of an NRSC features two ports, for the one-way dispensing valve and pressure-release device, along with a double-handled handling collar on top. NRSCs for use in the U.S. market are typically designed to meet the requirements of U.S. Department of Transportation ("USDOT") specification 39 ("DOT-39"), which provides the steel specification for the tank body, welding or brazing requirements, wall thickness, markings, testing, and other technical requirements; as well as specifying that the cylinders be non-reusable (*i.e.*, non-refillable). Alternatively, to qualify for use in the U.S. market, NRSCs can also be designed to meet the requirements of Transport Canada ("TC") Specification 39M or United Nations pressure receptacle standard International Standards Organization ("UNISO") 11118 for hazardous material packaging.[13]

C. Analysis

In the preliminary determinations, the Commission found one domestic like product comprised of non-refillable steel cylinders, coextensive with Commerce's scope of investigation. The Commission found that all NRSCs shared the same physical characteristics, design, and end uses, and that those physical characteristics, design, and end uses differed from other cylinders, such as refillable cylinders. All NRSCs are produced with the same production process, equipment, and employees, and other types of cylinders cannot be produced in the same production facility without significant investment of time and cost. In addition, it found that market participants perceived NRSCs to be a unique product, produced to the same U.S. or

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(…Continued)
Final Affirmative Countervailing Duty Determination, 86 Fed. Reg. 15192, 15194-95 (Mar. 22, 2021) ("Commerce Final CVD Determination").

[12] CR/PR at I-10.

[13] CR/PR at I-10 to I-11.

international standards, and that NRSCs are not interchangeable with other cylinders that lack its physical characteristics and design.[14]

There is no new evidence in the final phase of these investigations to call into question the Commission's definition in the preliminary determinations of one domestic like product comprised of non-refillable steel cylinders, coextensive with Commerce's scope of investigation.[15] Therefore, based on the record and in the absence of any contrary argument, we define a single domestic like product consisting of non-refillable steel cylinders, coextensive with Commerce's scope of investigation.[16]

III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[17] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

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[14] *Non-Refillable Steel Cylinders from China*, Inv. Nos. 701-TA-644 and 731-TA-1494 (Preliminary) USITC Pub. 5057 (May 2020) ("Preliminary Determination") at 7-10.

[15] Petitioner argues that the domestic like product definition should mirror Commerce's scope of investigation. Petitioner Prehearing Brief at 4. Chinese Respondents agree that the domestic like product should include all unfilled NRSCs, coextensive with the scope. Chinese Respondents Prehearing Brief at 8.

[16] In its petition, Worthington proposed a scope of investigations that included both unfilled ("empty") and filled NRSCs. *See* CR/PR at I-8 n.15. Commerce, however, initiated these investigations only for unfilled NRSCs, subject to further clarification of the scope. *See Certain Non-Refillable Steel Cylinders From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 85 Fed. Reg. 22402, 22403 (Apr. 22, 2020), and *Certain Non-Refillable Steel Cylinders From the People's Republic of China: Initiation of Countervailing Duty Investigation*, 85 Fed. Reg. 22407, 22407-08 (Apr. 22, 2020). In its preliminary determinations, Commerce defined the scope of the investigations as unfilled NRSCs after additional comment from Worthington that it no longer sought to include filled NRSCs within the scope. *See Certain Non-Refillable Steel Cylinders From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*, 85 Fed. Reg. 53323, 53324 (Aug. 28, 2020), and *Certain Non-Refillable Steel Cylinders From the People's Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*, 85 Fed. Reg. 68852, 68853 (Oct. 30, 2020). Commerce's preliminary scope determinations were unchanged in Commerce's final determinations. *See* Commerce Final AD Determination, 86 Fed. Reg. at 15190, and Commerce Final CVD Determination, 86 Fed. Reg. at 15194-95.

[17] 19 U.S.C. § 1677(4)(A).

Worthington was the only domestic producer of NRSCs during the period of investigation ("POI").[18] There are no related party issues.[19] We consequently define the domestic industry to consist of the sole U.S. producer of NRSCs, Worthington,[20] in accordance with our definition of the domestic like product.

IV. Material Injury by Reason of Subject Imports[21]

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of dumped and subsidized imports of NRSCs from China.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[22] 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.[23] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[24] In

[18] The POI includes full years 2017, 2018, 2019, and January-September 2020.

[19] Worthington did not import subject merchandise from China during the POI and is not related to an exporter or importer of the subject merchandise. CR/PR at III-2 and Table III-2.

[20] *See* CR/PR at Table III-1; Petitioner Prehearing Brief at 9 and n.4; Chinese Respondents Prehearing brief at 7.

[21] 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 be deemed negligible. 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)). Negligibility is not an issue in these investigations. From March 2019 through February 2020, the twelve-month period preceding the filing of the petitions, imports of NRSCs from China subject to the countervailing and antidumping duty investigations accounted for *** percent of total U.S. imports of NRSCs by quantity. CR/PR at Table at IV-6 and Table IV-4.

[22] 19 U.S.C. §§ 1671d(b), 1673d(b).

[23] 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).

[24] 19 U.S.C. § 1677(7)(A).

assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[25] 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."[26]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[27] 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.[28] 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.[29]

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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[25] 19 U.S.C. § 1677(7)(C)(iii).

[26] 19 U.S.C. § 1677(7)(C)(iii).

[27] 19 U.S.C. §§ 1671d(b), 1673d(b).

[28] *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).

[29] 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. U.S. Int'l Trade Comm'n*, 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. U.S. Int'l Trade Comm'n*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

injury threshold.[30] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[31] 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.[32] It is clear that the existence of injury caused by other factors does not compel a negative determination.[33]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject

[30] 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.

[31] 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.").

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

[33] *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.").

imports."[34] 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."[35] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[36]

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.[37] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[38]

B. Conditions of Competition and the Business Cycle [39]

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

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[34] *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*.

[35] *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.

[36] *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.").

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

[38] *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.").

[39] No party argues that the Commission should accord diminished weight to any data in these investigations due to post-petition developments. Petitioner, however, asserts that several post-petition developments are pertinent conditions of competition. Petitioner acknowledged that its condition had improved after the petition was filed and after preliminary duties were imposed. It asserts that these events had a significant positive impact on its NRSCs operations, through improved prices and regained sales volumes. *See, e.g.*, Petitioner Prehearing Brief at 54-55 and Exhibit 1, para. 17(a)-(d) (Bowes Declaration).

1. Captive Production Provision

Petitioner asserts that the Commission should apply the captive production provision in the final phase of these investigations, as it did in the preliminary phase, because Worthington internally consumes a portion of its domestically produced NRSCs.[40] Petitioner argues that the Commission should focus primarily on the merchant market in determining the domestic industry's market share and financial performance.[41]

Chinese Respondents assert that the basic facts concerning the Commission's finding regarding captive production made in the preliminary determinations remain the same for the final phase of the investigations. Thus, Chinese Respondents assume the Commission will focus

[40] The captive production provision, 19 U.S.C. § 1677(7)(C)(iv), as amended by the Trade Preferences Extension Act of 2015 ("TPEA"), provides:

(iv) CAPTIVE PRODUCTION – If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that-

> (I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product, and
>
> (II) the domestic like product is the predominant material input in the production of that downstream article,

then the Commission, in determining market share and the factors affecting financial performance set forth in clause (iii), shall focus primarily on the merchant market for the domestic like product.

The SAA indicates that where a domestic like product is transferred internally for the production of another article coming within the definition of the domestic like product, such transfers do not constitute internal transfers for the production of a "downstream article" for purposes of the captive production provision. SAA at 853. The TPEA of 2015 eliminated what had been the third statutory criterion of the captive production provision. Pub. L. 114-27, § 503(c).

[41] Petitioner Prehearing Brief at 27.

its investigations on the impact of subject imports on the merchant market.[42]

Threshold Criterion. The captive production provision only applies if, as a threshold matter, significant production of the domestic like product is internally transferred and significant production is sold in the merchant market. In these investigations, internal consumption accounted for between *** percent and *** percent of the domestic industry's total shipments of NRSCs in each year of the POI.[43] Commercial shipments accounted for between *** percent and *** percent of the domestic industry's total shipments in each year of the POI.[44] We find that both the internal transfer and merchant market sales constitute significant portions of the domestic industry's production and the threshold criterion is therefore satisfied.

First Statutory Criterion. The first criterion focuses on whether any of the domestic like product that is internally transferred for further processing is instead sold on the merchant market.[45] Worthington did not report diverting NRSCs intended for internal consumption of NRSCs for the production of the downstream products it produces (*** NRSCs) to the merchant market.[46] Therefore, this criterion appears to be satisfied.

Second Statutory Criterion. In applying the second criterion, we generally consider whether the domestic like product is the predominant material input into a downstream product by referring to its share of the raw material cost of the downstream product but have

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[42] Chinese Respondents Prehearing Brief at 23-24. Chinese Respondents define the merchant market in these investigations as NRSCs produced and sold to be filled, rather than NRSCs which Worthington fills itself and sells as a component of *** (Worthington's "captive" production). They assert that only ***, imported NRSCs during the POI to be filled with *** in competition with Worthington. Chinese Respondents claim that these NRSCs were specially designed and, when imported, were dedicated for this use and were not actually used for any other purpose. As such, they also request that the Commission exclude *** imports in determining the quantity and market penetration of subject imports which potentially were injurious. *Id*. Chinese Respondents have not provided a sufficient basis for excluding *** imports. *See id.* Accordingly, we have included *** imports in our injury analysis, as they are subject merchandise, and observe that the data show similar trends with or without these imports included in the dataset.

[43] CR/PR at III-9 and Table III-5. The definition of an "internal transfer" for purposes of the captive production provision was addressed in *Bethlehem Steel Corp. v. United States*, 294 F. Supp. 2d 1359, 1364-1368 (Ct. Int'l Trade 2003).

[44] CR/PR at III-9 and Table III-5. Export shipments of NRSCs by the domestic industry accounted for *** to *** percent of its total shipments during the period of investigation. *Id.*

[45] *See*, *e.g*., *Hot-Rolled Steel Products from Argentina and South Africa*, Inv. Nos. 701-TA-404, 731-TA-898, 905 (Final), USITC Pub. 3446 (Aug. 2001) at 15-16; *Certain Cold-Rolled Steel Products from Argentina, Brazil*, *China*, *Indonesia*, *Japan*, *Russia*, *Slovakia*, *South Africa*, *Taiwan*, *Turkey and Venezuela*, Inv. Nos. 701-TA-393 and 731-TA-829-40 (Final) (Remand), USITC Pub. 3691 (May 2004), at 2 & n.19.

[46] CR/PR at III-10.

also construed "predominant" material input to mean the main or strongest element, and not necessarily a majority, of the inputs by value.[47] In these investigations, NRSCs reportedly comprised an average of *** percent of the finished cost of the downstream products produced with the internally consumed NRSCs.[48] Thus, this criterion also appears to be satisfied.[49]

Conclusion. Based on the above analysis and absent any contrary arguments, we conclude each criterion for application of the captive production provision is satisfied in these investigations. Accordingly, we focus primarily on the merchant market in analyzing the market share and financial performance of the domestic industry.[50]

2. Demand Conditions

U.S. demand for NRSCs is driven principally by demand for the downstream products that use them. NRSCs are used to contain gases for medical, industrial, and commercial applications (particularly refrigerant gases), as well as for various liquid chemical mixtures such as foam adhesives and sealants.[51]

Apparent U.S. consumption for NRSCs in the merchant market increased steadily over the POI, from *** units in 2017 to *** units in 2018 and to *** units in 2019, a level *** percent higher than in 2017; it was *** percent lower in January-September ("interim") 2020,

[47] *See generally, e.g., Polyethylene Terephthalate Film, Sheet and Strip from Brazil, China, Thailand, and the United Arab Emirates*, Inv. Nos. 731-TA-1131-1134 (Final), USITC Pub. 4040 at 17 n.103 (Oct. 2008); *Polyethylene Terephthalate Film, Sheet, and Strip from India and Taiwan*, Inv. Nos. 701-TA-415 and 731-TA-933-934 (Final), USITC Pub. 3518 at 11 & n.51 (June 2002); *see also Polyvinyl Alcohol from Germany and Japan*, Inv. Nos. 731-TA-1015-16 (Final), USITC Pub. 3604 at 15 n.69 (June 2003).

[48] CR/PR at III-10 and Table III-8 (showing that NRSCs used in production of *** NRSCs constitute *** percent of the cost of the product).

[49] *See Carbon and Certain Alloy Steel Wire Rod from Belarus, Russia, and the United Arab Emirates*, Inv. Nos. 731-TA-1349, 1352, and 1357 (Final), USITC Pub. 4752 at 26-27 (Jan. 2018) (finding second statutory criterion satisfied when reporting domestic producers indicated that wire rod accounted for the majority of the finished cost of a number of downstream products).

[50] In addition to the merchant market, we also have considered the market as a whole. We observe that the data trends are substantially the same for both the merchant and total markets. *See* CR/PR at Table C-2 ("merchant market"); *see also* CR/PR at Table C-1 ("total market").

[51] CR/PR at II-6.

at *** units, than in interim 2019, at *** units.[52]

The *** and a majority of responding importers (7 of 8) and purchasers (7 of 10) reported that U.S. demand for NRSCs had increased or remained unchanged over the POI.[53] The parties contend that an antidumping duty order issued on imports of hydrofluorocarbon blends from China in August 2016 but not components of those blends as one reason demand has increased for NRSCs from new blenders using imported HFC components.[54] The record indicates that consumption for NRSCs would be unlikely to change much in response to U.S. market price changes because there are no substitutes for NRSCs and generally NRSCs constitute a small to moderate cost share of the end uses of the final products.[55]

[52] CR/PR at Table C-2. Apparent U.S. consumption for NRSCs in the total market increased steadily over the POI, from *** units in 2017 to *** units in 2018 and *** units in 2019, a level *** percent higher than in 2017; it was *** units in interim 2019 and interim 2020. CR/PR at Table C-1.

In these investigations, we rely on apparent U.S. consumption calculated using U.S. importers' U.S. shipments. We recognize that most imports were for internal consumption and U.S. importers did not sell NRSCs into the market. As the Commission has previously explained, for purposes of evaluating consumption such imports are not distinguishable analytically from merchandise purchased by a U.S. purchaser from a U.S. importer for consumption. *See Small Vertical Shaft Engines from China*, Inv. Nos. Inv. Nos. 701-TA-643 and 731-TA-1493 (Final), USITC Pub. 5185 (April 2021) at 26. In the present investigations, however, there is limited difference between the import volume trends and the importers' U.S. shipment trends and therefore we continue to rely on importers' U.S. shipments for evaluating consumption, as we did in the preliminary phase of these investigations. *See* Preliminary Determination, USITC Pub. 5057 at 27.

[53] CR/PR at II-7 to II-8, and Table II-4.

[54] *Hydrofluorocarbon Blends and Components From China; Determination*, 81 Fed. Reg. 53157 (Aug. 11, 2016); *Hydrofluorocarbon Blends and Components From China*, Inv. No. 731-TA-1279, USITC Pub. 4629 (August 2016). In the final phase of the investigation, the Commission found two domestic like products, one consisting of hydrofluorocarbon (HFC) blends and one consisting of HFC components. The Commission made an affirmative present material injury determination with respect to HFC blends, and negative present material injury and threat of material injury determinations with respect to HFC components. USITC Pub. 4629 at 28, 42, 44. The parties assert that these determinations and the imposition of an antidumping duty order on HFC blends resulted in increased imports of HFC components and, consequently, increased demand for NRSCs as production of HFC blends in the United States increased relative to HFC blend imports. *See, e.g.*, Chinese Respondents Posthearing Brief at 11-13 and Petitioner Posthearing Brief, Exhibit 1 at 28-29.

[55] CR/PR at II-6, II-8, and II-17 to II-18. While NRSCs make up a significant cost share of *** tanks, they represent a small to moderate cost share in other end use products, such as for refrigerants and HVAC systems. CR/PR at II-6.

3. Supply Conditions

At the beginning of the POI, there were two domestic producers of NRSCs, Worthington and Amtrol. In 2017, Worthington acquired Amtrol's NRSC production facilities in Kentucky and Rhode Island and thus became the sole domestic producer of NRSCs.[56] In 2019, the domestic industry consisted of a single domestic producer of NRSCs which accounted for *** percent of domestic production.[57]

The domestic industry supplied the largest share of the U.S. NRSC market throughout the POI. The domestic industry's share of the quantity of apparent U.S. consumption in the merchant market decreased steadily from *** percent in 2017 to *** percent in 2018 to *** percent 2019; its share of apparent U.S. consumption was *** percent in interim 2019 and *** percent in interim 2020.[58]

Subject imports' share of the quantity of apparent U.S. consumption in the merchant market increased steadily over the POI, and was *** percent in 2017, *** percent in 2018, and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020.[59]

Nonsubject imports were virtually nonexistent as a source of supply to the U.S. market throughout the POI. Their share of the merchant market by quantity was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** in interim 2019, and *** percent in interim 2020.[60] *** was reported as the source of nonsubject imports in interim 2020.[61]

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[56] CR/PR at II-1-II-2. In 2018, Worthington shut down the NRSC production line at the Rhode Island facility. CR/PR at III-3.

[57] CR/PR at Table III-1. Approximately *** of Worthington's total net sales quantity and value was reported as internal consumption of NRSCs. These NRSCs are filled with ***, packaged, and shipped to retail customers. CR/PR at VI-8 and n.6.

[58] CR/PR at Table C-2. The domestic industry's share of the quantity of apparent U.S. consumption in the total market generally followed the same trend, decreasing steadily from *** percent in 2017 to *** percent in 2018 to *** percent in 2019, and was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table C-1.

[59] CR/PR at Tables IV-5, C-2. Subject imports' share of the quantity of apparent U.S. consumption in the total market increased steadily over the POI, and was *** percent in 2017, *** percent in 2018, and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at C-1.

[60] CR/PR at Tables IV-5 and C-2. Nonsubject imports' share of the quantity of apparent U.S. consumption in the total market was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. *Id.* at Table C-1.

[61] CR/PR at Table II-2 and note.

4. Substitutability and Other Conditions

Based on the record, we find that domestically produced NRSCs and subject imports are highly substitutable.[62] As noted above, all NRSCs are produced to U.S. or international standards whether originating in the United States or China.[63] The U.S. producer, all responding importers, and virtually all responding purchasers reported that the domestic like product and subject imports from China were always or frequently interchangeable.[64]

The record shows that the subject imports and domestic product are generally comparable across purchasing factors, including with respect to factors Chinese Respondents' argue mitigate substitutability between subject imports and domestically-produced NRSCs: quality, availability and lead times. A majority of purchasers reported that the United States and China were comparable regarding quality meets industry standards, and a majority of purchasers reported they were comparable regarding reliability of supply.[65]

The record generally shows that delivery times for domestic like product and subject imports are comparable. All responding purchasers reported that delivery times for domestically produced product were comparable or superior to subject imports.[66] Worthington reported that *** percent of its commercial shipments were sold from inventory, with lead times averaging *** days. The remaining *** percent of its commercial shipments were produced-to-order, with lead times of *** days.[67] Two importers reported that Worthington's

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[62] We acknowledge this differs from the assessment by staff that there is a "moderate-to-high degree" of substitutability. CR/PR at II-18. While purchasers reported some differences in quality and availability between domestic and subject NRSCs, and Chinese Respondents and some purchasers have identified consistency in lead times as an issue (*see, e.g.*, CR/PR at Table II-9, II-16-II-17, Chinese Respondents Prehearing Brief at 18, 47-48), we find that the record as a whole as reviewed above indicates that the magnitude of any differences regarding quality, availability and lead times are relatively inconsequential and that there is a high degree of substitutability between domestic and subject NRSCs.

[63] CR/PR at I-9 to I-10.

[64] CR/PR at II-14 and Table II-10. One of 11 U.S. purchasers reported that the domestic like product and subject imports from China were sometimes interchangeable. *Id*.

[65] CR/PR at Table II-9. The majority of purchasers also reported that subject imports were comparable with respect to delivery time, delivery terms, discounts offered, minimum quantity requirements, packaging, payment terms, product consistency, product range, technical support/service and U.S. transportation costs. *Id.* National, while arguing the ***, acknowledges that the defect rate from both sources is "very low." National Prehearing Brief at 9 and Posthearing Brief, Appendix at 39-40.

[66] CR/PR at Table II-9.

[67] CR/PR at II-8; *see also* Petitioner Prehearing Brief at 67. In addition, Worthington acknowledges that it ***. CR/PR at II-5.

lead times were inconsistent, and another reported that Worthington's lead times increased significantly since the Worthington's acquisition of Amtrol.[68] National argues that Worthington's acquisition of Amtrol caused lead times for the domestically produced product to grow from one to four weeks, and later again in March of 2021 to six weeks.[69] However, National also reported that imports of subject NRSCs also have a lead time of approximately six weeks so that based on National's arguments extended lead times of domestically produced NRSCs did not cause a lead time disadvantage for domestic product relative to subject imports.[70]

The record also shows that availability is generally comparable for domestic product relative to subject imports. Three purchasers reported that domestic product is either comparable or superior to subject imports on availability, while four purchasers reported that domestic product is inferior to subject imports on availability.[71] As discussed below, however, other record evidence suggests that Worthington had unused capacity available to increase supply to the domestic market and was willing to supply domestic purchasers during the POI.[72]

The record also indicates that price, among other considerations, is an important factor in purchasing decisions for NRSCs.[73] Purchasers ranked price, along with availability, quality, reliability of supply, and lead time among the most important factors in purchasing decisions for NRSCs.[74] While a majority of responding importers and purchasers reported that differences other than price were always or frequently significant in purchasing decisions for NRSCs,[75] other record evidence suggests that price is the primary purchasing factor for a number of importers, as discussed further below.[76]

The principal raw material used in the production of NRSCs is cold-rolled steel.[77] Raw materials constituted the largest component of the domestic industry's cost of goods sold ("COGS") and accounted for a slightly decreasing share of total COGS over the POI.[78] As a share

[68] CR/PR at II-5.

[69] CR/PR at II-8 to II-9 and National Posthearing Brief, Appendix (Response to Commission Questions) at 31-32; *see also* Hearing Transcript, EDIS Doc. 736790 at 164-166 (McDevitt), 198 (Beatty).

[70] *See* CR/PR at II-8 to II-9.

[71] CR/PR at Table II-9.

[72] *See supra* Section IV.E.

[73] CR/PR at Table II-6.

[74] CR/PR at II-10 to II-11, and Tables II-6 and II-7.

[75] CR/PR at Table II-12.

[76] *See, e.g.,* Petitioner Posthearing Brief, Exhibit 4.

[77] CR/PR at V-1.

[78] CR/PR at Tables VI-1 and VI-3.

of the domestic industry's COGS for merchant market shipments, raw material costs ranged from *** percent to *** percent during the POI.[79] [80]

Worthington reported that the merchant market accounted for the majority of its shipments while internal consumption accounted for *** percent to *** percent of its total shipments of NRSCs during the POI.[81] *** U.S. importers' U.S. shipments of NRSCs were for internal consumption or transfer to related firms in 2017 and 2018; more than *** percent of these shipments were for internal consumption or transfer to related firms in 2019 and interim 2020.[82] Questionnaire data indicate that the majority of the domestic producer's U.S. commercial shipments of NRSCs in 2019 were made through long-term or annual contracts, with *** through spot sales.[83]

C. Volume of Subject Imports[84]

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."[85]

The volume and market share of subject imports from China in the merchant market increased steadily over the POI. The volume of subject imports was 2.6 million units in 2017,

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[79] CR/PR at Table VI-3. As a share of the domestic industry's total COGS in the merchant market, raw material costs were *** percent in 2017, *** percent in 2018, and *** percent in 2019; they were *** percent in interim 2019 and *** percent in interim 2020. *Id*. As a share of the domestic industry's COGS in the total market, raw material costs were *** percent in 2017, *** percent in 2018, and *** percent in 2019; they were *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table VI-1.

