Granular Polytetrafluoroethylene Resin from India and Russia

Investigation Nos. 701-TA-663-664 and 731-TA-1555-1556 (Preliminary)

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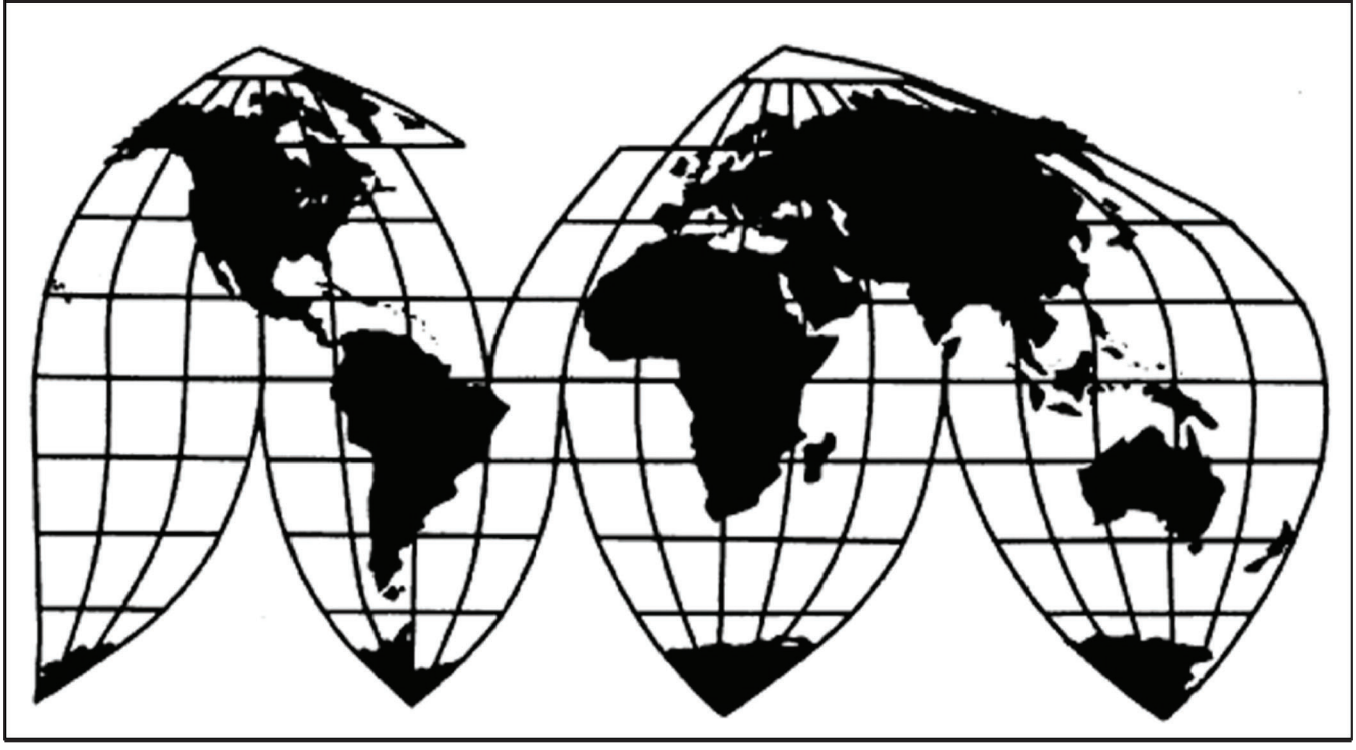
U.S. International Trade Commission



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Address all communications to
Secretary to the Commission
United States International Trade Commission
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U.S. International Trade Commission

Washington, DC 20436
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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-663-664 and 731-TA-1555-1556 (Preliminary)

Granular Polytetrafluoroethylene Resin from India and Russia

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of granular polytetrafluoroethylene resin from India and Russia, provided for in subheading 3904.61.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the governments of India and Russia.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

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

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

[2] 86 FR 10926 and 86 FR 10931 (February 23, 2021).

BACKGROUND

On January 27, 2021, Daikin America, Inc., Orangeburg, New York, filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized and LTFV imports of granular polytetrafluoroethylene resin from India and Russia. Accordingly, effective January 27, 2021, the Commission instituted countervailing duty investigation Nos. 701-TA-663-664 and antidumping duty investigation Nos. 731-TA-1555-1556 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of February 2, 2021 (86 FR 7876). In light of the restrictions on access to the Commission building due to the COVID–19 pandemic, the Commission conducted its conference through written testimony and video conference on February 17, 2021. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of granular polytetrafluoroethylene ("PTFE") resin from India and Russia that are allegedly sold in the United States at less than fair value and that are allegedly subsidized by the governments of India and Russia.