[80] Regarding the potential effects on raw material costs of additional duties imposed on steel imports pursuant to section 232 of the Trade Expansion Act of 1962 and section 301 of the Trade Act of 1974, Worthington stated that section 232 tariffs did not create a significant problem for it because steel accounts for *** percent of total raw material costs and the ***. Worthington also reported that section 301 duties on steel imports from China did not directly affect its prices or costs because ***. CR/PR at VI-10 and nn. 12 and 15; *see* Petitioner Posthearing Brief, Exhibit 1 at 40 and Petitioner U.S. Producer Questionnaire Response, EDIS Doc. 731102 at IV-19.

[81] CR/PR at III-9 and Table III-5.

[82] CR/PR at IV-7.

[83] CR/PR at Table V-2. The U.S. producer's U.S. commercial shipments were *** percent long-term contracts, *** percent short-term contracts, and *** percent spot sales. *Id*.

[84] U.S. import data are based on the questionnaire responses of 13 importers of NRSCs that accounted for an estimated *** percent of total imports, *** percent of subject imports, and *** percent of nonsubject imports in 2019. CR/PR at I-4.

[85] 19 U.S.C. § 1677(7)(C)(i).

2.7 million units in 2018, and 3.9 million units in 2019, for an overall increase of 52.2 percent; the volume of subject imports was 2.4 million units in interim 2019 and 2.5 million units in interim 2020.[86] Subject imports' share of the U.S. merchant market was *** percent in 2017, *** percent in 2018, and *** percent in 2019, for an overall increase of *** percentage points; the market share of subject imports in the merchant market was *** percent in interim 2019 and *** percent in interim 2020, for an overall increase of *** percentage points.[87]

Based on the foregoing, the Commission finds that the volume of subject imports and the increase in their volume is significant, both in 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 the subject imports, the Commission shall consider whether

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[88]

As discussed above, the record indicates a high degree of substitutability between subject imports from China and the domestic like product, and that price, along with other factors, is an important consideration in purchasing decisions.[89]

We have examined several sources of data in our underselling analysis, including pricing data, import purchase cost data, data derived from lost sales/lost revenue survey responses, and other data on the record. The Commission collected quarterly price data for the total quantity and f.o.b. value of two NRSC products shipped by the U.S. producer (Worthington) to

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

[87] CR/PR at Table IV-5, C-2. The market share of subject imports in the total market also increased steadily over the POI. Subject imports' share of the total market was *** percent in 2017, *** percent in 2018, and *** percent in 2019, for an overall increase of *** percentage points; it was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Tables IV-4, C-1.

[88] 19 U.S.C. § 1677(7)(C)(ii).

[89] CR/PR at II-13 and Table II-6.

unrelated customers between January 2017 and September 2020.[90] Price data reported by the domestic producer accounted for approximately *** percent of the U.S. producer's U.S. shipments of NRSCs in 2019.[91] No importers reported price data because *** had not sold unfilled NRSCs during the POI.[92]

The Commission also collected import purchase cost data for the same pricing products from firms that imported NRSCs for use in the production of their own downstream products.[93] *** importers reported usable import purchase cost data.[94] Purchase cost data reported by these firms accounted for *** percent of subject imports from China in 2019.[95] Landed duty-paid costs for subject imports were below the sales prices for U.S. produced NRSCs in *** quarterly comparisons, involving *** units of subject NRSCs, with price-cost differences ranging from 7.6 percent to 36.2 percent, and an average price-cost differential of 22.2 percent.[96]

We recognize that the import purchase cost data may not reflect the total cost of importing. Therefore, we requested that importers provide additional information regarding the costs and benefits of directly importing NRSCs. Eight of 12 importers that reported purchase cost data also reported that they did not incur additional costs beyond the landed duty-paid costs associated with importing NRSCs.[97] Of the four importers reporting additional costs, three reported that these costs ranged from *** to *** percent of landed duty-paid value.[98] One importer reported that the cost to import subject NRSCs added approximately *** percent to the landed duty-paid costs and the total cost is equivalent to the cost of acquiring a domestically produced NRSC.[99] These additional costs generally were less than the reported average price-cost differential of *** percent between landed duty-paid costs for the subject

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[90] The pricing products were ***Product 1*.--** Non-refillable steel cylinder, 9.5-inches in diameter, with 260 PSIG service pressure rating, unfilled, meeting the requirements of U.S. Department of Transportation specification 39; and ***Product 2*.--** Non-refillable steel cylinder, 9.5-inches in diameter, with 400 PSIG service pressure rating, unfilled, meeting the requirements of U.S. Department of Transportation specification 39. CR/PR at V-4.

[91] CR/PR at V-5.

[92] CR/PR at V-5.

[93] CR/PR at Tables V-3 and V-4.

[94] CR/PR at V-5.

[95] CR/PR at V-5.

[96] CR/PR at V-13 and Table V-6.

[97] CR/PR at V-10.

[98] CR/PR at V-10. In determining whether to directly import an NRSC, 7 of 12 importers (or 58.3 percent) reported that they compare costs of importing directly to the cost of purchasing from a U.S. producer. *Id*.

[99] CR/PR at V-10.

imports and prices for the domestic like product, with the differential calculated as a percentage of the price.[100]

U.S. importers were also asked whether the cost of the NRSCs they imported was lower than the price of purchasing an NRSC from a U.S. producer or subject producer. *** of 11 responding importers reported that imports were priced lower when not including the additional costs, and *** of nine responding importers reported that imports were priced lower when including additional costs.[101] Importers estimated their savings by importing themselves ranged from 9.0 percent to 35.0 percent when compared to purchasing from U.S. producer Worthington.[102]

We have also considered purchaser lost sales/lost revenue responses. Six of 11 responding purchasers reported that they had purchased subject imports instead of the domestic like product. Four of these purchasers reported that subject import prices were lower than the domestically produced product, and one purchaser, ***, reported that price was a primary reason for purchasing subject imports. [103] Other contemporaneous documentation on the record shows, however, that the domestic industry lost additional sales to subject imports primarily due to price during the POI.[104] These data are consistent with the data described above showing purchase costs for imports were lower than domestic prices in 2019.

In light of the available information showing that purchase costs for subject imports were substantially lower than prices for the domestic like product, that many responding purchasers reported that subject imports were lower priced than the domestic like product, the

[100] CR/PR at V-10, V-13, and Table V-6.

[101] CR/PR at V-10 to V-11. Several importers reported turning to subject product because they could not obtain NRSCs domestically from Worthington. CR/PR at V-10. Three responding importers – *** – are affiliated entities. *See* *** Importer Questionnaire Response, EDIS Doc. 731098 at I-4; National Posthearing Brief at 6. When the responses of these three entities are combined, *** out of seven responding entities stated that imports are priced lower when including additional costs.

[102] CR/PR at V-11.

[103] CR/PR at V-13 to V-14, and Tables V-7. The 11 responding purchasers reported purchasing a total of *** units of subject imports during the period. CR/PR at Tables V-7 and V-8. *** did not report a volume associated with this lost sale; it reported purchasing a total of *** units of subject imports over the POI. CR/PR at Tables V-7 and V-8. One purchaser reported that the U.S. producer had to ***. *See* CR/PR at Table V-9.

[104] Several importers referenced low priced subject imports in negotiations with Worthington for purchases of NRSCs. *See, e.g.,* Petitioner Posthearing Brief, Exhibit 4. In a 2017 *** indicated that it would shift to Chinese product due to ***. Worthington Exhibit 4, Attachment 7. In addition, *** provided by Worthington indicate that ***. Worthington Exhibit 4, Attachment 12; *see also* Petitioner Posthearing Brief, Exhibit 4, Attachment 24 (*** cancelled a portion of an order with Worthington because prices from ***, which further demonstrates the importance of price in purchasing decisions).

high degree of substitutability, and the importance of price in purchasing decisions, we find that the underselling by subject imports is significant. The underselling led to lost sales by the domestic industry and caused subject imports to gain market share at the expense of the domestic industry. The domestic industry lost *** percentage points of market share in the merchant market to the subject imports from 2017 to 2019 and an additional *** percentage points between interim 2019 and interim 2020.[105]

We have also considered price trends for the domestic like product and subject imports. The pricing data indicate that the domestic industry's prices generally increased from the first quarter of 2017 through the fourth quarter of 2018 and, after a decline in the first quarter of 2019, generally increased again through the third quarter of 2020, resulting in price increases ranging from *** percent to *** percent over the POI.[106] Available data indicate that increases of subject import landed duty paid values ranged from *** percent to *** percent over the POI.[107]

We have also examined whether subject imports prevented price increases which otherwise would have occurred to a significant degree. The domestic industry's unit COGS increased for its U.S. shipments more than its unit net sales values in the merchant market during the POI.[108] During the POI, the domestic industry's costs were rising, as its unit COGS increased by $*** from 2017 to 2019.[109] By contrast, the domestic industry's commercial sales AUVs increased by $*** from 2017 to 2019.[110] As a result, the domestic industry experienced an overall increase in its COGS to net sales ratio from *** percent in 2017 to *** percent in

[105] CR/PR at Tables IV-5 and C-2. In the total market, the domestic industry lost *** percentage points of market share to the subject imports from 2017 to 2019. CR/PR at Tables IV-4 and C-1. The domestic industry gained a modest *** percentage points in the total market between interim 2019 and interim 2020. *Id.*

[106] CR/PR at V-11 and Tables V-3 to V-5.

[107] CR/PR at V-11 and Tables V-3 to V-5.

[108] CR/PR at Table C-2. The domestic industry's unit COGS in the merchant market increased for its U.S. shipments by *** percent while its unit sales values increased by *** percent from 2017 to 2019. *Id*. This trend was also pronounced in the total market where the domestic industry's unit COGS increased *** percent and unit values increased *** percent. CR/PR at Table C-1.

[109] CR/PR at Table VI-1 and Table VI-3. Unit COGS in the merchant market were $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020. CR/PR at Table VI-3. Unit COGS in the total market were $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020. CR/PR at Table VI-1. The domestic industry's rising COGS reflects increasing raw material, direct labor and other factory costs. CR/PR at Table VI-1. ***. CR/PR at VI-11.

[110] CR/PR at Table VI-3. Net unit sales values in the merchant market were $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020. *Id*. Net unit sales values in the total market followed similar tends. They were $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020. CR/PR at Table VI-1.

2019, an increase of *** percentage points.[111] The cost-price squeeze was especially pronounced between 2017 and 2018 when unit net sales increased by $1.08 while unit COGS increased by $1.33. Thus, the domestic industry was unable to increase its prices sufficiently to cover its increased costs.[112]

These increases in the domestic industry's costs and its ratio of COGS to net sales occurred as apparent consumption increased in each of the full years of the POI and as the volume of low-priced subject imports continued to increase.[113] As shown by documentation provided by Worthington, despite Worthington's need to pass through rising costs, purchasers cited lower subject import prices as negotiating leverage to exert downward pressure on prices and contain any price increases.[114] In light of the evidence showing that the increase in the domestic industry's unit sales value was not enough to cover the absolute increase in unit COGS during a period of significantly increasing apparent U.S. consumption,[115] we find that subject imports, which increased in volume over the POI and were consistently priced lower than the domestic product, prevented price increases, which otherwise would have occurred, to a significant degree.

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[111] CR/PR at Table C-2. The domestic industry's COGS/net sales ratio in the merchant market was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. *Id*. The domestic industry's COGS/net sales ratio in the total market was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at Table C-1.

[112] We note that the domestic industry's costs also increased on an absolute basis overall during the POI, despite a decline in the industry's total quantity of sales. *See* CR/PR at Tables VI-1 and VI-3.

[113] CR/PR at Tables VI-3 and C-2. National argues that ***. National Posthearing Brief at 11. We acknowledge that the typical long-term and annual sales contracts used by Worthington may have limited its ability to increase prices rapidly in response to increases in costs during the POI. *See* CR/PR at V-3 and Table V-2. We find, however, that these types of instruments should not have prevented Worthington from raising prices in response to cost pressures during the entire POI as has happened here. In our view, it was the presence of increasing volumes of low-priced subject imports over the POI that prevented Worthington from increasing its prices in response to rising costs rather than the length of Worthington's sales contracts. *See, e.g.,* Petitioner Posthearing Brief, Exhibit 4 (illustrating pricing pressure on domestic NRSC prices from subject import sources, as discussed above) and CR/PR at V-3 (***).

[114] CR/PR at V-14; *see also, e.g.,* Petitioner Posthearing Brief, Exhibit 4 at paras. 19 (c), 31, and 36(b), and Attachments 12, 24, and 30.

[115] As discussed above, apparent U.S. consumption of NRSCs in the merchant market increased from *** units in 2017 to *** units in 2018 and *** units in 2019, for an increase of *** percent; it was *** units in interim 2019 and *** units in interim 2020. CR/PR at Table C-2. Similarly, apparent U.S. consumption of NRSCs in the total market increased from *** units in 2017 to *** units in 2018 and *** units in 2019, for an increase of *** percent; it was *** units in interim 2019 and interim 2020. CR/PR at Table C-1.

Thus, we find that subject imports undersold the domestic like product to a significant degree, which resulted in lost sales and market share, and that subject imports prevented U.S. price increases which otherwise would have occurred, to a significant degree. Accordingly, we find that the subject imports had significant effects on prices for the domestic like product.

E. Impact of the Subject Imports[116]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[117] 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 debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[118]

The domestic industry's output related indicia declined over the POI and were lower in interim 2020 than in interim 2019, in a market with steadily increasing apparent U.S. consumption.[119] The domestic industry's capacity declined from 2017 to 2019, from *** units

[116] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less than fair value on subject imports from China, Commerce found antidumping duty margins ranging from 74.33 to 93.09 percent for subject NRSC imports from identified exporters and 112.21 percent for the China-Wide Entity. Commerce Final Determination, 86 Fed. Reg. at 15189. We take into account in our analysis the fact that Commerce has made final findings that subject producers in China are selling subject imports in the United States at less than fair value. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[117] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[118] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the TPEA of 2015, Pub. L. 114-27.

[119] Apparent U.S. consumption increased during each of the full years of the POI in both the merchant market and the total market. *See* CR/PR at Tables C-1 and C-2. Apparent U.S. consumption was relatively steady in the total market over the interim periods and was *** percent lower in interim 2020 than in interim 2019 in the merchant market. *Id.*

in 2017 to *** units in 2018 and *** units in 2019.[120] Its production decreased by *** percent from 2017 to 2019, decreasing from *** units in 2017 to *** units in 2018 to *** units in 2019.[121] Its capacity utilization fluctuated over the period, decreasing from *** percent in 2017 to *** percent in 2018, before increasing to *** percent in 2019, for an increase of *** percentage points overall during the period.[122]

The domestic industry's U.S. shipments in the merchant market declined overall by *** percent between 2017 and 2019, decreasing steadily from *** units in 2017 to *** units in 2018 to *** unit in 2019.[123] The industry's end-of-period inventories fluctuated between years but increased overall by *** percent from 2017 to 2019, declining from *** units in 2017 to *** units in 2018, before increasing to *** units in 2019.[124] The domestic industry's share of apparent U.S. consumption in the merchant market declined by *** percentage points from 2017 to 2019, decreasing steadily from *** percent in 2017 to *** percent in 2018 and *** percent in 2019.[125]

The domestic industry's employment-related performance indicia were mixed. Employment,[126] total hours worked,[127] wages paid,[128] and hourly wages[129] increased steadily

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[120] CR/PR at Table C-1. The domestic industry's production capacity was *** units in interim 2019 and interim 2020. *Id*.

[121] CR/PR at Table C-1. The domestic industry's production was *** units in interim 2019 and *** units in interim 2019. *Id*.

[122] CR/PR at Table C-1. The industry's capacity utilization was *** percent in interim 2019 and *** percent in 2020. *Id*.

[123] CR/PR at Table III-5. The industry's U.S. shipments in the merchant market were *** units in interim 2019 and *** units in interim 2020. *Id.* The domestic industry's U.S. shipments in the total market also decreased steadily between 2017 and 2019, decreasing from *** units in 2017 to *** units in 2018 and *** units in 2019; they were *** units in interim 2019 and *** units in interim 2020. CR/PR at Table C-1.

[124] CR/PR at Tables III-6 and C-1. The industry's end-of-period inventories were *** units in interim 2019 and *** units in interim 2020. *Id*.

[125] CR/PR at Table C-2. The industry's share of apparent U.S. consumption in the merchant market was *** percent in interim 2019 and *** percent in interim 2020. *Id*. The domestic industry's share of apparent U.S. consumption in the total market declined by *** percentage points from 2017 to 2019, declining steadily from *** percent in 2017 to *** percent in 2018 to *** percent in 2019, and was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table C-1.

[126] Employment increased by *** percent from 2017 to 2019, increasing from *** production-related workers ("PRWs") in 2017 to *** PRWs in 2018, and *** PRWs in 2019; it was *** PRWs in interim 2019 and *** PRWs in interim 2020. CR/PR at Tables III-7 and C-1.

[127] Total hours worked increased by *** percent from 2017 to 2019, increasing from *** hours in 2017 to *** hours in 2018 to *** hours in 2019; they were *** hours in interim 2019 and *** hours in interim 2020. CR/PR at Tables III-7 and C-1.

from 2017 to 2019. Productivity, however, declined steadily while unit labor costs increased from 2017 to 2019.[130]

Despite rising demand, the domestic industry's financial performance deteriorated from 2017 to 2019. The industry's gross profit in the merchant market declined steadily from 2017 to 2019, for an overall decline of *** percent during the period.[131] The industry's operating income and net income in the merchant market also significantly declined from 2017 to 2019, with an overall decrease of *** percent and *** percent respectively.[132] Similarly, as a ratio to net sales, the domestic industry's operating income and net income margins in the merchant market declined significantly from 2017 to 2019, with both decreasing overall by ***

(…Continued)

[128] Wages paid increased by *** percent from 2017 to 2019, increasing from $*** in 2017 to $*** in 2018 to $*** in 2019; they were $*** in interim 2019 and $*** in interim 2020. CR/PR at Tables III-7 and C-1.

[129] Hourly wages increased by *** percent from 2017 to 2019, increasing from $*** per hour in 2017 to $*** per hour in 2018 to $*** per hour in 2019; they were $*** per hour in interim 2019 and $*** per hour in interim 2020. CR/PR at Tables III-7 and C-1.

[130] Productivity declined by *** percent from 2017 to 2019, decreasing from *** units per hour in 2017 to *** units per hour in 2018 to *** units per hour in 2019; it was *** units per hour in interim 2019 and *** units per hour in interim 2020. Unit labor costs increased by *** percent from 2017 to 2019, increasing from $*** per hour in 2017 to $*** per hour in 2018 to $*** per hour in 2019; they were $*** per hour in interim 2019 and $*** per hour in interim 2020. CR/PR at Tables III-7 and C-1. Worthington reported that the number of PRWs and hours worked increased during the period despite decreasing productivity because of a ***. CR/PR at III-8 and n.17.

[131] CR/PR at Tables VI-3 and C-2. Gross profit in the merchant market was $*** in 2017, $*** in 2018, and $*** in 2019; it was $*** in interim 2019 and $*** in interim 2020. *Id*. Gross profit in the total market followed a similar pattern, and was $*** in 2017, $*** in 2018, and $*** in 2019; it was $*** in interim 2019 and $*** in interim 2020. CR/PR at Tables VI-1 and C-1.

[132] CR/PR at Tables VI-3 and C-2. The industry's operating income in the merchant market declined *** percent from 2017 to 2019, decreasing from $*** in 2017 to $*** in 2018 and $*** in 2019; it was $*** in interim 2019 and $*** in interim 2020. Its net income declined *** percent, decreasing from $*** in 2017 to $*** in 2018 and $*** in 2019; it was $*** in interim 2019 and $*** in interim 2020. *Id*.

The industry's operating income in the total market followed a similar pattern. It declined *** percent from 2017 to 2019, decreasing from $*** in 2017 to $*** in 2018 and $*** in 2019; it was $*** in interim 2019 and $*** in interim 2020. Its net income declined *** percent, decreasing from $*** in 2017 to $*** in 2018 and $*** in 2019; it was $*** in interim 2019 and $*** in interim 2020. CR/PR at Tables VI-1 and C-1.

percentage points.[133] Capital expenditures, however, increased over the period, for an overall increase of *** percent.[134]

Thus, as apparent U.S. consumption increased steadily over the full years of the POI, the domestic industry lost market share to increasing volumes of subject imports that significantly undersold domestic prices. In the merchant market, the domestic industry lost *** percentage points of market share almost entirely to the subject imports.[135] These significant volumes of low-priced subject imports suppressed the industry's prices to a significant degree, resulting in the domestic industry experiencing a cost-price squeeze and declining financial performance. In sum, the domestic industry's output, prices, revenues, and financial performance were worse than they would otherwise have been because of subject imports. We therefore find that subject imports had a significant impact on the domestic industry.

Chinese Respondents and National argue that Worthington made a business decision not to supply NRSCs to competitors in the independent hydrofluorocarbon blender and *** markets.[136] Worthington asserts that it has quoted prices for NRSCs to every blender that requested a quote during the POI with the single exception of a request from *** for a specialty

[133] CR/PR at Tables VI-3 and C-2. As a ratio to net sales, the industry's operating income margin in the merchant market decreased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. Net income as a percentage of net sales decreased from *** percent in 2017 to *** percent and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. *Id*.

In the total market, the industry's operating income margin as a ratio to net sales decreased by *** percentage points from 2017 to 2019, decreasing from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. Net income as a percentage of net sales decreased from 2017 to 2019 by *** percentage points, decreasing from *** percent in 2017 to *** percent and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Tables VI-1 and C-1.

[134] CR/PR at Tables VI-6 and C-1. Capital expenditures increased steadily from 2017 to 2019, increasing from $*** in 2017 to $*** in 2018 and $*** in 2019; they were $*** in interim 2019 and $*** in interim 2020. *Id*. Worthington reported that the increases in capital expenditures over the period reflect ***. CR/PR at VI-13; *see also* Worthington U.S. Producer Questionnaire Response, EDIS Doc. 731102 at III-12b.

[135] We note that the subject imports' market share increase of *** percentage points in the merchant market and *** percentage points in the total market during 2017-2019 came entirely at the expense of the domestic industry and did so with steadily increasing apparent U.S. consumption over that time. *See* CR/PR at Tables C-1 and C-2.

[136] *See, e.g.,* Chinese Respondents Posthearing Brief at 3 and Exhibit 3 (Response to Commission Questions) and National Posthearing Brief at 6-7 and Appendix (Response to Commission Questions) at 3-5.

NRSC, and its inability to offer NRSCs to *** in this instance was only because *** requested a price quote for an R-32 cylinder that was not yet available on the market.[137]

As explained below, we find that the record shows Worthington was willing to supply requesting purchasers with NRSCs and Worthington was actively competing at many of the same accounts as subject imports. The record shows that multiple purchasers reported purchases from both domestic and subject sources during the POI, indicating that Worthington is competing against subject imports at many of the same purchaser accounts, including independent blenders.[138] The record also shows that Worthington ***.[139] With respect to ***, we observe that *** and were instead imports of ***, a product that Worthington produced and sold throughout the POI. [140] In addition, other than the request for the specialty NRSC that Worthington did not yet produce, there is no evidence on the record of any other refusals of Worthington to supply NRSCs requested by ***.[141]

With regard to Chinese Respondents' arguments concerning the *** market, as noted above, Worthington internally consumes NRSCs in the production of downstream products, namely *** NRSCs, and competes with an importer of subject NRSCs (***) in the *** market.[142] Although Chinese Respondents and National argue that Worthington decided not to supply *** with NRSCs due to competition between Worthington and *** in the downstream *** market,[143] Worthington reported that it has no record of a request from *** for a NRSC price quote.[144] Rather, the record shows that *** was reluctant to purchase unfilled NRSCs from Worthington.[145] Regardless of *** rationale for buying subject imports rather than domestic

[137] *See* Petitioner Posthearing Brief, Exhibit 1 (Responses to Commission Questions) at 1-5 and Exhibit 4 (showing Worthington offering to supply various purchasers throughout the POI).

[138] *See* CR/PR at Table V-7.

[139] Petitioner Posthearing Brief at Exhibit 4, Attachment 8.

[140] *See* *** Importer Questionnaire Response, EDIS Doc. 731095 at II-5a and III-3a and *** Importer Questionnaire Response, EDIS Doc. 731098 at III-3a. All of *** reported imports and all of *** reported imports after 2018 were Pricing Product 2. *Id.*

[141] National Posthearing Brief, Appendix (Response to Commission Questions) at 9 and Petitioner Posthearing Brief at 12.

[142] CR/PR at II-15 to II-16.

[143] *See, e.g.,* Chinese Respondents Prehearing Brief at 2-3, 16, 52, and Posthearing Brief, Exhibits 1 and 3 (Responses to Commission Questions).

[144] Petitioner Posthearing Brief at Exhibit 1 at 1-3. We note that ***. *** Revisions to Preliminary Phase Importer Questionnaire Response, EDIS Doc. 708733. Worthington insists, however, that it received no such request. *See* Petitioner Posthearing Brief, Exhibit 1 at 1-3 and Exhibit 4 at para. 33.

[145] CR/PR at II-16; *see also* *** Importer Questionnaire Response, EDIS Doc. 736584 at III-3d (*** market); Chinese Respondents Posthearing Brief at Exhibit 2 (Statement of ***.").

NRSCs, we note that *** imports from China *** from 2018 to 2019, as the volume of subject imports increased by 48.3 percent, and this purchaser therefore was not driving subject import volume trends.[146]

National also argues that it required a second source of NRSC supply after Worthington acquired Amtrol in June 2017 due to an internal policy requiring at least two suppliers for critical inputs and NRSCs are a critical input.[147] National reports that it therefore purchased subject imports simply to satisfy its internal supplier diversity requirement.[148] Yet, National's purchases of subject imports constituted an increasing percentage of its production requirements over the POI so that Worthington became a secondary supplier, which would not be necessary merely to preserve diversity of supply.[149] National further argues that the reason it sources primarily subject imports is due to non-price reasons.[150] Contemporaneous evidence on the record, however, indicates that the reason for National's increasing share of subject import purchasers over the POI was due to price.[151] Therefore National's significant and increasing purchases of subject imports during the POI cannot be explained away by its assertion that a dual-sourcing policy was driving its decision to purchase low priced subject imports in lieu of domestically produced NRSCs.

Chinese Respondents and National also argue that subject imports are not injurious because Worthington's capacity during the POI was overstated and that Worthington actually had insufficient capacity to supply the U.S. market with domestically produced NRSCs.[152]

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[146] *See* *** Importer Questionnaire at II-5a; CR/PR at Table IV-2. *** also reported a lower volume of subject imports in interim 2020 than in interim 2019, while total subject import volume was higher in interim 2020 than in interim 2019. *Id.*

[147] *See* National's Prehearing Brief at 2-5 and Hearing Transcript at 127 (McDevitt) and 125 (Beatty). National asserts that it previously sourced NRSCs only from domestic suppliers (Worthington and Amtrol) and only turned to subject imports from China after Worthington's purchase of Amtrol. It notes that the acquisition reduced its domestic supply options for NRSCs to a single company. *Id*.

[148] *See* National Prehearing Brief at 3-5, and Posthearing Brief at 7-10 and Appendices 2 and 4 (Responses to Commission Questions).

[149] *See* National U.S. Importer Questionnaire Response, EDIS Doc. 731447 at III-3a. National's imports of subject NRSCs show a steady and significant increase in subject imports after Amtrol was acquired by Worthington in June 2017: *** units in 2017; *** units in 2018; and *** units in 2019. *Id*.

[150] *See, e.g.,* National Posthearing Brief at 8-11 and Appendix (Response to Commission Questions 2 and 4).

[151] *See* Worthington Posthearing Brief at Exhibit 4, Attachment 12. ***. *Id*.

[152] *See, e.g.,* Chinese Respondents Prehearing Brief at 15-18 and National Prehearing Brief at 9-10.

National further asserts that Worthington instead had to offer NRSCs *** in 2017.[153] The record indicates, however, that Worthington had additional production capacity during the POI.[154] Moreover, the record shows that Worthington's offer to supply National with NRSCs *** in 2021 did not reflect any inability of Worthington to supply domestically produced NRSCs to National or any other purchaser.[155]

We also have considered the role of other factors so as not to attribute injury from these factors to the subject imports. As noted above, apparent U.S. consumption generally increased during the POI, in both the total and merchant markets, and therefore demand trends do not explain the declines in the domestic industry's performance. In addition, nonsubject imports virtually were nonexistent in the U.S. merchant market during 2017 to 2019.[156] They were present in very small volumes beginning in 2018 and accounted for no more than *** percent of apparent U.S. consumption over the period.[157] Thus, the presence of extremely limited quantities of nonsubject imports in interim 2020 cannot explain the domestic industry's injury during the POI that we have attributed to subject imports from China.

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[153] National Prehearing Brief at 8-9 and Exhibit 11, and Posthearing Brief at 5-7; *see also* Chinese Respondents Posthearing Brief at 3.

[154] CR/PR at III-3 n.5 and Table II-2; Verification Report, EDIS Doc. 739415 (Apr. 6, 2021). Worthington adjusted its capacity and capacity utilization data as requested by the Commission, though it did so only partially. *See* Verification Report, EDIS Doc. 739415 at 5, and Revisions to Worthington U.S. Producer Questionnaire Response, EDIS Doc. 737429. Nevertheless, as discussed above, the record shows Worthington's production declined steadily over the POI. Therefore, the record as a whole indicates that Worthington was capable of increasing production in response to the increases in demand evident over the POI but was prevented from doing so by the presence of increasing volumes of low priced subject imports.

[155] Petitioner Posthearing Brief, Exhibit 4 at Attachment 15. Worthington's offer to supply National with NRSCs from *** in early 2021 does not demonstrate the existence of a supply constraint. The record shows that National sought a large number of NRSCs with a reasonably short delivery time. Worthington explained that it offered to supply initial volumes of NRSCs from *** to reduce lead times for this particular order while it *** for production in the longer term. Petitioner Posthearing Brief at 13, Exhibit 4, paras. 20-22, and Attachments 13, 14, and 15. Thus, while Worthington had the domestic capacity to fulfill National's order, it was seeking to accommodate National's delivery criteria by providing nonsubject NRSCs from Portugal in a shorter timeframe.

[156] *See* CR/PR at Tables C-1 and C-2. U.S. shipments of nonsubject imports were *** units in 2018, *** units in 2019, *** units in interim 2019, and *** units in interim 2020; they accounted for *** percent of total U.S. import quantity of NRSCs in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at II-5 and Table IV-2.

[157] CR/PR at Table C-2. Nonsubject imports' share of the U.S. merchant market was *** percent in 2017, *** percent in 2018, and *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

Accordingly, we find that subject imports had a significant impact on the domestic industry.

VI. Conclusion

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

Part I: Introduction

Background

These investigations result from a petition filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Worthington Industries ("Worthington"), Columbus, Ohio, on March 27, 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 non-refillable steel cylinders ("NRSCs")[1] from China. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
March 27, 2020	Petition filed with Commerce and the Commission; institution of the Commission's investigations (85 FR 18587, April 2, 2020)
April 16, 2020	Commerce's notices of initiation of AD and CVD investigations (85 FR 22402 and 85 FR 22407, April 22, 2020)
May 11, 2020	Commission's preliminary determinations (85 FR 29484, May 15, 2020)
August 28, 2020	Commerce's preliminary CVD determination (85 FR 53323, August 28, 2020)
October 30, 2020	Commerce's preliminary AD determination (85 FR 68852, October 30, 2020); scheduling of final phase of Commission investigations (85 FR 84367, December 28, 2020)
January 22, 2021	Revised scheduling of final phase of Commission investigations (86 FR 7411, January 28, 2021)
March 11, 2021	Commission's hearing
March 22, 2021	Commerce's final affirmative AD and CVD determinations (86 FR 15188 and 86 FR 15192, March 22, 2021)
April 16, 2021	Commission's vote
May 5, 2021	Commission's views

[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] Appendix B presents the witnesses who appeared at the Commission's hearing.

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 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.*

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

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 United States merely because that industry is profitable or because the performance of that industry has recently improved.

Organization of report

Part I of this report presents information on the subject merchandise, subsidy/dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of the U.S. producer. 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

NRSCs are portable, non-refillable steel tanks that are generally used to contain liquefied or compressed gases such as refrigerant or helium, or other materials such as insulating foam sealant or adhesive. The only known U.S. producer of NRSCs is Worthington.[6] Leading producers of NRSCs outside the United States include *** of China. The leading U.S. importers of NRSCs from China are ***. The leading importers of NRSCs from nonsubject sources (***) are ***. U.S. purchasers of NRSCs are generally firms that fill NRSCs with refrigerants or other gases such as helium, foam adhesives, and sealants for sale to HVAC, construction, and retail industries. Of the purchasers that bought NRSCs produced in China, many import the product themselves. Large responding purchasers include ***.

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.
[6] Petition, p. 3; Petitioner's posthearing brief, p. 1

Apparent U.S. consumption of NRSCs totaled approximately *** units ($***) in 2019. U.S. producer Worthington's U.S. shipments of NRSCs totaled *** units ($***) in 2019, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. importers' U.S. shipments from subject sources totaled 3.7 million units ($35.3 million) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. importers' U.S. shipments from nonsubject sources totaled *** units ($***) 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. U.S. industry data are based on the questionnaire response of Worthington, which accounted for 100 percent of U.S. production of NRSCs during 2019. U.S. import data are based on the questionnaire responses of 13 importers that accounted for an estimated *** percent of total imports, *** percent of subject imports, and *** percent of nonsubject imports of NRSCs in 2019.

Previous and related investigations

Commission proceedings

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

Worthington was a petitioner for investigations on steel propane cylinders. As a result of petitions filed on May 22, 2018, by Worthington, Columbus, Ohio, and Manchester Tank and Equipment, Franklin, Tennessee, the Commission instituted antidumping and countervailing duty investigations on steel propane cylinders from China, Taiwan, and Thailand (investigation Nos. 701-TA-607 and 731-TA-1417-1419).[7] On June 18, 2019, Commerce terminated the antidumping investigation on Taiwan.[8] On August 5, 2019, the Commission determined that an industry in the United States was materially injured by reason of imports of steel propane cylinders from China and Thailand, that were found by Commerce to be sold in the United States at less than fair value (''LTFV''), and to be subsidized by the government of China.[9]

[7] 83 FR 24491, May 29, 2018.
[8] 83 FR 29748, June 26, 2018.
[9] 84 FR 39371, August 9, 2019.

Section 301 proceedings

Section 301 of the Trade Act of 1974, as amended ("Trade Act"),[10] authorizes the Office of the U.S. Trade Representative ("USTR"), at the direction of the President, to take appropriate action to respond to a foreign country's unfair trade practices. Following investigations by USTR into "China's acts, policies, and practices related to technology transfer, intellectual property, and innovation," NRSCs were included among the USTR's third enumeration of products from China that became subject to additional duties beginning in September 2018.[11] See the section in this reported entitled "Tariff treatment" for further information on duties related to 301 proceedings.

[10] 19 U.S.C. § 2411.
[11] 83 FR 47974, September 21, 2018.

Nature and extent of subsidies and sales at LTFV

Subsidies

Commerce published notices in the *Federal Register* of its preliminary determination on August 28, 2020, and its final determination on March 22, 2021, of countervailable subsidies for producers and exporters of NRSCs from China.[12] Table I-1 presents Commerce's findings of subsidization of NRSCs in China.

Table I-1
NRSCs: Commerce's subsidy determination with respect to imports from China

Entity	Preliminary countervailable subsidy margin (percent)	Final countervailable subsidy margin (percent)
Ningbo Eagle Machinery & Technology Co., Ltd	25.91	25.91
Wuyi Xilinde Machinery Manufacture Co., Ltd	22.97	18.37
Jiangsu Kasidi Chemical Machinery Co., Ltd	190.67	186.18
Jinhua Sinoblue Machinery Manufacturing Co., Ltd	190.67	186.18
Ningbo Runkey CGA Cylinders Co., Ltd	190.67	186.18
Ninhua Group Co., Ltd	190.67	186.18
Shanghai Ronghua High-Pressure Vessel Co., Ltd	190.67	186.18
Zhejiang Ansheng Mechanical Manufacture Co., Ltd	190.67	186.18
Zhejiang Nof Chemical Co.,Ltd	190.67	186.18
All others	24.11	21.28

Source: 85 FR 53323, August 28, 2020 and 86 FR 15192, March 22, 2021.

[12] 85 FR 53323, August 28, 2020, and 86 FR 15192, March 22, 2021.

Sales at LTFV

Commerce published notices in the *Federal Register* of its preliminary determination on October 30, 2020, and its final determination on March 22, 2021, of sales at LTFV with respect to imports from China.[13] Table I-2 presents Commerce's dumping margins with respect to imports of NRSCs from China.

Table I-2
NRSCs: Commerce's weighted-average LTFV margins with respect to imports from China

Exporter	Producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
Sanjiang Kai Yuan Co. Ltd	Sanjiang Kai Yuan Co. Ltd	95.14	93.09
Wuyi Xilinde Machinery Manufacture Co., Ltd	Wuyi Xilinde Machinery Manufacture Co., Ltd	57.83	74.33
Hangzhou JM Chemical Co., Ltd	Hangzhou JM Chemical Co., Ltd	69.09	79.99
Ningbo Eagle Machinery & Technology Co., Ltd.	Jinhua Sinoblue Machinery Manufacturing Co., Ltd.	69.09	79.99
Zhejiang Kin-Shine Technology Co., Ltd	Zhejiang Kin-Shine Technology Co., Ltd	69.09	79.99
T.T. International Co. Ltd	Wuyi Xilinde Machinery Manufacture Co., Ltd	69.09	79.99
ICOOL International Commerce Limited	ICOOL International Commerce Limited	69.09	79.99
All others		114.58	112.21

Source: 85 FR 68852, October 30, 2020, and 86 FR 15188, March 22, 2021.

[13] 85 FR 68852, October 30, 2020, and 86 FR 15188, March 22, 2021.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[14]

> *The merchandise covered by this investigation is certain seamed (welded or brazed), non-refillable steel cylinders meeting the requirements of, or produced to meet the requirements of, U.S. Department of Transportation (USDOT) Specification 39, TransportCanada Specification 39M, or United Nations pressure receptacle standard ISO 11118 and otherwise meeting the description provided below (non-refillable steel cylinders). The subject non-refillable steel cylinders are portable and range from 300-cubic inch (4.9 liter) water capacity to 1,526-cubic inch (25 liter) water capacity. Subject non-refillable steel cylinders may be imported with or without a valve and/or pressure release device and unfilled at the time of importation. Non-refillable steel cylinders filled with pressurized air otherwise meeting the physical description above are covered by this investigation.*
>
> *Specifically excluded are seamless nonrefillable steel cylinders.*[15]

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is imported under the following provisions of the Harmonized Tariff Schedule of the United States ('HTSUS" or "HTS"): 7311.00.0060 for NRSCs for compressed or liquefied gasses that are certified at the producing plant prior to exportation and 7311.00.0090 for those not so certified prior to exportation. The

[14] 86 FR 15188 and 86 FR 15192, March 22, 2021.

[15] The petition proposed a scope that included both unfilled/empty and filled NRSCs. Commerce, however, initiated these investigations for unfilled NRSCs only, subject to further clarification, as warranted. 85 FR 22402 and 85 FR 22407, April 22, 2020. In the petitioner's postconference brief, it indicated that it would seek to have filled NRSCs included in the scope for any final phase investigations. Petitioner's postconference brief, p. 6. However, in its comments on draft questionnaires, the petitioner noted it was no longer seeking to include filled NRSCs in these investigations and no interested party requested any other substantive change to the scope during Commerce's scope comment period. Petitioners' comments on draft questionnaires, pp. 1-2. Commerce subsequently published preliminary and final scope determinations that only included unfilled NRSCs. 85 FR 53323, August 28, 2020, 85 FR 68852, October 30, 2020; 86 FR 15188 and 86 FR 15192, March 22, 2021.

merchandise may also be imported under HTS statistical reporting numbers 7310.29.0025[16] and 7310.29.0050[17] for steel containers, not closed by either soldering or crimping, for the conveyance of goods. The 2021 general rate of duty is "Free" for HTS subheadings 7311.00.00 and 7310.29.00.[18] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Section 301 tariff treatment

HTS subheadings 7311.00.00 and 7310.29.00 were included in the USTR's third enumeration ("Tranche 3" or "List 3") of products imported from China that became subject to the additional 10 percent ad valorem duties (annexes A and C of 83 FR 47974, as of September 24, 2018) under Section 301 of the Trade Act.[19] Escalation of this duty to 25 percent ad valorem was rescheduled from January 1, 2019 (annex B of 83 FR 47974)[20] to March 2, 2019 (83 FR 65198),[21] but was subsequently postponed until further notice,[22] and then was implemented as of May 10, 2019 (84 FR 20459).[23] A subsequent modification was provided for subject goods exported from China prior to May 10, 2019 not to be subject to the escalated 25 percent duty

[16] HTS statistical reporting number 7310.29.0025 was discontinued as of July 1, 2020, for steel containers, not closed by either soldering or crimping, of circular cross section, with a volume capacity between 11.4 liters and 26.6 liters, for the conveyance of goods; and HTS statistical reporting numbers 7310.29.0020 for refillable stainless steel kegs and 7310.29.0030 for all other steel containers not elsewhere specified or identified ("nesoi") were established as of that same date. HTSUS (2020) Revision 14, USITC Publication 5088, July 2021, "Change Record (Rev. 14)," p. 3. See also: HTSUS (2020) Revision 14, USITC Publication 5088, July 2021, p. 73-25; HTSUS (2020) Revision 13, USITC Publication 5072, June 2021, p. 73-25.

[17] HTS statistical reporting number 7310.29.0050 was discontinued as of July 1, 2020, for steel containers, not closed by either soldering or crimping, of circular cross section, with a volume capacity either less than 11.4 liters or greater than 26.6 liters but less than 50 liters, for the conveyance of goods; and HTS statistical reporting numbers 7310.29.0055 for refillable stainless steel kegs and 7310.29.0065 for all other steel containers nesoi were established as of that same date. HTSUS (2020) Revision 14, USITC Publication 5088, July 2021, "Change Record (Rev. 14)," p. 3. See also: HTSUS (2020) Revision 14, USITC Publication 5088, July 2021, p. 73-25; HTSUS (2020) Revision 13, USITC Publication 5072, June 2021, p. 73-25.

[18] HTSUS (2021) Basic Revision 1, USITC publication 5177, March 2021, pp. 73-25, 73-43.

[19] 83 FR 47974, September 21, 2018.

[20] 83 FR 47974, September 21, 2018.

[21] 83 FR 65918, December 19, 2018.

[22] 84 FR 7966, March 5, 2019.

[23] 84 FR 20459, May 9, 2019.

as long as such goods entered into the United States prior to June 1, 2019 (84 FR 21892).[24] [25] See also U.S. notes 20(e), 20(f), and 20(l) to subchapter III of HTS chapter 99.[26] On February 5, 2020, USTR announced its determination to grant certain product exclusion requests.[27] As of March 17, 2021, no exemptions have been granted for in-scope NRSCs originating in China.[28]

The product

Description and applications

NRSCs are portable, non-reusable steel containers specifically designed to store, transport, and dispense compressed or liquefied gases, or liquid materials for a wide variety of end-use applications. Some common contents and end-uses include: (1) refrigerant gases for refrigeration and air-conditioning applications; (2) helium for inflating retail and commercial balloons; (3) gases for medical and industrial applications; and (4) various liquid chemical mixtures such as foam insulations, sealants, and adhesives for residential and commercial construction applications. Generally, the empty cylinders are sold to customers who fill them with gases or liquid chemical mixtures that are then sold to end users for each specific application.[29] Purchasers of NRSCs did not identify any other products that they would consider as substitutes for these cylinders.[30]

The two-piece welded tank of an NRSC features two ports, for the one-way[31] dispensing valve and pressure-release device, along with a double-handled handling collar on top (table I-3). NRSCs for use in the U.S. market are typically designed to meet the requirements of USDOT Specification 39 ("DOT-39"),[32] which provides the steel specification for the tank body, welding or brazing requirements, wall thickness, markings, testing, and other technical requirements; as

[24] 84 FR 21892, May 15, 2019.

[25] USTR proposed raising this additional duty from 25 percent to 30 percent on such products imported from China, on or after October 1, 2019 (Annex C – (List 3 - $200 Billion Action), Part 1, of 84 FR 46212). 84 FR 46212, September 3, 2019.

[26] HTSUS (2021) Basic Revision 1, USITC publication 5177, March 2021, pp. 99-III-23 – 99-III-24, 99-III-42, 99-III-54, 99-III-241 – 99-III-248.

[27] 85 FR 6674, February 5, 2020.

[28] USITC, "About Harmonized Tariff Schedule," no date, https://www.usitc.gov/harmonized_tariff_information, retrieved March 17, 2021.

[29] Petitioner's postconference brief, exh. 4, Testimony of James R. Bowes, p. 1.

[30] Final phase purchaser questionnaire responses, question III-6.

[31] Petitioner's postconference brief, p. 8.

[32] Petition, exh. GEN-3, DOT Specification 39 (39 C.F.R. § 178.65). Certification to USDOT Specification 39 is typically undertaken in facilities either certified by the USDOT or a USDOT-approved third-party certifying organization.

well as specifying that the cylinders be non-reusable (i.e., non-refillable).[33] Alternatively, to qualify for use in the U.S. market, NRSCs can also be designed to meet the requirements of Transport Canada ("TC") Specification 39M or United Nations pressure receptacle standard International Standards Organization ("UNISO") 11118 for hazardous material packaging. Because Chinese NRSCs must also meet these specifications, they are made with similar if not identical designs.[34] Although the outside of NRSCs can differ in terms of surface finish, handle design, and markings, a hearing witness for National Refrigerants testified that end users consider the cleanliness of interior welds and the valve as the "critical quality" factors for NRSCs.[35]

Table I-3
NRSCs: Appearance, dimensions, and pressure specifications for selected common cylinder sizes

Model	7.5 inch	9.5 inch	12 inch
Appearance			
Dimensions:			
Height (inches)	14.6	16.4	17.6
Water capacity (pounds)	15.8	29.7	49.6
Diameter (inches)	7.5	9.5	12
Volume (cubic inches)	438	822	1,378
Standard specification:			
Service pressure (PSIG)	260	260	260
Test pressure (PSIG)	325	325	325
Optional specification:			
Service pressure (PSIG)	400	320 or 400	320
Test pressure (PSIG)	500	400 or 500	400

Note.--Pressure is specified as "pounds per square-inch gauge" ("PSIG").