I. The Legal Standard for Preliminary Determinations

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

II. Background

Petitioner Daikin America, Inc. ("Petitioner" or "Daikin") filed the petitions in these investigations on January 27, 2021. Petitioner is a U.S. producer of granular polytetrafluoroethylene ("PTFE") resin. Petitioner submitted testimony, appeared at the staff conference[3] accompanied by counsel, and submitted a postconference brief.

One respondent entity actively participated in these investigations. Gujarat Fluorochemicals Ltd. ("GFL" or "Respondent"), a producer of granular PTFE resin in India, submitted a postconference brief.[4]

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[1] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States, 2*0 CIT 353, 354-55 (1996). No party argues that the establishment of an industry in the United States is materially retarded by the allegedly unfairly traded imports.

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

[3] In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted the conference in these investigations by video conference on February 2, 2021, and written witness testimony, as set forth in procedures provided to the parties.

[4] GFL did not appear at the conference.

U.S. industry data are based on questionnaire responses from six firms that are believed to account for all known domestic production of granular PTFE resin in 2019.[5] U.S. import data are based on questionnaire responses from 14 U.S. importers, accounting for the vast majority of imports from India and Russia in 2019 under Harmonized Tariff Schedule ("HTS") statistical reporting number 3904.61.0010.[6] Foreign industry data and related information are based on the questionnaire response of one producer/exporter of granular PTFE resin in India, accounting for approximately *** percent of granular PTFE resin production in India in 2019 and approximately *** percent of U.S. imports of subject merchandise from India in 2019;[7] and the questionnaire response of one producer/exporter of granular PTFE resin from Russia, accounting for approximately *** percent of granular PTFE resin production in Russia in 2019 and approximately *** percent of U.S. imports of subject merchandise from Russia in 2019.[8]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[9] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[10] 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."[11]

[5] Confidential Report, Memorandum INV-TT-035 (Mar. 8, 2021) ("CR/PR") at I-4. The data for domestic granular PTFE resin producers Daikin and The Chemours Company ("Chemours") are presented throughout the Report and in Table C-1. The Commission also collected trade and financial information for four U.S. compounders of granular PTFE resin: (1) AGC Chemicals Americas, Inc. ("AGC"), (2) Flontech USA LLC ("Flontech"), (3) GFL Americas LLC ("GFL Americas"), and (4) 3M Company ("3M"). The data for the compounders are presented in Appendix D of the Report. The combined data for Chemours and Daikin and all four compounders are presented in Table C-2 of the Report. The combined data for Chemours and Daikin and all of the compounders excluding GFL Americas are presented in Table C-3 of the Report.

[6] CR/PR at I-4, IV-1 n.2, and Table IV-1. HTS statistical reporting number 3904.61.0010 may contain out-of-scope merchandise; thus, the Commission has not relied on official import statistics to measure imports of granular PTFE resin. CR/PR at IV-1 n.2.

[7] CR/PR at VII-3.

[8] CR/PR at VII-9.

[9] 19 U.S.C. § 1677(4)(A).

[10] 19 U.S.C. § 1677(4)(A).

[11] 19 U.S.C. § 1677(10).

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 the U.S. Department of Commerce ("Commerce").[12] 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."[13] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[14] 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.[15] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[16] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[17] The Commission may, where

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[12] 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).

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

[14] *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).

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

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

[17] *See*, *e.g.*, *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49*; see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like (Continued…)

appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[18]

A. Scope Definition

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

> . . . granular polytetrafluoroethylene (PTFE) resin. Granular PTFE resin is covered by the scope of these investigations whether filled or unfilled, whether or not modified, and whether or not containing co-polymer, additives, pigments, or other materials. Also included is PTFE wet raw polymer. The chemical formula for granular PTFE resin is C2 F4, and the Chemical Abstracts Service (CAS) Registry number is 9002-84-0.
>
> Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise processed in a third country, including by filling, modifying, compounding, packaging with another product, or performing any other finishing, packaging, or processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the country of manufacture of the granular PTFE resin.
>
> The product covered by these investigations does not include dispersion or coagulated dispersion (also known as fine powder) PTFE.
>
> PTFE further processed into micropowder, having particle size typically ranging from 1 to 25 microns, and a melt-flow rate no less than 0.1 gram/10 minutes, is excluded from the scope of these investigations.[19]

(…Continued)
product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[18] *See*, *e.g.*, *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-96 (Final), USITC Pub. 3467 at 8 n.34 (Nov. 2001); *Torrington,* 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, co-extensive with the scope).

[19] Granular Polytetrafluoroethylene (PTFE) Resin from India and Russia: Initiation of Countervailing Duty Investigations, 86 Fed. Reg. 10931, 10934 (Feb. 23, 2021); Granular Polytetrafluoroethylene (PTFE) Resin from India and Russia: Initiation of Less-Than-Fair Value Investigations, 86 Fed. Reg. 10926, 10930 (Feb. 23, 2021).