Source: Petition, exh. GEN-4, Certain Non-Refillable Steel Cylinders Brochures (Worthington Industries).

[33] Petitioner's postconference brief, exh. 3, Testimony of Wayne L. Powers, p. 1.
[34] Petitioner's postconference brief, exh. 3, Testimony of Powers, p. 3; hearing transcript, pp. 8 (Rosenthal), 26 (Powers).
[35] Hearing transcript, pp. 156 to 157 (McDevitt).

NRSCs range in size from 300 cubic inches to 1,526 cubic inches of water capacity. Common NRSC sizes by diameter are 7.5 inch (438 cubic inches of water capacity), 9 inch (739 cubic inches), 9.5 inch (822 cubic inches), and 12 inch (1,378 cubic inches), although they are also available in other sizes. The 9.5-inch (822 cubic inches) cylinder is the most commonly available size both in the United States and worldwide.[36] ***.[37] [38] The smaller 7.5-inch cylinder is considered an economical size for holding refrigerant R-1234yf, due to the small charge size for automotive air-conditioning systems and the high cost of this refrigerant. The 7.5-inch cylinder can also hold refrigerant gas R-402B for charging ice-making machines.[39] NRSCs are produced to meet the service pressure ratings required for the gaseous or liquid content,[40] with common service-pressure ratings for in-scope NRSCs of 260, 320, and 400 pounds per square inch ("PSI").[41] NRSCs for certain end-use applications are distinguished by a dip (withdrawal) tube fitted internally to the dispensing valve,[42] which increases the price of

[36] Petitioner's postconference brief, exh. 1, Answers to ITC Staff Questions, p. 12; exh. 2, Testimony of Bowes, p. 6.

[37] ***. Petitioner's postconference brief, exh. 1, Answers to ITC Staff Questions, pp. 1 to 2; exh. 2, Testimony of Bowes, p. 6.

[38] The larger 12-inch diameter NRSC previously held the mostly widely available refrigerant gas R-22, that was phased out as an ozone-depleting gas. Demand for the 12-inch NRSC for R-22 has been declining over time and is now "extremely low." National Refrigerants' postconference brief, pp. 2 to 3.

[39] National Refrigerants' postconference brief, p. 3.

[40] Petitioner's postconference brief, exh. 3, Testimony of Powers, p. 2.

[41] Depending on the type of refrigerant gas, the required cylinder pressure rating can be either 260, 320, or 400 psi. Helium typically requires a pressure rating of 260 psi, while foam and adhesive mixtures generally require a pressure rating of 400 psi. Petitioner's postconference brief, p. 13.

[42] A dip tube is fitted internally to the dispensing valve and extends down into the center of the cylinder body to draw out the pressurized liquid contents through the valve. Linde plc, "HiQ Glossary, Dip Tube," ©2021, http://hiq.linde-gas.com/en/glossary/d/dip_tube/index.html, retrieved March 23, 2021.

these type of NRSCs.[43] The subject NRSCs can be imported either with or without a dispensing valve, pressure-release device, or both.[44]

These physical characteristics distinguish NRSCs from refillable cylinders (not allowed by the DOT-39 specification), such as those for propane gas with sturdy handling collars, foot rings, and two-way valves;[45] smaller "hand torch" non-refillable cylinders (containing propane, propylene, or butane) having elongated bodies and only one port; aluminum cylinders for reactive gasses (e.g., ammonia, ethylene oxide, hydrogen sulfide, nitric oxide, nitrogen dioxide, or sulfur dioxide); or seamless, higher pressure steel cylinders for industrial and medical gasses (e.g., argon, nitrogen, or oxygen).[46]

Manufacturing processes

According to the petitioner and respondent National Refrigerants, a U.S. importer of the subject merchandise, both domestically produced and imported NRSCs are manufactured by similar processes to meet the same technical specifications required for the U.S. market.[47] The petitioner's NRSC manufacturing capabilities are ***.[48]

[43] Hearing transcript, p. 65 (Bowes).

More specifically, NRSCs for ***. Petitioners' posthearing brief, pp. 62 to 63; exh. 4, Declaration of James R. Bowes, para. 39.

[44] According to the petitioner, it is not common for NRSCs to be produced or imported without a dispensing valve and pressure-release device, but it is possible to import the components and complete the cylinder in the United States. Petitioner's postconference brief, exh. 1, Answers to ITC Staff Questions, p. 4.

[45] Petitioner's postconference brief, p. 9.

[46] Petition, p. 13; exh. GEN-3, DOT Specification 39 (39 C.F.R. § 178.65); Petitioner's postconference brief, p. 10; exh. 3, Testimony of Power, p. 2.

[47] Petitioner's postconference brief, exh. 1, Answers to ITC Staff Questions, p. 1; National Refrigerants' postconference brief, p. 1.

[48] Likewise, at other Worthington facilities that produce various types of steel and non-steel metallic refillable and disposable cylinders, ***. Worthington final phase producer questionnaire, question II-4b.

The subject producers did not provide narrative responses to question II-4b of the final phase foreign producer questionnaire.

NRSCs are produced using low-carbon, flat-rolled (usually cold-rolled) steel.[49] First, a collar press stamps the handling collar from cut-to-length strips of steel. Next, round disks of steel are press cut from flat-rolled steel coils. These circular disks are then drawn through a die to create cup-shaped hemispheric shells that become the top and bottom halves of the cylinder. The shell edges are trimmed to produce a precise line for welding and then holes are punched into the top shell for the dispensing valve and pressure-release device.[50] The shells are then washed to remove any grit or particles that might impede painting or welding. The pressure-release device is added to the top shell prior to both the top and bottom cylinder shells being conveyed to a welding station where the valve and handling collar are welded onto the top half of the cylinder (figure I-1a).[51] The two shells are then cooled prior to being placed together into the welding lathe, which creates a precise weld between them to bond the two pieces together (figure I-1b). Each cylinder is tested to ensure it meets government specifications, including a dry-air leak test to ensure that the tank can be filled and pressurized without either leaking or rupturing.[52]

[49] For the maximum contents of carbon, phosphorous, sulfur, and manganese specified by each of these standards, see Petitioner's postconference brief, exh. 1, Answers to ITC Staff Questions, p. 2; exh. 2, Testimony of Bowes, p. 5.

[50] The subject product from China includes a reusable screw-on cap to cover the valve outlet while the U.S. supplier only provides a push-on dust cap. According to National Refrigerants, the valve outlet is the most common cause of a defect for NRSCs. National Refrigerants' postconference brief, pp. 1 to 2.

According to the petitioner, physical defects to the valve outlet, such as burrs, weld slag, or other debris, can be serious, but are extremely infrequent. ***. Petitioner's postconference brief, p. 16; exh. 2, Testimony of Bowes, p. 4.

[51] Petitioner's postconference brief, exh. 3, Testimony of Powers, p. 3.

[52] To the best of the petitioner's knowledge, all imported NRSCs certified to meet the USDOT-39 specification must be tested by the manufacturer prior to shipment. For the specific test requirements to meet USDOT-39 specifications, see: Petitioner's postconference brief, exh. 1, Answers to ITC Staff Questions, pp. 2 to 3; exh. 2, Testimony of Bowes, p. 5.

Figure I-1
NRSCs: Cross sections of an assembled cylinder and the weld-joint detail

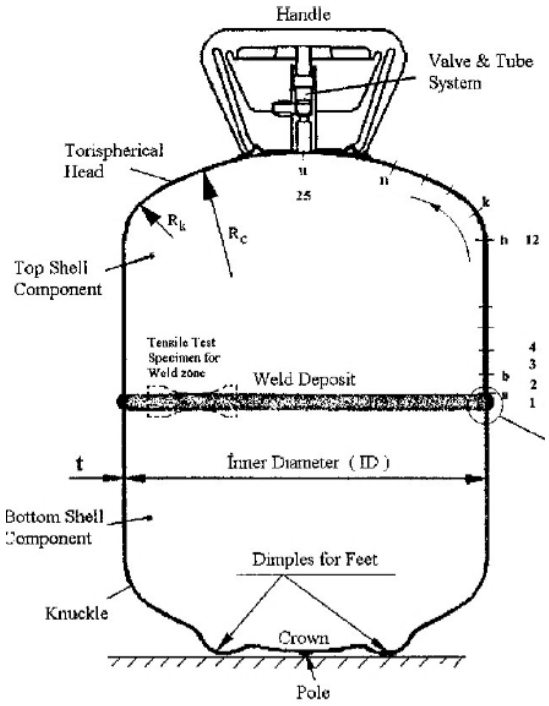


Figure I-1a: Cylinder cross-section with components and features labeled

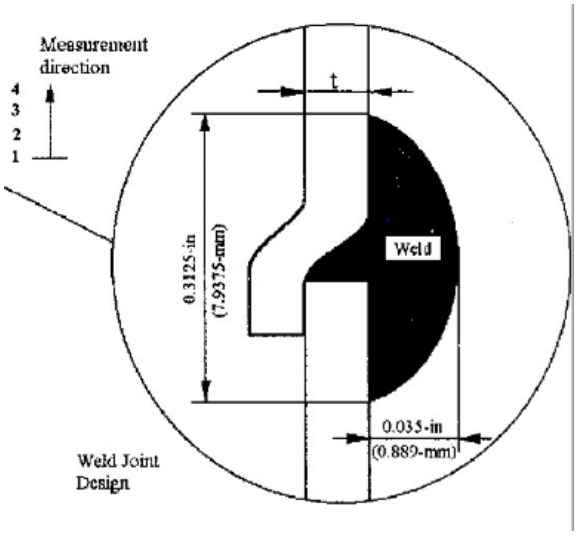


Figure I-1b: Weld-joint cross-section for joining together the top and bottom shells

Source: Petition, exh. GEN-5, Certain Non-Refillable Steel Cylinder Parts Drawing.

Cylinders that pass inspections move on to the painting line, where they are coated with a liquid paint that is cured under infrared light.[53] Prior to January 2020, the paint color was selected to indicate the gas content of the cylinder according to industry standards or for aesthetic appeal. As of January 2020, the Air-Conditioning, Heating, and Refrigeration Institute ("ACHRI") guideline now recommends that all NRSCs containing refrigerant gas be painted the same standard gray-green color.[54] A silkscreened label is added to the cylinder with required identifying information, including the (USDOT, TC, or UNISO) specification number, service pressure, test pressure, manufacturer's registration number, date of manufacture and/or lot

[53] Petition, p. 6; Petitioner's postconference brief, p. 8. National Refrigerants claims that the U.S. producer uses powder-coat and lead-free paint on its cylinders while those originating in China use a low-volatile organic compound/aqueous paint. According to National Refrigerants' estimates, powder coating is a more expensive process, requiring twice the energy, but does not necessarily produce a discernably higher quality product. National Refrigerants' postconference brief, p. 1.

[54] Prior to January 1, 2020, the AHRI required specific cylinder colors for ready identification of specific refrigerant gases. After that date, AHRI's "Guideline N, Assignment of Refrigerant Container Colors" requires all refrigerant cylinders are to be painted a gray-green color (designated as "RAL 7044"). Petitioner's postconference brief, exh. 3, Testimony of Powers, p. 3.

number, operating instructions, and specific penalty language against refilling the cylinder in violation of federal law.[55] NRSCs typically are packaged in an unsealed cardboard carton specified by the customer.[56] These cartons are purchased by the purchasers of NRSCs from corrugated-cardboard suppliers and shipped directly to the NRSC producer's facilities.[57] The customer later fills the cylinders while in the carton and finally seals the box prior to shipment.

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. No party requested data collection for a like product analysis in their comments on draft final phase questionnaires and no domestic like product issues were raised during the hearing or in party briefs.[58]

[55] Petitioner's postconference brief, exh. 3, Testimony of Powers, p. 3.

The petitioner's cylinders also include a "Stamp of Authenticity" along with more printing and additional markings on the collar and valve to identify its cylinders. National Refrigerants' postconference brief, p. 1.

[56] To the best of the petitioner's knowledge, ***. Petitioner's postconference brief, exh. 1, Answers to Staff Questions, p. 4; exh. 2, Testimony of Bowes, p. 4.

[57] Petitioner's postconference brief, exh. 1, Answers to Staff Questions, p. 5.

[58] Chinese respondents accept a single domestic like product, coextensive with the scope, however, they believe that the Commission should recognize that there exist significant differences in competitive conditions between NRSCs designed/produced/used with helium and other NRSCs. Chinese respondents' prehearing brief, pp. 9-10.

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

U.S. market characteristics

NRSCs are portable, non-refillable steel tanks that can hold liquified or compressed gases. NRSCs can contain a range of materials for a variety of end uses including gases for refrigeration and air conditioning applications, helium for balloons for retail or commercial use, gases for medical and industrial applications, and other materials such as foam insulation and sealant in residential and commercial sectors.[1] Petitioner stated that demand for NRSCs follows the strength of the U.S. economy.[2] Importers primarily fill NRSCs with gas or sealant and sell the NRSCs with their contents to their customers.

U.S. apparent consumption of NRSCs increased during 2017-19. Overall, U.S. apparent consumption in 2019 was *** percent higher than in 2017, by quantity, and U.S. apparent consumption was *** in January-September 2020 *** in January-September 2019.

Impact of section 301 tariffs

NRSCs subject to these investigations have been subject to section 301 tariffs. U.S. producer Worthington reported that section 301 tariffs *** impact on the NRSC market. *** importers and two purchasers reported that the section 301 tariffs had an impact on the NRSC market; *** importers and three purchasers reported that they did not.[3]

As shown in table II-1, the U.S. producer reported that the section 301 tariffs ***, although it did report that supply of NRSCs from China ***.[4] U.S. importers and purchasers reported that section 301 tariffs resulted in either constant or fluctuating supply from all sources. *** responding importers and all responding purchasers reported that there was no impact on U.S. demand. Worthington reported that prices had *** and raw material costs *** as a result of the section 301 tariffs. Responding importers and purchasers were almost evenly split regarding the impact of 301 tariffs on prices, reporting that prices had either increased or

[1] Petition, pp. 4-5; Petitioner's postconference brief, p. 13 and Answers to Staff Questions, pp. 7-8.

[2] Petitioner's postconference brief, Answers to Staff Questions, p. 8.

[3] *** importers and six purchasers reported that they did not know if the section 301 tariffs affected the market.

[4] Worthington reported that ***.

remained unchanged, and most responding importers and purchasers reported that section 301 tariffs did not affect raw material costs.

Table II-1
NRSC: Impact of section 301 tariffs

Country pair	U.S. producers				U.S. importers				U.S. purchasers			
	Increased	No change	Decreased	Fluctuated	Increased	No change	Decreased	Fluctuated	Increased	No change	Decreased	Fluctuated
U.S. supply	***	***	***	***	---	3	---	3	---	2	---	2
China supply	***	***	***	***	---	3	---	3	---	2	---	2
Other country supply	***	***	***	***	---	3	---	3	---	2	---	2
Prices	***	***	***	***	4	3	---	1	2	2	---	---
U.S. demand	***	***	***	***	---	6	---	---	---	4	---	---
Raw material costs	***	***	***	***	---	4	---	---	---	2	---	1

Note: For further discussion of the impact of the section 301 tariffs on prices and raw material costs, please see *Part V: Pricing data.*

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

U.S. purchasers

The Commission received 11 usable questionnaire responses from firms that had purchased NRSCs during January 2017-September 2020.[5] [6] Nine responding purchasers are refrigerants fillers, two are other types of fillers (***), and one firm ***. In general, responding U.S. purchasers were located in the South and Northeast. The responding purchasers represented firms in a variety of domestic industries, including HVAC, construction, and retail. Large purchasers of NRSCs include ***.[7]

[5] The following firms provided purchaser questionnaire responses: ***. *** also submitted importer questionnaires.

[6] Of the 11 responding purchasers, 8 purchased the domestic NRSCs, 7 purchased imports of NRSCs from China, and 2 purchased imports of NRSCs from other sources. These responding purchasers reported decreasing purchases of domestically produced NRSCs (*** percent of total reported purchases/imports in 2017 and *** percent in 2019) and increasing purchases or imports of Chinese NRSCs (from *** percent of total reported purchases/imports in 2017 to *** percent in 2019).

[7] *** are also importers.

Channels of distribution

Worthington sold ***. Importers sold mainly to end users but also sold an increasing amount of NRSCs to distributors and retailers, as shown in table II-2.

Table II-2
NRSCs: U.S. producers' and importers' U.S. shipments, by sources and channels of distribution, January 2017-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Share of U.S. shipments (percent)				
U.S. producers: to Distributors/retailers	***	***	***	***	***
to Fillers/end users	***	***	***	***	***
U.S. importers: China to Distributors/retailers	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Nonsubject to Distributors/retailers	***	***	***	***	***
to Fillers/end users	***	***	***	***	***
U.S. importers: All sources: to Distributors/retailers	***	***	***	***	***
to Fillers/end users	***	***	***	***	***

Note: Distributors/retailers are firms that resell the cylinder in the same format, i.e., unfilled as purchased (i.e., firms were not to include sales to gas distributors that fill unfilled cylinders as distributors); gas distributor companies are classified as end users).
Note: The shipments of imports from nonsubject sources to *** in January-September 2020 are driven by importer *** imports from ***. *** did not import from nonsubject sources in any other period.

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

Geographic distribution

Worthington reported selling NRSCs to ***. For the U.S. producer, *** percent of sales were within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. ***.[8] ***.

[8] ***.

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding NRSCs from the U.S. producer and China.

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

	Capacity (1,000 units)		Capacity utilization (percent)		Inventories as a ratio to total shipments (percent)		Shipments by market in 2019 (percent)		Able to shift to alternate products
Item	2017	2019	2017	2019	2017	2019	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States	***	***	***	***	***	***	***	***	***
China	***	***	***	***	***	***	***	***	0 of 6

Note: Responding U.S. producer accounted for all of U.S. production of NRSCs in 2019. Responding foreign producer/exporter firms accounted for more than 75 percent of U.S. imports of NRSCs 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 each subject country, 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, the U.S. producer of NRSCs has the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced NRSCs to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, *** available inventories, and ***. Factors mitigating responsiveness of supply include a limited ability to shift shipments from alternate markets. Both capacity and production decreased during 2017-19, and capacity utilization remained relatively stable. Worthington reported *** exports to ***.

Subject imports from China

Based on available information, producers of NRSCs from China have the ability to respond to changes in demand with large changes in the quantity of shipments of NRSCs to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the magnitude of the existing capacity of Chinese producers, and an ability to shift large quantities

from alternate markets. Factors mitigating responsiveness of supply include limited availability of unused capacity, and an inability to shift production to or from alternate products.

Both Chinese capacity and production increased between 2017 and 2019, although production increased more rapidly than capacity, leading to increased capacity utilization rates. Reported non-U.S. markets included Europe, Southeast Asia, South America, and North Africa.

Imports from nonsubject sources

Nonsubject imports accounted for *** percent of total U.S. imports in 2019.

Supply constraints

U.S. producer Worthington reported that it ***. *** of 11 responding importers reported that they had not declined any orders from their customers. Importers *** reported that Worthington's lead times are inconsistent, and *** reported that Worthington's lead times increased "significantly" since the Worthington/Amtrol merger in 2017. Four of 11 purchasers reported that a supplier had declined or refused to supply them NRSCs. Purchasers (***) reported that the U.S. producer of NRSCs will not sell ***. Purchaser *** reported that Worthington was unable to supply it during 2018-19, and that in many cases, Worthington requires detailed demand forecasts and if *** needs exceeds those forecasts, *** has "no choice" but to import from China.

Petitioner Worthington stated that it has not declined to sell NRSCs to any firm that directly competes with it,[9] but that it had declined to quote for an inquiry for packaging for R-32 in early 2019 because it did was not able to produce that product. However, Worthington stated that, as of late 2020, it is now able to supply the product.[10] Additionally, Worthington argued that despite the closure of the West Warwick (former Amtrol) production line, it is still able to supply the entire market, and it has not turned customers away as a result of constrained supply.[11]

[9] Petitioner posthearing brief, Answers to Commissioners' Questions, pp. 1-3.

[10] Hearing transcript, pp. 49, 71, 88-89 (Bowes, Powers); Petitioner posthearing brief, Answers to Commissioners' Questions, pp. 20-21.

[11] Petitioner posthearing brief, p. 11 and fn. 15.

New suppliers

Ten of 11 purchasers indicated that there had been no new suppliers entered the U.S. market since January 1, 2017. One purchaser (***) cited a new Chinese supplier, Zhejiang Sinoblue Machinery Manufacture Ltd.

U.S. demand

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

End uses and cost share

U.S. demand for NRSCs depends on the demand for the products that fill NRSCs, such as refrigerants, helium, and foam adhesives. Reported end uses include applications such as in HVAC systems and construction. NRSCs accounts for a small to moderate share of the cost of the end-use products in which they are used. Reported cost shares for some end uses were as follows: [12]

- *** (*** percent)
- Helium tanks (*** percent)
- Refrigerant test kits (*** percent)
- Adhesives (*** percent)
- *** (24 percent)
- Refrigerants (12-22 percent)
- HVAC systems (5 percent)
- Construction applications (*** percent)

Business cycles

U.S. producer Worthington reported that NRSCs ***. Six of 13 importers, and 3 of 11 purchasers indicated

[12] Helium storage was listed as an end use during the preliminary phase, which included filled cylinders in the scope, and accounted for 50-60 percent of the total cost. *Non-Refillable Steel Cylinders from China, Investigation Nos. 701-Ta-644 and 731-TA-1494 (Preliminary),* Publication 5057, May 2020, p. II-6.

that the market was subject to business cycles or distinctive conditions of competition. Specifically, demand for refrigerants increases in the spring and summer, and importer *** reported that prices are lower during the winter. Importer *** reported that there is some seasonality to the ***, occurring during the summer. Importer (and purchaser) *** reported that regulations restricting the use of certain refrigerants is a distinct condition of competition in the NRSC market, and several importers reported that the merger of Amtrol and Worthington was a change in the conditions of competition that resulted in higher prices and shuttered production facilities.

Demand trends

Most firms reported no changes in U.S. demand for NRSCs since January 1, 2017 (table II-4). U.S. producer Worthington reported that demand ***. Half of responding purchasers (5 of 10) reported that there had also been no change in demand for end uses of NRSCs, and four purchasers reported that demand had either increased or fluctuated. Seven purchasers also cited decreased demand during shutdowns in the spring of 2020.[13]

Table II-4
NRSCs: Firms' responses regarding U.S. demand and demand outside the United States

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Demand inside the United States: U.S. producers	***	***	***	***
Importers	1	6	1	---
Purchasers	2	5	1	2
Demand outside the United States: U.S. producers	***	***	***	***
Importers	2	4	---	---
Purchasers	2	4	---	1
Demand for end use product(s): Purchasers	4	4	---	3

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

Worthington stated that the demand for *** has been relatively flat, and that demand for refrigerant also remained strong during the early months of the COVID-19 pandemic, particularly because most purchasers of NRSCs are involved in essential industries, but also noted that even industries that were initially impacted, such as building construction,

[13] These explanations were in response to a question regarding how COVID-19 had impacted domestic purchasing requirements (Purchaser Questionnaire, III-9b).

recovered by the end of 2020.[14] National Refrigerants also stated that it experienced a brief decline in demand during the initial months of the COVID-19 pandemic but that a majority of the industry serves critical infrastructure such as supermarket refrigeration, air conditioning, hospitals, and now the safe storage and distribution of vaccines.[15]

Respondents argued that the Commission's split determination in the HFC blends order resulted in decreasing imports of HFC blends and increasing imports of HFC components, thereby increasing the demand for NRSCs in the United States.[16]

Substitute products

Substitutes for NRSCs are limited. *** most importers (9 of 10), and all purchasers reported that there are no substitutes for NRSCs.[17] The sole importer that reported a substitute (***) reported that refillable cylinders can act as a substitute, but there is no market for these in the United States.

Substitutability issues

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

Lead times

NRSCs are primarily sold from inventories. Worthington reported that *** percent of its commercial shipments were sold from inventory, with lead times averaging *** days. The remaining *** percent of its commercial shipments were produced-to-order, with lead times of *** days. Petitioner Worthington stated that it had to push out lead times by a couple of weeks due to COVID-related staffing issues, but that these issues are largely resolved now.[18] National Refrigerants stated that after Worthington acquired Amtrol, lead times grew from one

[14] Hearing transcript, pp. 97, 109-110 (Bowes, Powers).
[15] Hearing transcript, p. 199 (Beatty).
[16] Chinese respondents' posthearing brief, Answers to Commissioner Questions, pp. 26-27; National Refrigerants' posthearing brief, Answers to Commissioner Questions, pp. 1-4.
[17] Hearing transcript, p. 123 (Beatty).
[18] Hearing transcript, p. 28 (Powers).

week to four weeks in September 2020, and then to six weeks in March 2021. It added that imports of Chinese NRSCs also have a lead time of approximately six weeks, so there is no lead time advantage for U.S.-produced NRSCs.[19] [20]

Knowledge of country sources

Nine purchasers indicated they had marketing/pricing knowledge of domestic product, six of Chinese product, and three of product from nonsubject country, India.

As shown in table II-5, most purchasers and their customers sometimes or never make their purchasing decisions based on the producer and most purchasers and their customers never make purchasing decisions based on country of origin. Purchaser *** (which sources exclusively from ***) reported that it always makes its purchasing decisions based on country-of-origin because of logistics, lead times, and ease of doing business.

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

Decision	Always	Usually	Sometimes	Never
Purchases based on producer:				
Purchaser's decision	1	2	3	5
Purchaser's customer's decision	2	---	3	5
Purchases based on country of origin:				
Purchaser's decision	---	---	---	7
Purchaser's customer's decision	---	---	1	6

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

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for NRSCs were quality (9 firms), price/cost (8 firms), and availability/reliability (8 firms) as shown in table II-6. Quality was the most frequently cited first-most important factor (cited by 6 firms), followed by price/cost (4 firms); availability/reliability was the most frequently reported second-most important factor (5 firms); and delivery/lead time was the most frequently reported third-most important factor (6 firms). Respondent National Refrigerants stated that

[19] Hearing transcript, pp. 164-166, 198 (McDevitt, Beatty); National Refrigerants posthearing brief, Answers to Commissioner Questions, pp. 31-32.

[20] Worthington argued that because National Refrigerants did not renew its contracts with Worthington in 2017, it lost preferential lead times. Petitioner posthearing brief, p. 13.

security and consistency of quality NRSCs is more important than price, and that it has experienced a decline in the quality of U.S.-produced NRSCs.[21]

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

Item	1st	2nd	3rd	Total
	Number of firms (number)			
Quality	6	3	---	9
Availability/Reliability	3	5	---	8
Price/Cost	4	1	3	8
Delivery terms/lead time	---	---	6	6
All other factors	---	1	1	NA

Note: Other factors include diversity of supply and technical support.
Note: Purchasers defined quality as meeting the specifications of the product, DOT certification, overall performance, ease of handling and filling, integrity, appearance, defect rate, consistency of valve thread quality, quality of paint/no rust, quality of carton and graphics on carton, interior clean, dry, and free of loose particulates, and proper cap placement on valve outlet.
Note: Purchaser *** reported that quality, cost, and reliability were all equally important. These three factors have all been tabulated in the 1st category.

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

Half of responding purchasers (5 of 10) reported that they only sometimes purchase the lowest-priced product. Three purchasers reported that they usually make purchasing decisions based on price, and two reported that they never make purchasing decisions based on price.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-7). The factors rated as very important by more than half of responding purchasers were quality meets industry standards and reliability of supply (11 each), product consistency (10), delivery time and availability (8 each), and delivery terms and price (6 each).

[21] Hearing transcript, pp. 127, 157 (McDevitt).

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

Factor	Number of firms reporting		
	Very	Somewhat	Not
Availability*	8	3	---
Delivery terms*	6	4	1
Delivery time*	8	1	2
Discounts offered	---	7	4
Minimum quantity requirements	---	4	7
Packaging	1	7	3
Payment terms	3	5	3
Price*	6	5	---
Product consistency*	10	1	---
Product range	2	5	4
Quality meets industry standards*	11	---	---
Quality exceeds industry standards	---	11	---
Reliability of supply*	11	---	---
Technical support/service	5	4	2
U.S. transportation costs	3	4	4

Note: Factors that are considered "very important" by most purchasers are marked with an asterisk (*).

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

Supplier certification

Six of 11 responding purchasers require their suppliers to become certified or qualified to sell NRSCs to them. Purchasers reported that the time to qualify a new supplier ranged from 60 to 180 days. Qualification processes included sampling of the product, on-site inspections, audits of financials and customer references, safety and compliance reviews, scale-up testing, and notification and approval by customers, and various third-party certifications. Purchasers *** reported that new suppliers must be DOT-39 certified. All 11 purchasers reported that no supplier had failed in its attempt to qualify NRSCs or had lost its approved status since 2017.

Respondent National Refrigerants stated that ***.[22]

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2017 (table II-8). Two purchasers reported increased purchases of NRSCs from the

[22] National Refrigerants' posthearing brief, Answers to Commissioner Questions, p. 48.

United States because market demand increased. Respondent and purchaser National Refrigerants reported that after Worthington acquired Amtrol, it was forced to diversify suppliers outside of the United States, and it cannot package its refrigerant blends in ready-to-sell form for sale through its North American distribution network without NRSCs.[23] Purchaser *** reported that its purchases fluctuated as prices to fill NRSCs in the United States as the cost to purchase finished goods from abroad changed. Eight of 11 responding purchasers reported that they had not changed suppliers since January 1, 2017. Two firms reported changing suppliers due to Worthington's acquisition of Amtrol, with one increasing its purchases from Worthington and the other shifting to other suppliers to diversify.

Table II-8
NRSCs: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	1	1	2	4	3
China	3	1	1	3	1
All other sources	3	---	1	3	1
Sources unknown	5	---	---	2	---

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

Importance of purchasing domestic product

Seven of 11 purchasers reported that none of their purchases required purchasing U.S.-produced product. Purchaser *** reported that most of its purchases did not have any domestic requirements, but that 30 percent of its purchases were domestic for strategic reasons. Purchaser *** reported that all of its purchases were required by law to be domestic product, and purchaser *** reported that all of its purchases were subject to strong preference for domestic product.

When asked if the COVID-19 pandemic affected their or their customers' domestic product requirements, 7 of 11 purchasers reported that it had. Most explanations cited decreased demand during shutdowns in spring of 2020.

Six of 11 purchasers reported that their customers did not have country preferences. Three purchasers preferred Chinese produced NRSCs: *** reported that NRSCs form China have the most consistent quality and lowest defect rate, and *** reported a preference for Chinese NRSCs because of price. Two purchasers reported a preference for U.S.-produced NRSCs. *** reported that it purchases all DOT-certified cylinders from the United States; *** reported that its purchases from Worthington

[23] National Refrigerants' posthearing brief, p. 7.

have been driven by product attributes, and *** reported that it prefers to purchase U.S.-produced NRSCs.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing NRSCs produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table II-9) for which they were asked to rate the importance.[24] Purchasers rated U.S.-produced NRSCs and Chinese NRSCs as comparable for all but three factors. The United States was ranked as inferior to China for availability (rated as very important by 8 of 11 purchasers in table II-7). Regarding price (rated as very important by 6 of 11 purchasers) and quality exceeds industry standards, equal numbers of purchasers reported that the United States and China were comparable or that the U.S.-produced NRSCs were inferior to Chinese product.

Most purchasers reported that U.S. and nonsubject NRSCs were comparable for all but five factors.[25] Three purchasers compared NRSCs from China with those from nonsubject sources and reported that, for most factors, NRSCs from these sources were comparable in all by six factors.[26] However, Chinese produced NRSCs were superior in terms of availability, delivery terms, delivery time, payment terms, price, and reliability of supply.

[24] Worthington argued that purchaser responses from *** should be consolidated into one response, as should purchaser responses from *** because of affiliations. It noted that this adjustment would show that *** purchasers rated domestic product inferior to subject imports in availability. Petitioner posthearing brief, Answers to Commissioners' Questions, p. 19.

[25] Most responding purchasers reported that U.S.-produced NRSCs were superior to NRSCs from nonsubject sources in delivery terms, payment terms, and product range; most responding purchasers reported that U.S.-produced NRSCs were inferior in product consistence and quality exceeds industry standards.

[26] Most responding purchasers reported that Chinese NRSCs were superior to those from nonsubject sources in availability, delivery terms, delivery time, payment terms, price, and reliability of supply.

Table II-9
NRSCs: Purchasers' comparisons between U.S.-produced and imported product

Factor	Number of firms reporting								
	United States vs. China			United States vs. Nonsubject			China vs. Nonsubject sources		
	S	C	I	S	C	I	S	C	I
Availability*	1	2	4	---	3	---	2	1	---
Delivery terms*	1	6	---	2	1	---	2	1	---
Delivery time*	1	6	---	---	3	---	2	1	---
Discounts offered	---	5	1	---	3	---	---	3	---
Minimum quantity requirements	---	7	---	---	3	---	---	3	---
Packaging	2	5	---	1	2	---	---	3	---
Payment terms	1	4	2	3	---	---	2	1	---
Price*	1	3	3	---	2	1	2	1	---
Product consistency*	---	4	2	---	1	2	---	3	---
Product range	3	4	---	2	1	---	---	3	---
Quality meets industry standards*	---	5	1	---	2	1	---	3	---
Quality exceeds industry standards	---	3	3	---	---	3	1	2	---
Reliability of supply*	---	4	2	---	3	---	3	---	---
Technical support/service	2	5	---	---	3	---	---	3	---
U.S. transportation costs	1	5	1	---	2	1	---	3	---

Note: A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.
Note: An asterisk (*) indicates that the factor was ranked as very important by more than half of responding purchasers in table II-7.
Note: S=first listed country's product is superior; C=both countries' products are comparable; I=first list country's product is inferior.

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

Comparison of U.S.-produced and imported NRSCs

In order to determine whether U.S.-produced NRSCs can generally be used in the same applications as imports from China, the U.S. producer, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-10, Worthington reported that NRSCs from the United States and China can *** be used interchangeably. The majority of importers and purchasers reported that NRSCs from the United States and China can always be used interchangeably.

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

Country pair	U.S. producers				U.S. importers				U.S. purchasers			
	A	F	S	N	A	F	S	N	A	F	S	N
United States vs. China	***	***	***	***	8	4	---	---	5	2	1	---
United States vs. Other	***	***	***	***	6	---	---	1	6	---	---	---
China vs. Other	***	***	***	***	6	1	---	1	5	---	---	---

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

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

As can be seen from table II-11, eight responding purchasers reported that domestically produced product always met minimum quality specifications.[27] Six responding purchasers reported that Chinese NRSCs always met minimum quality specifications.

Purchasers were also asked if they or their customers had complained or returned NRSCs from any supplier since 2017. Three of 11 purchasers reported they had complaints including: bad threads, broken valves, weld slag on valves, spud leads, pinholes, and particulates in NRSCs produced by Worthington, and one purchaser reported problems with product from China, listing valves that wouldn't close, spud leaks, and pinholes. Two of nine responding purchasers reported that they had returned the product. Two purchasers specifically reported that they had returned the product to Worthington, and one purchaser reported returning Chinese-produced NRSCs. Purchaser *** reported that quality concerns come equally from both Chinese and domestic supply sources.

Respondent National Refrigerants argued that ***.[28]

[27] Respondents argue that there are several features of domestic product that are not critical quality characteristics but add to cost, including paint quality, collar and handle width, and anticounterfeiting stamps. National Refrigerants posthearing brief, Answers to Commissioner Questions, pp. 27-28, 39.

[28] National Refrigerants' posthearing brief, Answers to Commissioner Questions, pp. 37-39.

Table II-11
NRSCs: Ability to meet minimum quality specifications, by source

Source of purchases	Always	Usually	Sometimes	Rarely or never
United States	8	3	---	---
China	6	---	---	1
All other sources	1	2	---	---

Note: Purchasers were asked how often domestically produced or imported NRSCs meets minimum quality specifications for their own or their customers' uses.

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

In addition, the U.S. producer, importers, and purchasers were asked to assess how often differences other than price were significant in sales of NRSCs from the United States, subject, or nonsubject countries. As seen in table II-12, Worthington reported that there were *** differences other than price. A plurality of importers and purchasers reported that differences other than price were always significant.

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

	U.S. producers				U.S. importers				U.S. purchasers			
Country pair	A	F	S	N	A	F	S	N	A	F	S	N
United States vs. China	***	***	***	***	5	3	3	1	5	3	---	---
United States vs. Other	***	***	***	***	4	1	2	---	3	1	2	---
China vs. Other	***	***	***	***	5	---	3	---	3	---	2	---

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

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

*** importers *** reported that ***. Importer *** reported that ***. Worthington argued that all of the ***.[29]

Importers *** reported that "Of primary concern is the assurance of a continuous supply of quality cylinders on a monthly basis. Supply continuity is critical for production continuity, job security for employees and satisfying customer orders. We have experienced higher quality of valve threads on cylinders we've imported from China when compared to domestic cylinders. Lesser quality threads lead to

[29] Petitioner posthearing brief, Answers to Commissioners' Questions, p. 5.

production stoppages, lost man hours, and equipment downtime. Lead times are 60 days for cylinders produced in China. Lead time for domestic cylinders is typically 90 to 120 days, depending on the time of year. In our experience, cylinders imported from China have a higher on-time and fill rate." *** reported that there is a higher defect rate for U.S.-produced NRSCs which increase its overall costs, and that NRSCs from China have a longer shelf life, more consistent quality, and a better valve design, but that U.S. NRSCs usually have a better paint which improves the appearance of the cylinder and have lower logistics costs. *** reported that availability is a significant factor and that NRSCs are more quickly available from Worthington than from China.

Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on staff elasticity estimates in their testimony or briefs.

U.S. supply elasticity

The domestic supply elasticity for NRSCs measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of NRSCs. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced NRSCs. Chinese respondents argued that staff estimates of supply elasticity in the prehearing report were too high and suggested an elasticity range of 1 to 2.[30] Analysis of these factors and party arguments indicates that the U.S. industry has the ability to moderately increase or decrease shipments to the U.S. market; an estimate in the range of 2 to 5 is suggested.[31]

U.S. demand elasticity

The U.S. demand elasticity for NRSCs measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of NRSCs. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the NRSCs in the production of any downstream

[30] Chinese respondents' prehearing brief, pp. 31-32.

[31] Staff revised this range from 4 to 8 based on evidence of some supply constraints presented in testimony and party briefs (see "Supply constraints" above).

products. Based on the available information, the aggregate demand for NRSCs is likely to be relatively inelastic; a range of -0.25 to -0.75 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[32] Product differentiation, in turn, depends upon such factors as quality (e.g., overall performance, ease of handling and filling, integrity, appearance, defect rate, consistency of valve thread quality, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced NRSCs and imported NRSCs is likely to be in the range of 3 to 5. Many firms have indicated that there are several factors other than price that are significant including quality, supply continuity, and lead times.

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

Part III: U.S. 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 is based on the questionnaire response of one firm, Worthington, that accounted for 100 percent of U.S. production of NRSCs during 2019.[1]

U.S. producers

The Commission issued a U.S. producer questionnaire to one firm, Worthington, based on information contained in the petition. Staff believes that Worthington's response represents all known U.S. production of NRSCs. Table III-1 lists Worthington's production locations, position on the petition, and share of total production.

Table III-1
NRSCs: U.S. producer Worthington's position on the petition, location of production, and share of reported production, 2019

Firm	Position on petition	Production locations	Share of production (percent)
Worthington	Petitioner	Columbus, OH, and Paducah, KY	***
Total			***

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

[1] In 2017, Worthington acquired former U.S. producer Amtrol's NRSC production facilities in West Warwick, Rhode Island, and Paducah, Kentucky, becoming the last remaining domestic producer of NRSCs. Petitioner's postconference brief, p. 3 and p. 9; and Respondent National Refrigerants' postconference brief, p. 3.

Table III-2 presents information on Worthington's ownership, related and/or affiliated firms.

Table III-2
NRSCs: U.S. producer Worthington's ownership, related and/or affiliated firms

Item / Firm	Firm Name	Affiliated/Ownership
Related producers:		
***	***	***
***	***	***

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

As indicated in table III-2, Worthington is not related to an exporter or U.S. importer of the subject merchandise.[2] In addition, Worthington did not import[3] *** the subject merchandise from U.S. importers.

Table III-3 presents Worthington's reported changes in operations since January 1, 2017.[4]

Table III-3
NRSCs: U.S. producer Worthington's reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Acquisitions:	
Worthington	In 2017, Worthington acquired Amtrol Inc.'s operations. As part of that transaction, Worthington acquired Amtrol's facilities in Paducah, Kentucky, and West Warwick, Rhode Island, including their NRSC production lines.
Plant closings:	
Worthington	In 2018, Worthington shut down the NRSC production line at the West Warwick, Rhode Island, facility that was acquired from Amtrol in 2017.

Source: Petitioner's postconference brief, exh. 4, p. 2 and p. 4.

[2] Petitioner's postconference brief, p. 12, fn. 11.

[3] Ibid.

[4] Worthington noted that, due to renewed interest and orders from purchasers, it is currently investing ***. It noted that since filing the trade case, it has also been able to undertake ***. Petitioner's prehearing brief, p. 18.

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present Worthington's production, capacity, and capacity utilization.[5] Capacity decreased by *** percent from 2017 to 2018, and by *** percent from 2018 to 2019, for an overall decrease of *** percent from 2017 to 2019.[6] Interim 2020 capacity was equal to interim 2019 capacity. Worthington's constraints to production include the ***.[7]

Worthington's production decreased by *** percent from 2017 to 2018, and by *** percent from 2018 to 2019, for an overall decrease of *** percent during 2017-19. Interim 2020 production was *** percent lower than interim 2019 production.[8] Capacity utilization increased by *** percentage points from 2017 to 2019 and was *** percentage points lower in interim 2020 than in interim 2019.

Table III-4
NRSCs: U.S. producer Worthington's capacity, production, and capacity utilization, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Capacity (units)				
Capacity	***	***	***	***	***
Production	***	***	***	***	***
	Capacity utilization (percent)				
Capacity utilization (percent)	***	***	***	***	***

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

[5] In its questionnaire response, Worthington calculated its capacity by ***. U.S. producers' questionnaire response, question II-3c. After staff provided suggestions for recalculating Worthington's capacity, ***. Email from *** to USITC staff, March 17, 2021.

[6] ***. Petitioner's postconference brief, p. 15.

[7] U.S. producers' questionnaire response, question II-3d.

[8] ***. U.S. producers' questionnaire response, question II-2b.

Figure III-1
NRSCs: U.S. producer Worthington's capacity, production, and capacity utilization, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Alternative products

Worthington reported that it cannot produce alternative products on the same equipment as NRSCs ***.[9] Worthington's ***.[10]

[9] Petitioner's postconference brief, p. 29.
[10] U.S. producers' questionnaire response, question II-4b.

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

Table III-5 presents U.S. producer Worthington's U.S. shipments, export shipments, and total shipments.

Commercial shipments represented approximately *** of total shipments, by quantity, throughout the period for which data were collected. Commercial shipment quantities decreased by *** percent during 2017-19, and were *** percent lower in interim 2020 than interim 2019. Commercial shipment values, however, increased by *** percent during 2017-19, and were *** percent lower in interim 2020 than interim 2019.[11] A decrease in quantity and an increase in value resulted in a *** percent increase in unit values between 2017 and 2019.[12] Commercial shipment unit values were *** percent higher in interim 2020 than interim 2019.

Internal consumption[13] represented approximately *** of total shipments, by quantity, throughout the period for which data were collected. Internal consumption quantities increased by *** percent from 2017 to 2019, and were *** percent higher in interim 2020 than interim 2019.[14] Internal consumption shipment values increased by *** percent during 2017-19, and were *** percent higher in interim 2020 than interim 2019. Unit values decreased by *** percent during 2017-19 and were *** percent higher in interim 2020 than interim 2019.

Export shipments represented between *** and *** percent of total shipments, by quantity, throughout the period for which data were collected. Worthington's principal exports

[11] ***. Email from *** to USITC staff, January 29, 2021.
[12] ***. Email from *** to USITC staff, April 24, 2020.
[13] ***. Petition, p. 19; U.S. producers' questionnaire response, question II-13.
[14] ***. Email from *** to USITC staff, January 29, 2021.

markets are ***. Export shipment quantities decreased by *** percent from 2017 to 2019, and were *** percent lower in interim 2020 than interim 2019. Export shipment values decreased by *** percent in value from 2017 to 2019, and were *** percent lower in interim 2020 than interim 2019. Export shipment unit values increased by *** percent from 2017 to 2019, and were *** percent higher in interim 2020 than interim 2019.

Table III-5
NRSCs: U.S. producer Worthington's U.S. shipments, export shipments, and total shipments, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per unit)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of quantity (percent)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

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

U.S. producers' inventories

Table III-6 presents U.S. producer Worthington's end-of-period inventories and the ratio of these inventories to its production, U.S. shipments, and total shipments**.** Worthington's end-of-period inventories decreased by *** percent from 2017 to 2018, then increased by *** percent from 2018 to 2019, for an overall increase of *** percent during 2017-19. End-of-period inventories were *** percent higher in interim 2020 than interim 2019.[15] Worthington's ratio of inventories to total shipments ranged from *** percent during 2017-19.

Table III-6
NRSCs: U.S. producer Worthington's inventories, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. producers' end-of-period inventories	***	***	***	***	***
	Ratio (percent)				
Ratio of inventories to.--					
U.S. production	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

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

U.S. producers' imports and purchases

U.S. producer Worthington did not import *** NRSCs from 2017 to 2019.

[15] The increase in end-of-period inventories between September 2019 and December 2019 ***. Email from *** to USITC staff, February 18, 2021.

U.S. employment, wages, and productivity

Table III-7 shows U.S. producer Worthington's employment-related data. Production and related workers (PRWs), total hours worked, hours worked per PRW, wages paid, and hourly wages all increased from 2017 to 2019, but were all lower in interim 2020 than interim 2019.[16] From 2017 to 2019, production decreased, while the number of PRWs increased, resulting in decreasing productivity and increasing unit labor costs from 2017 to 2019. Worthington explained that the number of PRWs and hours worked increased from 2017 to 2019 despite decreasing production because ***.[17]

Table III-7
NRSCs: U.S. producer Worthington's employment related data, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (units per hour)	***	***	***	***	***
Unit labor costs (dollars per unit)	***	***	***	***	***

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

[16] ***. U.S. producers' questionnaire response, question II-2b.

[17] Email from *** to USITC staff, April 21, 2020.

Captive production

Section 771(7)(C)(iv) of the Act states that–[18]

> *If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that–*
>
> *(I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product,*
>
> *(II) the domestic like product is the predominant material input in the production of that downstream article, and*
>
> *then the Commission, in determining market share and the factors affecting financial performance . . ., shall focus primarily on the merchant market for the domestic like product.*

Transfers and sales

As reported in table III-5 above, internal consumption accounted for between *** and *** percent of U.S. producer Worthington's total shipments of domestically manufactured NRSCs over the period,[19] while commercial U.S. shipments accounted for between *** and *** percent of U.S. producer Worthington's total shipments of domestically manufactured NRSCs over the period.[20] Comparing the data reported in table III-5 with data reported in table VI-1, *** U.S. producer Worthington's export shipments were commercial export shipments, and they accounted for between *** and *** percent of U.S. producer Worthington's total shipments of domestically manufactured NRSCs over the period.

First statutory criterion in captive production

The first requirement for application of the captive production provision is that the domestic like product that is internally transferred for processing into that downstream article not enter the merchant market for the domestic like product. U.S. producer Worthington reported internal consumption of NRSCs for the production of ***.

---

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

[19] Internal consumption accounted for between *** and *** percent of U.S. producer Worthington's U.S. shipments of domestically manufactured NRSCs over the period.

[20] Commercial U.S. shipments accounted for between *** and *** percent of U.S. producer Worthington's U.S. shipments of domestically manufactured NRSCs over the period.

Worthington did not report diverting NRSCs intended for internal consumption to the merchant market, stating that the internally transferred NRSCs, once ***, do not enter the merchant market for the domestic like product.[21]

Second statutory criterion in captive production

The second criterion of the captive production provision concerns whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. Table III-8 shows Worthington's share of materials in the production of downstream articles (i.e., ***) resulting from captive production. NRSCs reportedly comprise *** percent of the finished cost of ***.

Table III-8
NRSCs: U.S. producer Worthington's share of materials in production of downstream articles

Item	Share of value (percent)
Share of downstream products -- NRSCs	***
All other material inputs	***
All material inputs	***

[21] Petitioner's postconference brief, p. 39.

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

U.S. importers

The Commission issued importer questionnaires to 23 firms, including those believed to be importers of subject NRSCs, and to Worthington, the sole U.S. producer of NRSCs.[1] Usable questionnaire responses were received from 13 companies, representing an estimated *** percent of total imports, *** percent of subject imports, and *** percent of nonsubject imports of NRSCs, in 2019.[2] [3]

[1] The Commission issued questionnaires to those firms identified in the petition. Of the 24 firms that were sent a questionnaire:

- Thirteen firms submitted full questionnaire responses.
- ***.
- ***.

[2] Staff estimate *** NRSCs were imported from China and *** NRSCs were imported from nonsubject sources, for a total of *** NRSCs from all sources, in 2019.

[3] In the petition, Worthington estimated *** NRSCs were imported from nonsubject sources in 2019. This estimate consists of *** filled NRSCs, as it ***. Given that the scope does not include filled NRSCs, Worthington's estimate of nonsubject imports in 2019 is ***.

Table IV-1 lists all responding U.S. importers of NRSCs from China and other sources, their locations, and their shares of U.S. imports, in 2019. BMP International and BMP USA are ***. iGas is ***.[4] U.S. importer iGas ***.[5] BMP International imported NRSCs in ***, while iGas imported NRSCs in ***. BMP USA imported NRSCs in ***.

Table IV-1
NRSCs: U.S. importers, their headquarters, and share of total imports by source, 2019

Firm	Headquarters	Share of imports by source (percent)		
		China	Nonsubject sources	All import sources
A-Gas	Bowling Green, OH	***	***	***
BMP International	Tampa, FL	***	***	***
BMP USA	Tampa, FL	***	***	***
FluoroFusion	Clayton, NC	***	***	***
Hudson Technologies	Pearl River, NY	***	***	***
iGas	Tampa, FL	***	***	***
Kivlan	Clayton, NC	***	***	***
National Refrigerants	Philadelphia, PA	***	***	***
Pacific Bridge	Brea, CA	***	***	***
Summit Refrigerants	Humble, TX	***	***	***
Technical Chemical	Cleburne, TX	***	***	***
Unique	Philadelphia, PA	***	***	***
Weitron	Newark, DE	***	***	***
All firms		100.0	100.0	100.0

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

[4] Email from *** to USITC staff, February 10, 2021.

[5] ***. Foreign producer questionnaire response, question *** and email from *** to USITC staff, February 17, 2021.

U.S. imports

Table IV-2 presents data for U.S. imports of NRSCs from China and all other sources. The vast majority of NRSC imports were from subject sources, ranging from *** to *** percent of total imports.[6]

NRSC import quantities from China increased by 2.6 percent from 2017 to 2018, and by 48.3 percent from 2018 to 2019, for a total increase of 52.2 percent during 2017-19. NRSC import quantities from China were 1.5 percent higher in interim 2020 than interim 2019. NRSC import values from China decreased by 40.4 percent from 2017 to 2018, then increased by 44.5 percent from 2018 to 2019, for a total decrease of 13.8 percent during 2017-19.[7] NRSC import values from China were 4.9 percent higher in interim 2020 than interim 2019.

The ratio of U.S. imports from China to U.S. production increased by *** percentage points from 2017 to 2019, and was *** percentage points higher in interim 2020 than interim 2019.

[6] *** U.S. importers reported importing NRSCs from nonsubject sources (***) during the period for which data were collected: ***.

[7] ***. Email from *** to USITC staff, February 10, 2021.

Table IV-2
NRSCs: U.S. imports, by source, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. imports from.--					
China	2,590,052	2,657,321	3,941,577	2,440,123	2,475,532
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
China	41,288	24,620	35,580	22,208	23,296
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per unit)				
U.S. imports from.--					
China	15.94	9.27	9.03	9.10	9.41
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of quantity (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Ratio to U.S. production				
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Figure IV-1
NRSCs: U.S. import quantities and average unit values, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

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 *** percent of total imports of NRSCs by quantity during March 2019 through February 2020.

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

Item	March 2019 through February 2020	
	Quantity (units)	Share quantity (percent)
U.S. imports from.--		
China	4,131,200	***
Nonsubject sources	***	***
All import sources	***	100.0

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

[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)).

Apparent U.S. consumption and market shares

Table IV-4 and figure IV-2 present data on total market apparent U.S. consumption and U.S. market shares for NRSCs.

Apparent U.S. consumption in the total market increased in quantity (*** percent) and decreased by value (*** percent) from 2017 to 2018, and increased in quantity (*** percent) and value (*** percent) from 2018 to 2019, for a total increase in quantity (*** percent) and value (*** percent) during 2017-19. Apparent consumption in the total market was *** percent lower in quantity and *** percent higher in value in interim 2020 than interim 2019.

*** U.S. importers' U.S. shipments of NRSCs were internal consumption or transfers to related firms in 2017 and 2018, and *** percent were in 2019 and interim periods.[10] U.S. shipment quantities of imports from China increased by 25.6 percent from 2017 to 2018 and increased by 39.2 percent from 2018 to 2019, resulting in a 74.9 percent increase during 2017-19. Interim 2020 U.S. shipment quantities of imports from China were 0.8 percent lower than interim 2019. U.S. shipment values of imports from China decreased by 25.3 percent from 2017 to 2018 and increased by 30.8 percent from 2018 to 2019, resulting in a 2.3 percent decrease during 2017-19.[11] Interim 2020 U.S. shipment values of imports from China were 6.8 percent higher than interim 2019. U.S. producer Worthington's U.S. shipments decreased in quantity by *** percent during 2017-19 and increased in value by *** percent from 2017-19. Worthington's interim 2020 U.S. shipments were *** percent higher in quantity and *** percent higher in value than in interim 2019.

Market share of U.S. import shipments from China increased during 2017-19 by *** percentage points as a share of quantity, and decreased by *** percentage points as a share of value. Conversely, market share of U.S. producer Worthington's U.S. shipments decreased during 2017-19 by *** percentage points as a share of quantity, and increased during 2017-19 by *** percentage points as a share of value.

[10] Transfers to related firms were reported ***. U.S. commercial shipments were reported ***.
[11] ***.

Table IV-4
NRSCs: Apparent U.S. consumption and market shares, total market, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	2,105,051	2,644,815	3,680,720	2,657,469	2,635,686
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	36,109	26,974	35,269	25,484	27,222
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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
NRSCs: Apparent U.S. consumption, total market, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Table IV-5 and figure IV-3 present data on merchant market apparent U.S. consumption and U.S. market shares for NRSCs.

Apparent U.S. consumption in the merchant market increased in quantity (*** percent) and decreased in value (*** percent) from 2017 to 2018, then increased in quantity (*** percent) and value (*** percent) from 2018 to 2019, for a total increase in quantity (*** percent) and increase in value (*** percent) during 2017-19. Apparent consumption in the merchant market was *** percent lower in quantity and *** percent lower in value in interim 2020 than interim 2019.

U.S. producer Worthington's U.S. commercial shipments decreased in quantity by *** percent during 2017-19 and increased in value by *** percent from 2017-19. Worthington's interim 2020 U.S. commercial shipments were *** percent lower in quantity and *** percent lower in value than in interim 2019.

Merchant market share of U.S. imports from China increased during 2017-19 by *** percentage points as a share of quantity, and decreased by *** percentage points as a share of value. Conversely, merchant market share of U.S. producer Worthington's U.S. commercial

shipments decreased during 2017-19 by *** percentage points as a share of quantity, and increased during 2017-19 by *** percentage points as a share of value.

Table IV-5
NRSCs: Apparent U.S. consumption and market shares, merchant market, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	2,105,051	2,644,815	3,680,720	2,657,469	2,635,686
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	36,109	26,974	35,269	25,484	27,222
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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-3
NRSCs: Apparent U.S. consumption, merchant market, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Part V: Pricing data

Factors affecting prices

Raw material costs

NRSCs are typically made from cold-rolled steel.[1] Raw materials as a share of total cost of goods sold decreased from *** percent in 2017 to *** percent in 2019, and was *** percent during January-September 2020. As shown in figure V-1, ***. The increase of steel raw material costs in 2018 is likely attributable to section 232 tariffs.[2] The U.S. producer, Worthington, reported that section 232 tariffs ***, and all *** responding U.S. importers reported that there had been no change.

Figure V-1
*****, monthly, January 2017 to December 2020**

* * * * * * *.

[1] Petition, p. 13.

[2] Petitioner stated that section 232 tariffs led to an increase in steel prices, but ***, and that section 301 tariffs had no impact on its raw material costs and availability ***. Petitioner's postconference brief, Answers to Staff Questions, pp. 40-41.

Transportation costs to the U.S. market

Transportation costs for NRSCs shipped from China to the United States averaged 8.4 percent of landed duty paid value during 2019. These estimates were derived from official import data and represent the transportation and other charges on imports.[3]

U.S. inland transportation costs

U.S. producer Worthington reported that *** usually arranges transportation. Worthington reported that its U.S. inland transportation costs average*** percent while the U.S. importers reported transportation costs averaged*** percent of total cost. *** and two importers that reported internal consumption only reported U.S. inland transportation costs ranging from*** percent of the total cost of NRSCs.

National Refrigerants stated that after Worthington acquired Amtrol, Worthington increased prices for NRSCs and these prices did not include shipping ***. It reported that the difference in freight cost from the new point of shipment, ***.[4] Worthington argued that freight is a relatively small input, and accounts for less than 5 percent of the total cost for NRSCs.[5]

Pricing practices

Pricing methods

U.S. producer Worthington reported pricing through *** and *** (table V-1).[6] Most responding importers did not report commercial shipments during January 2017-September 2020.

[3] 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 statistical reporting numbers 7311.00.0060, 7311.00.0090, and 7310.29.0025, accessed April 5, 2019.

[4] National Refrigerants' posthearing brief, Answers to Commissioner Questions, p. 7.

[5] Hearing transcript, p. 104 (Powers).

[6] ***.

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

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	***
Contract	***	***
Set price list	***	***
Other	***	***
Responding firms	1	***

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.
Note: Staff revised ***.

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

Worthington primarily sold NRSCs through *** in 2019 (table V-2). ***. Worthington reported that ***, but noted that this does not allow***.[7] Unlike***. Petitioner Worthington reported that its spot market prices are based on supply and demand conditions at the time of sale.[8] National Refrigerants stated that if a purchase order is not included in a contracted forecast, it considers that purchase as a spot purchase.[9]

Table V-2
NRSCs: U.S. producers' shares of U.S. commercial shipments by type of sale, 2019

Item	U.S. producers	Subject U.S. importers
	Share (percent)	
Share of commercial U.S. shipments.--		
Long-term contracts	***	***
Annual contract	***	***
Short-term contracts	***	***
Spot sales	***	***

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

[7] Petitioner's postconference brief, Answers to Staff Questions, p. 26.
[8] Petitioner's postconference brief, Answers to Staff Questions, p. 26.
[9] Hearing transcript, p. 163 (Beatty).

Petitioner Worthington stated that its annual and long-term contracts include a fixed price for a fixed volume, but that these contracts generally have clauses that allow for adjustments every year for the cost of steel.[10] Its contract negotiations generally take place face-to-face when possible, but otherwise take place over the phone.[11] Chinese respondents stated that all sales to U.S. customers are on a short-term or spot basis without minimum quantity requirements.[12]

Six purchasers reported that they purchase product monthly, three purchase weekly, and two purchase quarterly. Eight of 11 responding purchasers reported that their purchasing frequency had not changed since 2017. Most purchasers (9 of 11) contact one to three suppliers before making a purchase.

Sales terms and discounts

Worthington reported that it typically quotes prices on *** basis, and that it offers ***.

Price and import purchase cost data

The Commission requested the U.S. producer and importers to provide quarterly data for the total quantity and f.o.b. value of the following NRSC products shipped to unrelated U.S. customers during January 2017-September 2020, and landed duty-paid purchase cost data[13] for the following NRSC products for internal consumption, repackaging, or retail sale.

***Product 1*.--** Non-refillable steel cylinder, 9.5-inches in diameter, with 260 PSIG service pressure rating, unfilled, meeting the requirements of U.S. Department of Transportation specification 39.

***Product 2*.--** Non-refillable steel cylinder, 9.5-inches in diameter, with 400 PSIG service pressure rating, unfilled, meeting the requirements of U.S. Department of Transportation specification 39.

[10] Hearing transcript, pp. 83, 116 (Bowes); Petitioner's posthearing brief, Answers to Commissioners' Questions, p. 27.

[11] Hearing transcript, p. 62 (Powers).

[12] Chinese respondents' posthearing brief, Answers to Commissioner Questions, p. 15.

[13] Values were reported as landed, duty-paid values at the U.S. port of entry, including ocean freight and insurance costs, brokerage charges, and import duties (i.e., all charges except inland freight in the United States).

The U.S. producer Worthington provided usable pricing data for sales of the requested products.[14] Pricing data reported by Worthington accounted for approximately *** percent of its U.S. shipments of NRSCs in 2019. No importer was able to provide price data because*** importers did not sell unfilled containers.[15] *** importers provided usable purchase cost data for products 1 and 2.[16] Purchase cost data reported by these importers accounted for *** percent of total imports from China in 2019. Price data for U.S.-produced products 1 and 2 and landed duty-paid purchase cost for imports of products 1 and 2 from China are presented in tables V-3 to V-4 and figures V-2 to V-3.

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

[15] ***.

[16] Pricing data reported by *** is not included because ***. See staff email with ***, January 27, 2021.

Table V-3
NRSCs: Weighted-average f.o.b. prices, unit LDP, and quantities of domestic and imported product 1 and price/cost differentials, by quarter, January 2017-September 2020

Period	United States		China		
	Price (dollars per unit)	Quantity (units)	Unit LDP Value (dollars per unit)	Quantity (units)	Price/cost differential (percent)
2017:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2018:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2019:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2020:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***

Note: Product 1: Non-refillable steel cylinder, 9.5-inches in diameter, with 260 PSIG service pressure rating, unfilled, meeting the requirements of U.S. Department of Transportation specification 39.

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

Table V-4
NRSCs: Weighted-average f.o.b. prices, unit LDP, and quantities of domestic and imported product 2 and price/cost differentials, by quarter, January 2017-September 2020

Period	United States		China		
	Price (dollars per unit)	Quantity (units)	Unit LDP Value (dollars per unit)	Quantity (units)	Price/cost differential (percent)
2017:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2018:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2019:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2020:					
Jan.-Mar.	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***

Product 2: Non-refillable steel cylinder, 9.5-inches in diameter, with 400 PSIG service pressure rating, unfilled, meeting the requirements of U.S. Department of Transportation specification 39.
Note: Staff did not include pricing data reported by *** because ***. See staff email with ***, January 27, 2021.

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

Figure V-2
NRSCs: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic and imported product 1, by quarter, January 2017 through September 2020

* * * * * * *.

Figure V-3
NRSCs: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic and imported product 2, by quarter, January 2017 through September 2020

* * * * * * *.

Importers reporting import purchase cost data were asked to provide additional information on costs beyond landed duty-paid costs incurred from directly importing from China. Eight of 12 responding importers reported that their firms did not incur any additional costs by importing NRSCs rather than purchasing from the U.S. producer or other importers, and 7 of 12 importers reported that they compare importing costs to the cost of purchasing from the U.S. producer.[17]

Importers *** provided estimates of the total additional cost incurred as a percentage compared to LDP value importing NRSCs rather than purchasing from the U.S. producer or importers ranging from *** percent to *** percent. Importer *** reported that costs to import NRSCs from China add about *** percent to the landed duty-paid costs, but the total cost is equivalent to the cost of U.S.-produced NRSCs. Similarly, importer *** reported that while additional costs are incurred for supply chain management and in-bound inspection costs, the per-unit cost is comparable to U.S.-produced NRSCs. Importers *** reported additional costs including:

- Inventory carrying costs and warehousing (*** percent to *** percent)
- Quality management (*** percent to *** percent)
- Supply chain management and logistics costs (*** percent to *** percent)[18]
- Inspection costs (*** percent)

Importers were asked about the benefits of importing NRSCs rather than purchasing NRSCs from Worthington or other importers. These benefits included continuity of supply/availability (reported by 8 purchasers), quality (3), and price (3). Importers *** reported that Worthington ***. Importers *** reported concerns with supply issues because of Worthington's acquisition of Amtrol, and importers *** reported defects with Worthington's NRSCs and inconsistent lead times. *** of 11 importers reported that subject import NRSCs are priced lower than U.S.-produced NRSCs not including the additional costs of importing, but only *** out of 9 importers reported that NRSCs from China were lower priced than U.S.-produced

[17] Petitioner argued that large gas and chemical companies are typically already experienced importers of other products from China. Petitioner's postconference brief, Answers to Staff Questions, p. 28.

[18] *** reported that logistics costs include the additional cost of paying 6 to 7 weeks in advance of receiving the shipment, and the loading and unloading of NRSCs at the ports require additional labor.

NRSCs when additional importing costs are included. Importers estimated their savings by importing themselves ranging from 9.0 percent to 35.0 percent when compared to purchasing from U.S. producer Worthington.

Price and import purchase cost trends

In general, prices and purchase costs increased during January 2017-September 2020. Table V-5 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** percent to *** percent during January 2017-September 2020 while purchase costs for NRSCs from China increased by *** percent and *** percent. Figures V-4 and V-5 show indexed price changes for the two pricing products for the U.S. producer and subject importers purchase cost, respectively, over the period.

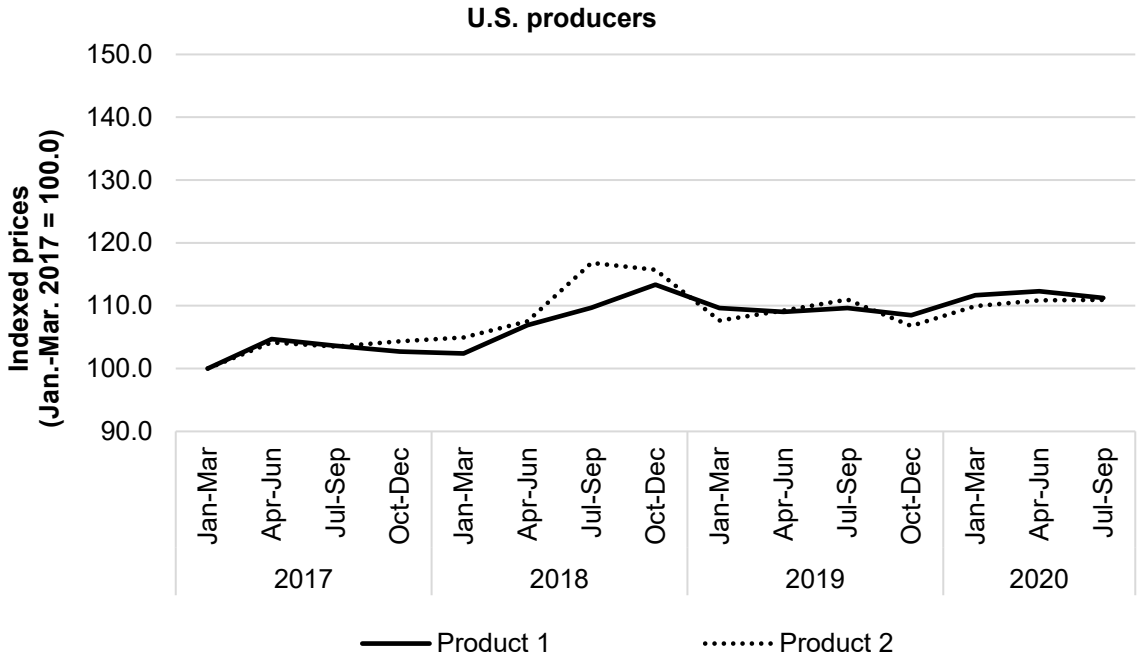
Table V-5
NRSCs: Summary of weighted-average f.o.b. prices and unit LDP values for products 1-2 from the United States and China

Item	Number of quarters	Low price/ LDP value (dollars per unit)	High price/LDP value (dollars per unit)	Change in price/LDP value over period[1] (percent)
Product 1:				
United States	***	***	***	***
China (cost)	***	***	***	***
Product 2:				
United States	***	***	***	***
China (cost)	***	***	***	***

Note: Percentage change from the first quarter in 2017 to the last quarter in which price data were available in 2020.

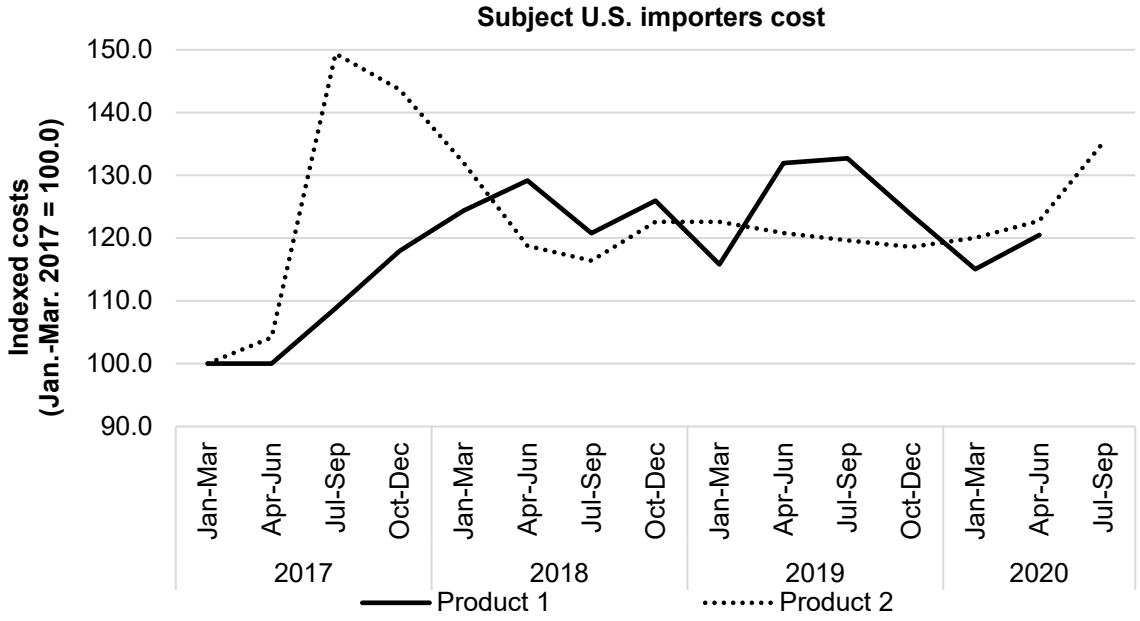
Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-4
NRSC: Indexed U.S. producer prices, January 2017 through September 2020



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

Figure V-5
NRSC: Indexed subject U.S. importer purchase cost, January 2017 through September 2020



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

U.S. producer Worthington reported that the imposition of tariffs on Chinese-origin products under section 301 *** and importers *** reported that prices had increased as a result section 301 tariffs. Importers *** reported that prices were unchanged. Regarding the section 232 tariffs, Worthington reported that prices of NRSCs ***. *** responding importers reported that prices did not change in response to the 232 tariffs.

Worthington stated that the increase in prices during 2018 and 2019 were largely due to its attempts to account for increased steel costs resulting from section 232 measures.[19]

Price-cost comparisons

As shown in table V-6, landed duty-paid costs for NRSCs imported from China were below the sales price for U.S.-produced product in all 29 instances (*** units). The price/cost differential ranged from *** to *** percent, averaging *** percent.

Table V-6
NRSCs: Comparisons of import purchase costs and U.S.-producer sales prices, by country January 2017-December 2019

Source	Import purchase cost lower than U.S. sales price				
	Number of quarters	Quantity (Units)	Average price/cost differential (percent)	Price/cost differential range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Total, lower	29	***	22.2	7.6	36.2

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.

[19] Hearing transcript, pp. 93-94 (Ringel).

Lost sales and lost revenue

In the preliminary phase of the investigations, the Commission requested that the U.S. producer of NRSCs report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of NRSCs from China. U.S. producer Worthington reported that ***. The U.S. producer identified *** firms with which it lost sales or revenue (*** consisting of lost sales allegations and *** firms for which it reported both lost sales and lost revenue allegations).

In the final phase of the investigations, Worthington reported that it ***. Staff contacted 24 purchasers and received responses from 11 purchasers.[20] Responding purchasers reported purchasing and/or importing 11.6 million NRSCs during 2017-19 (table V-7).

[20] Purchasers*** also provided importer questionnaire responses. Four responding purchasers purchased exclusively from Worthington, two purchasers purchased or imported exclusively from China, one purchased or imported from China and nonsubject sources, and the remaining four purchasers reported purchasing both from Worthington and Chinese sources (including*** which also purchased from nonsubject sources).

Table V-7
NRSCs: Purchasers' responses to purchasing patterns

Purchaser	Purchases and imports in 2017-19 (units)			Change in domestic share (pp, 2017-19)	Change in subject country share (pp, 2017-19)
	Domestic	Subject	All other		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	***	***	***	***	***

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.

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

Of the 11 responding purchasers, six reported that, since 2017, they had purchased/ imported NRSCs from China instead of U.S.-produced product (table V-8). Four of these purchasers reported that subject import prices were lower than U.S.-produced product, and one of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product but did not report the quantity of imported NRSCs. Four purchasers reported that price was not the primary reason, reporting other reasons such as quality issues and problematic lead times from Worthington, diversity and continuity of supply needs, and one purchaser reported that it had imported NRSCs for a sampling analysis.

Table V-8
NRSC: Purchasers' responses to purchasing subject instead of domestic, by firm

Purchaser	Subject imports purchased instead of domestic (Y/N)	Imports priced lower (Y/N)	If purchased subject imports instead of domestic, was price a primary reason		
			Y/N	If Yes, quantity (units)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes--6; No--5	Yes--4; No--2	Yes--1; No--4	***	

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

Of the 11 responding purchasers, one purchaser reported that the U.S. producer had reduced prices in order to compete with lower-priced imports from China; six reported that they had not and four reported that they did not know (table V-9). The reported estimated price reduction was*** percent, likely to "stay competitive with Chinese pricing."

Table V-9
NRSC: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	Producers reduced price (Y/N)	If produced reduced prices:	
		Estimated U.S. price reduction (percent)	Additional information, if available
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Total / average	Yes--1; No--6	***	

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

Some purchasers provided additional information on purchases and market dynamics. Purchaser/importer*** reported that the main reason for importing from China was to ensure diversity of supply: ***.

Part VI: Financial experience of U.S. producers

Background

The petitioner, Worthington, is the sole U.S. producer of NRSCs and reported its financial results on a calendar year and generally accepted accounting principles ("GAAP") bases.[1] [2] Merchant market sales (commercial sales) accounted for the majority of revenue while internal consumption accounted for *** percent to *** percent of revenue during the period for which data were requested.[3]

[1] Worthington's fiscal year ends on May 31; however, it provided financial data on a calendar year basis. Worthington's NRSC operations are part of its Pressure Cylinders reportable segment, which manufactures and sells "filled and unfilled pressure cylinders, tanks, hand torches, well water and expansion tanks, and oil and gas equipment along with various accessories and related products for diversified end-use market applications." Worthington operates 16 manufacturing facilities worldwide (12 facilities in the United States). In-scope NRSC is currently manufactured at two facilities, Columbus, Ohio and Paducah, Kentucky. As previously discussed in Part III of this report, Worthington acquired the operations of Amtrol in June 2017 which included NRSC production lines in Paducah, Kentucky, and West Warwick, Rhode Island. In September 2018, Worthington shut down the NRSC operations at the West Warwick facility. All relevant financial data of the former Amtrol facilities in Paducah, Kentucky and West Warwick, Rhode Island are included in Worthington's U.S. producer questionnaire response.

Staff conducted a verification of Worthington's U.S. producer questionnaire. The verification adjustments have been incorporated into this report. ***.

The Pressure Cylinders segment represented 37.5 percent of Worthington's consolidated net sales of $3.1 billion in fiscal year 2020 (ends on May 31), and net sales of NRSCs represented *** percent of 2019 net sales within the reportable segment or *** percent of Worthington's consolidated net sales (net sales of NRSCs were reported on a calendar year basis while segment and consolidated sales data were reported on a fiscal year basis). Worthington's 2020 Form 10-K, pp. 1 and 4 (as filed); Worthington's U.S. producer questionnaire, I-2a and II-2; and, staff verification report, Worthington, April 6, 2021.

[2] With respect to the operations at the two facilities where NRSC is produced, NRSC accounted for *** and *** percent of sales in 2019 and 2020, respectively. Worthington's U.S. producer questionnaire, III-5 and staff verification report, Worthington, April 6, 2021.

[3] ***.

Operations on NRSCs

Tables VI-1 and VI-2 present overall NRSC financial results and corresponding changes in average unit values ("AUVs") from 2017 to 2019, interim 2019, interim 2020. Tables VI-3 and VI-4 present financial results specific to the merchant market (commercial sales only) and corresponding changes in AUVs.

Table VI-1
NRSCs: Results of overall operations of U.S. producer Worthington, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
Commercial sales	***	***	***	***	***
Internal consumption	***	***	***	***	***
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Commercial sales	***	***	***	***	***
Internal consumption	***	***	***	***	***
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	***	***	***	***	***
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
NRSCs: Results of overall operations of U.S. producer Worthington, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
	Unit value (dollars per unit)				
Commercial sales	***	***	***	***	***
Internal consumption	***	***	***	***	***
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 questionnaire.

Table VI-2
NRSCs: Changes in AUVs of overall operations between calendar years and partial periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Commercial sales	▲***	▲***	▲***	▲***
Internal consumption	▼***	▼***	▲***	▲***
Total net sales	▲***	▲***	▲***	▲***
Cost of goods sold.-- Raw materials	▲***	▲***	▲***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▲***	▲***	▲***
Average COGS	▲***	▲***	▲***	▲***
	Change in AUVs (dollars per unit)			
Commercial sales	▲***	▲***	▲***	▲***
Internal consumption	▼***	▼***	▲***	▲***
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 questionnaire.

Table VI-3
NRSCs: Results of the merchant market (commercial sales only) of the U.S. producer Worthington, 2017-19, January-Septmeber 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (units)				
Commercial sales	***	***	***	***	***
	Value (1,000 dollars)				
Commercial 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	***	***	***	***	***
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-3—Continued
NRSCs: Results of the merchant market (commercial sales only) of the U.S. producer Worthington, 2017-19, January-Septmeber 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
	Unit value (dollars per unit)				
Commercial 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 questionnaire.

Table VI-4
NRSCs: Changes in AUVs of the merchant market (commercial sales only) between calendar years and partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Commercial sales	▲***	▲***	▲***	▲***
Cost of goods sold.-- Raw materials	▲***	▲***	▲***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▲***	▲***	▲***
Average COGS	▲***	▲***	▲***	▲***
	Change in AUVs (dollars per unit)			
Commercial 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 questionnaire.

Net sales

As presented in table VI-1, total net sales reflect Worthington's internal consumption and commercial sales. In its overall operations, total net sales quantity and value declined *** percent and *** percent, respectively, from 2017 to 2019 (table VI-1). In the merchant market, NRSC sales quantity and value declined at a greater rate, by *** percent and *** percent, respectively, from 2017 to 2019 (table VI-3). In both overall operations and the merchant market, this trend of net sales declines continued into the interim periods (tables VI-1 and VI-3). Worthington explained that NRSC sales are ***.[4] The COVID-19 pandemic

[4] Worthington's U.S. producer questionnaire, IV-16(a).

***.[5]

AUVs in both overall operations and the merchant market increased each year from 2017 to 2019. For overall operations, the AUV increased from $*** in 2017 to $*** in 2019, reflecting the larger decline in total net sales quantity (*** percent) compared to the decline in total net sales value (*** percent) during this time.[6] [7] In the merchant market, the AUV followed the same trend as overall operations (increasing from $*** in 2017 to $*** in 2019), with greater declines in total net sales quantity and value in the merchant market from 2017 to 2019. The lower AUVs in the overall operations for 2018 and 2019 reflect Worthington's internal consumption of NRSCs in used to fill ***. The fluctuations in AUVs in the merchant market from 2017 to 2019 were the result of steel price increases in 2018 as well as increased demand for higher priced, more complex NRSCs in 2018 and 2019 (e.g., moving away from the lower priced 260 psi to the higher priced 400 psi cylinders).[8] In addition, Worthington *** cylinders and experienced ***

[5] Worthington attributed the ***. Worthington's U.S. producer questionnaire, III-9e and email from ***, January 29, 2021.

[6] ***. Staff verification report, Worthington, April 6, 2021.

[7] ***. Petition, p. 19; emails from ***, April 20, 2020 and January 29, 2021; and, staff verification report, Worthington, April 6, 2021. These *** limit the utility of the variance analysis, thus it is not presented in this report.

[8] Email from ***, March 18, 2021 and staff verification report, Worthington, April 6, 2021.

cylinders.[9] AUVs in interim 2020 was higher than in interim 2019 for both overall operations and the merchant market.

Cost of goods sold and gross profit or loss

In its overall operations, Worthington's total cost of goods sold ("COGS") *** increased in absolute value from 2017 to 2019, but *** increased on a per-unit basis and as a ratio to net sales (table VI-1). The unit value of total COGS increased from $*** to $***, while as a ratio to net sales total COGS increased from *** to *** percent. Worthington's COGS indicators in the merchant market closely tracked with those in its overall operations. Merchant market unit value COGS and total COGS to net sales ratio were slightly higher compared to those in the overall operations during the period for which data were collected. The internally consumed NRSCs (unfilled *** cylinders) ***, resulting in the lower unit COGS in Worthington's overall operations compared with its merchant market unit COGS.[10] Total COGS were higher in interim 2020 than in interim 2019 in its overall operations but lower in the merchant market. For both the overall operations and the merchant market, unit COGS and COGS to net sales ratios were higher in interim 2020 than in interim 2019. The trends in per-unit and ratio-to-sales values were impacted by the declines in net sales quantity and/or value in each reporting period.

Raw materials cost was the *** component of total COGS in overall operations, ranging from *** to *** percent of total COGS in Worthington's overall operations during the period examined.[11] Raw materials as a share of total COGS range was slightly lower (***) percent in the merchant market. In its overall operations, raw material costs *** increased by *** while raw material costs *** decreased by *** percent in absolute values in the merchant market from 2017 to 2019. As noted earlier, ***. On a per unit basis and as a ratio to net sales, raw material costs increased from 2017 to 2019 in both the overall and merchant market operations; unit raw materials increased from $*** to $*** for overall operations while the

[9] Ibid.

[10] Internally consumed NRSCs ***. Email from ***, March 18, 2021 and staff verification report, Worthington, April 6, 2021.

[11] Worthington uses ***. Staff verification report, Worthington, April 6, 2021.

merchant market unit raw materials increased at a higher rate (from $*** to $***). As a ratio to net sales, raw materials increased from *** to *** percent for overall operations while raw materials *** increased from *** to *** percent in the merchant market. Raw materials cost on a per-unit basis and as a ratio to net sales were lower in interim 2020 than in interim 2019 in both overall operations and the merchant market. Worthington reported that price increases of ***.[12]

Table VI-5 presents details on specific raw material inputs as a share of total raw material costs in 2019.[13] [14] [15]

Table VI-5
NRSCs: Raw material costs for overall operations reported by U.S. producer Worthington, 2019

Raw materials	Calendar year 2019		
	Value (1,000 dollars)	Unit value (dollars per unit)	Share of value (percent)
Steel	***	***	***
Other material inputs	***	***	***
Total, raw materials	***	***	***

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

Other factory costs were the *** component of COGS, representing *** percent of total COGS during the period examined for overall operations. Other factory

[12] Regarding the effects of section 232 on raw material costs, Worthington stated that it was able to implement modest price increases passed through to annual and long-term contract customers using a price formula mechanism. Petitioner's posthearing brief, exh. 1 Answers to Commissioners' Questions, p. 39; *see also* Hearing transcript, p. 94 (Ringel).

Section 301 duties on imports from China did not directly affect Worthington's prices or costs ***. Petitioner's posthearing brief, exh. 1 Answers to Commissioners' Questions, p. 40 and Worthington's U.S. producer questionnaire, IV-19.

[13] ***. Worthington's U.S. producer questionnaire, III-7 and III-8.

[14] ***. Worthington's U.S. producer questionnaire, III-9d.

[15] ***. Worthington's U.S. producer questionnaire, IV-6.

costs as a share of total COGS range was slightly higher *** percent in the merchant market. From 2017 to 2019, other factory costs increased on a per unit basis and as a ratio to net sales in both overall operations and the merchant market. Unit other factory costs increased from $*** to $*** from 2017 to 2019 for overall operations and unit other factory costs in the merchant market also increased, at a higher rate, from $*** in 2017 to $*** in 2019. As a ratio to net sales, other factory costs for overall operations increased from *** to *** percent and increased from *** to *** percent in the merchant market from 2017 to 2019. ***.[16]

Direct labor costs were the *** component of COGS, representing *** percent of total COGS for overall operations during the period examined. Direct labor costs as a share of total COGS range was slightly higher *** percent in the merchant market. Similar to other factory costs, direct labor increased on a per-unit basis and as a ratio to net sales. Per unit direct labor increased from $*** in 2017 to $*** in 2019 in overall operations and increased from $*** in 2017 to $*** in 2019 in the merchant market from 2017 to 2019. As a ratio to net sales, direct labor increased from *** to *** percent in the overall operations and *** to *** percent in the merchant market from 2017 to 2019. ***.[17] Direct labor on a per-unit basis and as a ratio to net sales were higher in interim 2020 than in interim 2019 in both overall operations and the merchant market.

Worthington's gross profit declined by *** percent from 2017 to 2019 in overall operations (***). Gross profit in the merchant market declined at a *** of *** percent during this time (***). Gross margins *** declined, from *** percent in 2017 to *** percent in 2018 and then to *** percent in 2019 in overall operations and from *** percent in 2017 to *** percent in 2018 and then to *** percent in 2019 in the merchant market. The decline in gross profits *** during this time, with differences in the

[16] Email from ***, March 18, 2021 and staff verification report, Worthington, April 6, 2021.
[17] Worthington's U.S. producer questionnaire, III-9.

two categories of operations resulting from higher COGS in the merchant market. In both overall operations and the merchant market, gross profit in absolute values, on a per-unit basis, and as a ratio to net sales were lower in interim 2020 than in interim 2019.[18]

SG&A expenses and operating income or loss

Worthington's selling, general, and administrative ("SG&A") expenses increased in absolute value, on a per-unit basis, and as a ratio to net sales from 2017 to 2019 in both overall operations and the merchant market. As a ratio to net sales, SG&A expenses increased from *** percent in 2017 to *** percent in 2019 in its overall operations (table VI-1). SG&A expense ratios in the merchant market were essentially the same (table VI-3). Worthington explained that ***.[19] [20] Between the comparable interim periods, total SG&A expenses were lower in both overall operations and the merchant market; per-unit SG&A expenses were lower in overall operations and higher in the merchant market; and, SG&A expense ratios were identical and unchanged.

In its overall operations, Worthington's operating income trended *** to gross profit, declining from *** in 2017 to $*** in 2019. Operating margins (i.e. operating income divided by net sales) also followed the same directional pattern as gross margins, declining from *** percent in 2017 to *** percent in 2019. The merchant market showed the same general trends, with lower operating income as well as operating margins, reflecting the higher unit COGS and mostly higher SG&A expenses in the merchant market. In both overall operations and the merchant market, total operating income, operating margins, and per-unit operating income were lower in interim 2020 than in interim 2019.

[18] When comparing interim 2019 to full year 2019 data, Worthington ***. Worthington's U.S. producer questionnaire, III-18.

[19] Worthington's U.S. producer questionnaire, III-18, and email from ***, March 18, 2021.

[20] Worthington's reported SG&A expenses as a ratio to net sales for NRSC operations were *** the Pressure Cylinders reportable segment. At the segment level, SG&A expenses as a ratio to net sales ranged from 15.2 percent to 15.7 percent during fiscal years 2018, 2019, and 2020. Worthington's 2020 Form 10-K, p. 34.

All other expenses and net income or loss

Worthington *** related to NRSC operations from 2017 to 2019 and during the interim periods, which reflected *** percent of total reported costs and expenses in both overall operations and the merchant market during the period examined. ***, Worthington's net income declined from $*** in 2017 to $*** in 2019, and net income margins also declined from *** to *** percent during this time for overall operations. Merchant market net income also declined, from $*** in 2017 to $*** in 2019, with net income margins declining from *** to *** percent from 2017 to 2019. Net income and margins were lower in interim 2020 than in interim 2019 in both overall operations and the merchant market.

Capital expenditures and research and development expenses, assets, and return on assets

Table VI-6 presents Worthington's capital expenditures and research and development ("R&D") expenses, assets, and operating return on assets ("ROA") related to NRSC operations.[21] Worthington's total capital expenditures *** increased over the three years examined, which reportedly reflects ***. Capital expenditures in interim 2020 were lower than interim 2019. Worthington stated that R&D expenses reflect ***.[22] Total assets increased from $*** in 2017 to $*** in 2019 and the ROA declined from *** to *** percent during this time. Worthington explained that the increases ***.[23]

[21] The return on assets ("ROA") is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value for the subject product. Allocation factors were presumably necessary to report total asset values specific to operations on NRSCs. The ability to assign total asset values to discrete product lines affects the meaningfulness of operating ROA.

[22] Worthington's U.S. producer questionnaire, III-12b and III-12c.

[23] ***. Worthington's U.S. producer questionnaire, III-11b.

Table VI-6
NRSCs: Capital expenditures, R&D expenses, total net assets, and operating ROA of U.S. producer Worthington, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Value (1,000 dollars)				
Capital expenditures	***	***	***	***	***
R&D expenses	***	***	***	***	***
Total net assets	***	***	***		
	Operating return on assets (percent)				
ROA	***	***	***		

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

Capital and investment

The Commission requested the U.S. producer of NRSCs to describe any actual or potential negative effects of imports of NRSCs from China on its growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-7 presents Worthington's reported actual and anticipated negative impact in each category and table VI-8 provides its narrative responses.

Table VI-7
NRSCs: Actual and anticipated negative effects of imports on investment, growth, and development reported by U.S. producer Worthington, 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
NRSCs: Narratives relating to actual and anticipated negative effects of imports on investment, growth, and development reported by U.S. producer Worthington, since January 1, 2017

Narrative
Denial or rejection of investment proposal:
***
Reduction in the size of capital investments:
***
Return on specific investments negatively impacted:
***
Other effects on growth and development:
***
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 subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on the U.S. producer's existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting"; any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[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 16 firms believed to produce and/or export NRSCs from China.[3] Usable responses to the Commission's questionnaire were received from six firms: Jinhua Sinoblue Machinery Manufacturing Co., Ltd. ("Jinhua Sinoblue"), Sanjiang Kaiyuan Co., Ltd. ("Sanjiang Kaiyuan"), Wu Yi Xilinde Machinery Manufacture Co., Ltd. ("Wu Yi Xilinde"), Zhejiang Huijin Machinery Manufacture Co., Ltd. ("Huijin"), Zhejiang Jucheng Cylinder Co., Ltd. ("Jucheng"),[4] and Zhejiang Kin-Shine Technology Co., Ltd. ("Kin-Shine"). These firms' exports to the United States accounted for approximately *** percent of U.S. imports of NRSCs from China in 2019.[5] According to estimates requested of the responding Chinese producers, the production of NRSCs in China reported in questionnaires accounts for 100 percent of overall production of NRSCs in China. Table VII-1 presents information on the NRSC operations of the responding producers and exporters in China.

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

[4] ***. Foreign producer questionnaire response, question I-4 and email from *** to USITC staff, February 17, 2021.

[5] The six foreign producers ***. As such, they estimate their NRSC exports to the United States account for *** percent of NRSC exports from China to the United States. Foreign producer questionnaire responses, question II-6b, and email from *** to USITC staff, February 4, 2021. However, as stated in Part IV, staff estimate a total of *** NRSCs were imported from China in 2019, while Chinese respondents reported 3,035,202 exports to the United States in 2019. Chinese respondents believe the difference may be explained, in part, by differences in timing between exports and imports. Chinese respondents' prehearing brief, p. 78.

Table VII-1
NRSCs: Summary data on firms in China, 2019

Firm	Production (units)	Share of reported production (percent)	Exports to the United States (units)	Share of reported exports to the United States (percent)	Total shipments (units)	Share of firm's total shipments exported to the United States (percent)
Huijin	***	***	***	***	***	***
Jinhua Sinoblue	***	***	***	***	***	***
Jucheng	***	***	***	***	***	***
Kin-Shine	***	***	***	***	***	***
Sanjiang Kaiyuan	***	***	***	***	***	***
Wu Yi Xilinde	***	***	***	***	***	***
All firms	26,119,166	100.0	3,035,202	100.0	25,640,417	11.8

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

Changes in operations

As presented in table VII-2, producers in China reported several operational and organizational changes since January 1, 2017, including six expansions, one curtailment, one plant opening, and one relocation.

Table VII-2
NRSCs: China producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Plant openings:	
***	***
Relocations:	
***	***
Expansions:	
***	***
***	***
***	***
***	***
***	***
***	***
Prolonged shutdowns or curtailments:	
***	***

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

Operations on NRSCs

Table VII-3 presents information on the NRSC operations of the responding producers and exporters in China.

*** Chinese producers reported increased capacity and production from 2017 to 2019. Capacity increased from 2017 to 2019 by 57.5 percent, and was 4.6 percent higher in interim 2020 than interim 2019. Production increased from 2017 to 2019 by 61.5 percent, and was 4.4 percent higher in interim 2020 than interim 2019.[6] Capacity utilization ranged from 93.0 percent (in interim 2020) to 97.9 percent (in 2018).

Over two-thirds of total shipments were home market shipments (all of which were commercial shipments) during the period for which data were collected. Home market commercial shipments increased by 69.0 percent from 2017 to 2019, but were 5.6 percent lower in interim 2020 than interim 2019. Home market shipments are projected to increase by 12.6 percent from 2020 to 2021.

Export shipments ranged from 23.3 percent (in interim 2019) to 32.3 percent (in interim 2020) of total shipments during the period for which data were collected. Export shipments to the United States as a share of total shipments decreased by 6.1 percentage points from 2017 to 2019, while the share of export shipments to all other markets increased by 1.9 percentage points. Both export shipments to the United States and export shipments to all other markets as a share of total shipments were higher in interim 2020 than interim 2019, by 6.8 and 2.2 percentage points, respectively. Export shipments to the United States increased by 5.7 percent from 2017 to 2019, and were 70.8 percent higher in interim 2020 than interim 2019. Export shipments to all other markets increased by 90.0 percent from 2017 to 2019, and were 26.5 percent higher in interim 2020 than interim 2019. From 2020 to 2021, export shipments to the United States are projected to decrease by 48.9 percent, while export shipments to all other markets are expected to increase by 13.0 percent.

End-of-period inventories ranged from 5.8 percent (in 2018) to 7.9 percent (in interim 2019) of total shipments during the period for which data were collected. End-of-period inventories decreased by 9.5 percent from 2017 to 2018, then increased by 44.0 percent from 2018 to 2019, for a total increase of 30.4 percent from 2017 to 2019. End-of-period inventories were 2.7 percent higher in interim 2020 than interim 2019, and are projected to decrease by 18.1 percent from 2020 to 2021.

[6] Constraints to production include ***. Foreign producer questionnaire responses, question II-3d.

Table VII-3
NRSCs: Data on industry in China, 2017-19, January to September 2019, and January to September 2020 and projection calendar years 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to September		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (1,000 units)						
Capacity	17,315	19,089	27,272	20,454	21,392	27,555	27,555
Production	16,170	18,693	26,119	19,066	19,904	26,201	25,974
End-of-period inventories	1,201	1,087	1,566	1,924	1,976	1,993	1,633
Home market shipments: Commercial shipments	11,531	13,742	19,485	13,980	13,197	17,453	19,660
Export shipments to: United States	2,871	2,994	3,035	2,067	3,532	4,403	2,250
All other markets	1,643	2,071	3,120	2,183	2,761	3,914	4,424
Total exports	4,514	5,065	6,156	4,250	6,293	8,316	6,674
Total shipments	16,044	18,807	25,640	18,230	19,490	25,769	26,334
	Ratios and shares (percent)						
Capacity utilization	93.4	97.9	95.8	93.2	93.0	95.1	94.3
Inventories/production	7.4	5.8	6.0	7.6	7.4	7.6	6.3
Inventories/total shipments	7.5	5.8	6.1	7.9	7.6	7.7	6.2
Share of shipments: Home market shipments: Commercial shipments	71.9	73.1	76.0	76.7	67.7	67.7	74.7
Export shipments to: United States	17.9	15.9	11.8	11.3	18.1	17.1	8.5
All other markets	10.2	11.0	12.2	12.0	14.2	15.2	16.8
Total exports	28.1	26.9	24.0	23.3	32.3	32.3	25.3
Total shipments	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

Alternative products

No foreign producers reported production of other products on the same equipment and machinery used to produce NRSCs.

Exports

According to GTA, the United States is the leading export market for iron or steel containers for compressed or liquefied gas, or other nongaseous materials (including NRSCs), from China (table VII-4).[7] During 2019, the United States accounted for 14.7 percent of exports, followed by Germany, accounting for 4.4 percent.

Table VII-4
Iron or steel containers for compressed or liquified gas or other materials: China exports by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	199,886	188,325	180,204
Germany	35,922	40,335	53,401
Nigeria	32,438	44,726	52,986
Korea	55,239	39,652	43,882
Vietnam	32,794	37,579	42,395
Netherlands	24,059	30,531	38,653
United Kingdom	30,688	32,240	37,385
Philippines	27,866	31,030	34,148
Malaysia	28,260	39,561	33,267
All other destination markets	544,474	615,343	706,475
All destination markets	1,011,626	1,099,320	1,222,798
	Share of value (percent)		
United States	19.8	17.1	14.7
Germany	3.6	3.7	4.4
Nigeria	3.2	4.1	4.3
South Korea	5.5	3.6	3.6
Vietnam	3.2	3.4	3.5
Netherlands	2.4	2.8	3.2
United Kingdom	3.0	2.9	3.1
Philippines	2.8	2.8	2.8
Malaysia	2.8	3.6	2.7
All other destination markets	53.8	56.0	57.8
All destination markets	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7310.29 and 7311.00 as reported by China Customs in the Global Trade Atlas database, accessed February 1, 2021.

[7] Official exports statistics under HS subheading 7310.29 and 7311.00 are highly overinclusive of the various iron or steel containers for compressed or liquefied gas, or other materials, beyond specifically NRSCs.

Table VII-5 presents information available from the USDOT's Pipeline and Hazardous Materials Safety Administration ("PHMSA") about subject foreign manufacturers in China, having received USDOT-39 approval or Transport Canada's TC-39M registration, that are eligible to export NRSCs to the U.S. market.

Table VII-5
NRSCs: Subject foreign manufacturers of steel cylinders in China, USDOT approval (as of July 2020) or Transport Canada registration (as of January 2021) status

Manufacturer	Location	Specification	Status
Cixi Longfa Aluminum Jar-Making Co. Ltd.	China	DOT-39	Good standing approval
Jiangsu Kasidi Chemical Machinery Co. Ltd.	China	DOT-39	Good standing approval
Jinhua Sinoblue Machinery Manufacturing Co. Ltd.	China	DOT-39	Good standing approval
Ningbo Runkey CGA Cylinders Co. Ltd.	China	DOT-39	Good standing approval
		TC-39M	Valid registration
Ningbo ZhengXin Fire-Fighting Equipment Co. Ltd.	China	DOT-39	Good standing approval
Sanjiang Kaiyuan Co. Ltd.	China	DOT-39	Good standing approval
Shandong Xinhao Special Equipment Co. Ltd.	China	DOT-39	Expired approval
Shanghai Ronghua High-Pressure Vessel Co. Ltd.	China	DOT-39	Terminated approval
WuYi Xilinde Machinery Manufacture Co. Ltd.	China	DOT-39	Good standing approval
Yongkang Hua Er Cylinder Manufacturing Co. Ltd. (China Flying Eagle Group Co. Ltd.)	China	DOT-39	([1])
		TC-39M	Valid registration
Zhejiang Ansheng Mechanical Manufacture Co. Ltd.	China	DOT-39	Good standing approval
Zhejiang Huijin Machinery Manufacture Co. Ltd.	China	DOT-39	Good standing approval
Zhejiang Jucheng Cylinder Co.	China	DOT-39	Good standing approval
Zhejiang Kin-Shine Technology Co. Ltd. (formerly Zhejiang Dongyang Chemical Machine Co. Ltd.)	China	DOT-39	Good standing approval

[1] Not provided.

Source: PHMSA, "Foreign Manufacturers Listing Hazmat Approvals: Cylinders (Updated July 2020)," July 15, 2020, https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2020-07/Manufacturer-cylinder-listing-July-2020.xls; Transport Canada, "Cylinder and Tube Manufacturers – Results, TC Cylinder Specifications: TC-39M," January 21, 2021, https://wwwapps.tc.gc.ca/saf-sec-sur/3/fdr-rici/cylinder/manufacturers.aspx.

U.S. inventories of imported merchandise

Table VII-6 presents data on U.S. importers' reported inventories of NRSCs. *** of the thirteen responding U.S. importers reported end-of period inventories. End-of-period inventories of NRSC imports from China decreased by *** percent from 2017 to 2018, then increased by 27.9 percent from 2018 to 2019, for an overall increase of *** percent during 2017-19. End-of-period inventories of NRSC imports from China were *** percent higher in interim 2020 than in interim 2019. The ratio of inventories to U.S. shipments of imports from China decreased by *** percentage points during 2017-19, and was *** percentage points higher in interim 2020 than interim 2019.

Table VII-6
NRSCs: U.S. importers' end-of-period inventories of imports by source, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Inventories (units); Ratios (percent)				
Imports from China					
Inventories	***	502,510	642,664	***	413,978
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	***	***	***	***	***

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 NRSCs from China after September 30, 2020. These data are presented in table VII-7. *** U.S. importer, ***, reported imports or arranged imports from China after September 30, 2020. *** U.S. importers reported imports or arranged imports from nonsubject countries after September 30, 2020.

Table VII-7
NRSCs: Arranged imports, October 2020 through September 2021

Item	Period				
	Oct-Dec 2020	Jan-Mar 2021	Apr-Jun 2021	Jul-Sept 2021	Total
	Quantity (units)				
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 trade remedy actions in third-country markets on NRSCs originating in China.[8]

[8] In the preliminary phase of these investigations, the petitioner claimed, to the best of its knowledge, not being aware of any import-injury or safeguard actions in third-country markets on NRSCs originating in China, from consulting semi-annual antidumping and countervailing duty order reports and safeguard measures reports submitted by third countries to the World Trade Organization ("WTO"), as well as conducting further research into publicly available news sources. Petitioner's postconference brief, p. 32.

Respondent importer National Refrigerants did not provide any information about third-country trade actions. National Refrigerants' postconference brief.

The petition did not provide any information about third-country trade actions. Nor did the Commission receive any such responses to its final phase foreign producer questionnaire, question II-7. Commission staff did not encounter any readily available information from consulting WTO antidumping or subsidy databases, Global Trade Alerts ("GTA") reports, or from conducting further research into publicly available news sources.

Information on nonsubject countries

Worthington has two NRSC production facilities in Portugal: at Vale de Cambra, acquired in May 1999,[9] and at Guimaraẽs, as part of its June 2017 acquisition of Amtrol-Alfa Metalomecanica S.A.[10] For the final phase of these investigations, Worthington subsequently reported ***[11] and ***.[12] *** reported importing NRSCs from ***[13] and *** reported importing NRSCs from ***.[14] Ten nonsubject foreign manufacturers have USDOT-39 or UNISO 11118 certification approval in good standing, TC-39M valid registration, or both, which provides them with eligibility to export their NRSCs to the U.S. market (table VII-8).

[9] American City Business Journals, "Worthington Industries Expands into Portugal, Czech Republic," May 24, 1999, https://www.bizjournals.com/columbus/stories/1999/05/24/daily1.html.

[10] Worthington, "Worthington Industries Acquires AMTROL," news and events, June 2, 2017, https://worthingtonindustries.com/Company/News-And-Events/News/2017/Worthington-Industries-Acquires-Amtrol.

[11] Worthington producer questionnaire response, section I-7.

[12] Worthington producer questionnaire response, section II-11.

Previously, in the preliminary phase of these investigations, Worthington reported ***. Worthington's importer questionnaire response; petitioner's postconference brief, p. 35; exh. 1, Answers to ITC Staff Questions, pp. 24, 29 to 31; exh. 2, Testimony of James R. Bowes, p. 4.

[13] *** importer questionnaire responses, section II-6a.

[14] *** importer questionnaire response, section II-6a.

Table VII-8
NRSCs: Nonsubject foreign manufacturers of steel cylinders, USDOT approval (as of July 2020) or Transport Canada registration (as of January 2021) status

Manufacturer	Location	Specification	Status
Gas Cylinder Technologies Inc.	Canada	DOT-39	Good standing approval
		TC-39M	Valid registration
Bruin Engineered Parts Inc.	Canada	TC-39M	Invalid registration
LBM Techno Gas GmbH	Germany	DOT-39	Expired approval
Bhiwadi Cylinder Pvt. Ltd.	India	DOT-39	Good standing approval
INOX India Pvt. Ltd.	India	DOT-39	Good standing approval
Mauria Udyog Ltd.	India	DOT-39	Good standing approval
Eurotre S.r.l.	Italy	UNISO 11118	Good standing approval
Gwang Sung Co. Ltd.	Korea	DOT-39	Good standing approval
Amtrol-Alfa Metalomecanica S.A.	Portugal	DOT-39, UNISO 11118	Good standing approval
Worthington Cylinders-Portugal/ Embalagens Industriais de Gas SA (EIG)	Portugal	DOT-39	Good standing approval
Advanced Material Systems Corp. (AMS)	Taiwan	UNISO 11118	Good standing approval

Source: PHMSA, "Foreign Manufacturers Listing Hazmat Approvals: Cylinders (Updated July 2020)," July 15, 2020, https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2020-07/Manufacturer-cylinder-listing-July-2020.xls; Transport Canada, "Cylinder and Tube Manufacturers – Results, TC Cylinder Specifications: TC-39M," January 21, 2021, https://wwwapps.tc.gc.ca/saf-sec-sur/3/fdr-rici/cylinder/manufacturers.aspx.

Global exports

Data on global exports of iron or steel containers for compressed or liquefied gas, or other nongaseous materials (including NRSCs), during 2017-19 are presented in table VII-9.[15] In 2019, China (20.8 percent), the United States (9.3 percent), Germany (7.7 percent), and Italy (7.4 percent) were the largest exporters (in terms of value) of steel cylinders, together accounting for 45.1 percent of all global exports.

[15] Official exports statistics under HS subheading 7310.29 and 7311.00 are highly overinclusive of the various iron or steel containers for compressed or liquefied gas, or other materials, beyond specifically NRSCs.

Table VII-9
Iron or steel containers for compressed or liquefied gas, or other materials: Global exports by leading exporters, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	532,578	550,642	548,092
China	1,011,626	1,099,320	1,222,798
Germany	442,165	491,838	451,402
Italy	384,535	429,814	436,054
Korea	291,599	288,131	286,219
Czech Republic	269,702	273,449	278,039
Thailand	269,451	283,148	245,773
United Kingdom	196,011	171,770	231,245
Turkey	152,155	178,782	208,290
Poland	138,016	173,728	169,218
Portugal	157,494	171,961	153,753
France	124,833	140,417	142,224
All other exporters	1,618,932	1,837,571	1,516,559
Total	5,589,098	6,090,571	5,889,668
	Share of value (percent)		
United States	9.5	9.0	9.3
China	18.1	18.0	20.8
Germany	7.9	8.1	7.7
Italy	6.9	7.1	7.4
Korea	5.2	4.7	4.9
Czech Republic	4.8	4.5	4.7
Thailand	4.8	4.6	4.2
United Kingdom HMRC	3.5	2.8	3.9
Turkey	2.7	2.9	3.5
Poland	2.5	2.9	2.9
Portugal	2.8	2.8	2.6
France	2.2	2.3	2.4
All other exporters	29.0	30.2	25.7
Total	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7310.29 and 7311.00 reported by various national statistical authorities in the Global Trade Atlas database, accessed February 1, 2021.

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 18587, April 2, 2020	*Non-Refillable Steel Cylinders From China; Institution of Anti-Dumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-04-02/pdf/2020-06912.pdf
85 FR 22402, April 22, 2020	*Certain Non-Refillable Steel Cylinders From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2020-04-22/pdf/2020-08539.pdf
85 FR 22407, April 22, 2020	*Certain Non-Refillable Steel Cylinders From the People's Republic of China: Initiation of Countervailing Duty Investigation*	https://www.govinfo.gov/content/pkg/FR-2020-04-22/pdf/2020-08538.pdf
85 FR 29484, May 15, 2020	*Non-Refillable Steel Cylinders From China; Determinations*	https://www.govinfo.gov/content/pkg/FR-2020-05-15/pdf/2020-10420.pdf
85 FR 53323, August 28, 2020	*Certain Non-Refillable Steel Cylinders From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2020-08-28/pdf/2020-18991.pdf

Citation	Title	Link
85 FR 68852, October 30, 2020	*Certain Non-Refillable Steel Cylinders From the People's Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2020-10-30/pdf/2020-24064.pdf
85 FR 84367, December 28, 2020	*Non-Refillable Steel Cylinders From China; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-12-28/pdf/2020-28476.pdf
86 FR 7411, January 28, 2021	*Non-Refillable Steel Cylinders from China; Revised Schedule for the Subject Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-01-28/pdf/2021-01800.pdf
86 FR 15188, March 22, 2021	*Non-Refillable Steel Cylinders from the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2021-03-22/pdf/2021-05757.pdf
86 FR 15192, March 22, 2021	*Certain Non-Refillable Steel Cylinders From the People's Republic of China: Final Affirmative Countervailing Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2021-03-22/pdf/2021-05813.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared in the United States International Trade Commission's hearing via videoconference:

Subject: Non-Refillable Steel Cylinders from China

Inv. Nos.: 701-TA-644 and 731-TA-1494 (Final)

Date and Time: March 11, 2021 - 9:30 a.m.

OPENING REMARKS:

Petitioner (**Paul C. Rosenthal**, Kelley Drye & Warren LLP)
Respondents (**Ned H. Marshak**, Grunfeld, Desiderio, Lebowitz, Silverman and Klestadt LLP)

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

Kelley Drye & Warren LLP
Washington, DC
on behalf of

Worthington Industries

James R. Bowes, General Manager, Low Pressure Cylinders, Worthington Industries

Dale Brinkman, Senior Legal Advisor, Worthington Industries

Wayne L. Powers, Product Director, Non-Refillable Cylinders, Worthington Industries

Michael T. Kerwin, Economist, Georgetown Economic Services LLC

Paul C. Rosenthal)
R. Alan Luberda)
) – OF COUNSEL
Brooke M. Ringel)
Elizabeth C. Johnson)

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

Trade Pacific PLLC
Washington, DC
on behalf of

National Refrigerants, Inc. ("National")

Maureen Beatty, Executive Vice President, National

John McDevitt, Plant Manager, National

Jonathan M. Freed)
) – OF COUNSEL
Jarrod M. Goldfeder)

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

Zhejiang Huijin Machinery Manufacture Co., Ltd.
Zhejiang Kin-Shine Technology Co., Ltd.
Zhejiang Jucheng Cylinder Co., Ltd.
Sanjiang Kaiyuan Co., Ltd.
Jinhua Sinoblue Machinery Manufacturing Co., Ltd.
Wu Yi Xilinde Machinery Manufacture Co., Ltd.

Max F. Schutzman)
) – OF COUNSEL
Ned H. Marshak)

REBUTTAL/CLOSING REMARKS:

Petitioner (**Paul C. Rosenthal**, Kelley Drye & Warren LLP)
Respondents (**Ned H. Marshak**, Grunfeld, Desiderio, Lebowitz, Silverman and Klestadt LLP; and **Jonathan M. Freed**, Trade Pacific PLLC)

-END-

APPENDIX C

SUMMARY DATA

Table C-1: NRSCs: Summary data concerning the total U.S. market.....C-3
Table C-2: NRSCs: Summary data concerning the merchant U.S. market.....C-5

Total market

Table C-1

NRSCs: Summary data concerning the U.S. total market, 2017-19, January to September 2019, and January to September 2020

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

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. total market consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. total market consumption value:									
Amount	***	***	***	***	***	▲***	▼***	▲***	▲***
Producers' share (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Importers' share (fn1):									
China	***	***	***	***	***	▼***	▼***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources	***	***	***	***	***	▼***	▼***	▲***	▲***
U.S. importers' U.S. shipments of imports from:									
China:									
Quantity	2,105,051	2,644,815	3,680,720	2,657,469	2,635,686	▲74.9	▲25.6	▲39.2	▼(0.8)
Value	36,109	26,974	35,269	25,484	27,222	▼(2.3)	▼(25.3)	▲30.8	▲6.8
Unit value	$17.15	$10.20	$9.58	$9.59	$10.33	▼(44.1)	▼(40.5)	▼(6.0)	▲7.7
Ending inventory quantity	***	502,510	642,664	***	413,978	▲***	▼***	▲27.9	▲***
Nonsubject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	***	***	***	▼***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	▼***	▼***	▼***	***
Production quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Capacity utilization (fn1)	***	***	***	***	***	▲***	▼***	▲***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Inventories/total shipments (fn1)	***	***	***	***	***	▲***	▼***	▲***	▲***
Production workers	***	***	***	***	***	▲***	▲***	▲***	▼***
Hours worked (1,000s)	***	***	***	***	***	▲***	▲***	▲***	▼***
Wages paid ($1,000)	***	***	***	***	***	▲***	▲***	▲***	▼***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▼***
Productivity (units per hour)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▼***

Table continued on next page.

Table C-1--Continued
NRSCs: Summary data concerning the U.S. total market, 2017-19, January to September 2019, and January to September 2020
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. producers'-- Continued									
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	***	***	***	***	***	▲***	▲***	▲***	▼***
Research and development 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.

Merchant market

Table C-2
NRSCs: Summary data concerning the U.S. merchant market, 2017-19, January to September 2019, and January to September 2020
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. merchant market consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. merchant market consumption value:									
Amount	***	***	***	***	***	▲***	▼***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Importers' share (fn1):									
China	***	***	***	***	***	▼***	▼***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources	***	***	***	***	***	▼***	▼***	▲***	▲***
U.S. importers' U.S. shipments of imports from:									
China:									
Quantity	2,105,051	2,644,815	3,680,720	2,657,469	2,635,686	▲74.9	▲25.6	▲39.2	▼(0.8)
Value	36,109	26,974	35,269	25,484	27,222	▼(2.3)	▼(25.3)	▲30.8	▲6.8
Unit value	$17.15	$10.20	$9.58	$9.59	$10.33	▼(44.1)	▼(40.5)	▼(6.0)	▲7.7
Ending inventory quantity	***	502,510	642,664	***	413,978	▲***	▼***	▲27.9	▲***
Nonsubject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	***	***	***	▼***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. producers':									
Commercial U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Commercial 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)	***	***	***	***	***	▼***	▼***	▼***	▼***
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

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