PTFE resin is a polymer made from tetrafluoroethylene ("TFE").[20] PTFE is more commonly known as Polyflon™, a registered trademark of Daikin, and Teflon®, a registered trade name of Chemours.[21] PTFE resin is used for various applications due to its chemical inertness, heat and chemical resistance, low friction and electrical insulation properties, and functionality over a wide temperature range (-40°C to 260°C).[22] Because TFE is a volatile chemical, all domestic manufacturers of PTFE resin begin first by producing TFE and then polymerizing it to produce PTFE resin.[23]

The scope of these investigations includes a single form of PTFE resin, granular PTFE resin, which is produced through suspension polymerization in which dried PTFE resin particles are cut to achieve the desired size.[24] Granular PTFE resin is used to produce various products such as gaskets, diaphragms, corrosion-resistant lining, piping components, and lab equipment.[25] Expressly excluded from the scope of these investigations are other forms of PTFE resin such as fine powder, dispersion, and micronized powder (also referred to as micropowder).[26]

B. Arguments of the Parties

Petitioner's Argument. Petitioner argues that the Commission should find a single domestic like product, coextensive with the scope of Commerce's investigation.[27] It maintains that all granular PTFE resin products within the scope have similar physical characteristics and uses, similar channels of distribution, common manufacturing facilities, processes, and employees, similar customer and producer perceptions, and are sold within a reasonable range of similar prices.[28]

Petitioner acknowledges that the Commission found a single domestic like product consisting of all three forms of PTFE resin (granular, fine powder, and dispersion) in the 2018 final determinations concerning *PTFE Resin from China and India*; the domestic like product definition was coextensive with Commerce's scope in those investigations.[29] Petitioner emphasizes that Commerce's scope in the preliminary phase of these investigations includes

[20] CR/PR at I-11.
[21] CR/PR at I-11.
[22] CR/PR at I-11.
[23] CR/PR at I-14.
[24] CR/PR at I-17.
[25] CR/PR at I-3.
[26] CR/PR at I-8 & I-11.
[27] Petitioner's Postconf. Br. at 13.
[28] Petitioner's Postconf. Br. at 7-12.
[29] Petitioner's Postconf. Br. at 5.

only granular PTFE resin and therefore is narrower than the scope in *PTFE Resin from China and India*.[30] Petitioner argues that clear lines divide granular PTFE resin from out-of-scope PTFE resin products.[31]

GFL's Argument. Respondent GFL does not object to Petitioner's proposed domestic like product definition for purposes of the preliminary phase of these investigations. However, GFL suggests that the Commission should consider in any final phase of the investigations defining the domestic like product more broadly to encompass two other forms of PTFE (fine powder PTFE resin and dispersion PTFE resin) that are excluded from the scope definition.[32]

C. Analysis

Based on the current record, we define a single domestic like product consisting of granular PTFE resin coextensive with the scope for purposes of the preliminary phase of these investigations. As noted above, our analysis starts with the scope of investigation.

Physical Characteristics and Uses. All granular PTFE resin within the scope has the same chemical composition and share a similar molecular makeup consisting of large polymerized particles that are milled to a specific size.[33] All granular PTFE resin within the scope is produced to the same industry specifications (ASTM D-4894).[34] In-scope granular PTFE resin, often referred to as molding powder, typically is used in compression molds to form stock shapes such as billets or sheets for gaskets, diaphragms, corrosion-resistant linings, piping components, and lab equipment.[35] [36]

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[30] Petitioner's Postconf. Br. at 5.

[31] Petitioner's Postconf. Br. at 6-13.

[32] GFL Postconf. Br. at 1-3, 8-9, and 12.

[33] CR/PR at I-18 & Table I-1.

[34] CR/PR at I-11 n.36.

[35] CR/PR at I-3; Conf. Tr. at 15 (Smith).

[36] As for the out-of-scope forms of PTFE resin, although the various forms of PTFE resin are produced from TFE and have similar chemical formulas, they have different appearances, different methods of manufacture to final product, and are produced to different ASTM specifications. CR/PR at I-13-14, Table I-1 & Figure I-3. Each form of PTFE resin is manufactured in a range of grades and specific grades are devoted to particular end uses. CR/PR at I-13. There is some overlap in particle size and bulk density between granular and fine powder PTFE resin. CR/PR at Table I-1. While granular and fine powder PTFE resin look similar in that they are both dry granules, fine powder will smear when rubbed and has characteristics that allow it to be used in applications where granular PTFE resin cannot be easily used. CR/PR at I-13 & Figure I-3; Petitioner's Postconf. Br. at 7-8. Dispersion PTFE resin is unique compared to other forms of PTFE in that it undergoes an emulsion reaction (also called dispersion reaction). CR/PR at I-18 & Figure I-3; Petitioner's Postconf. Br. at 7. All PTFE resin regardless of form shares some of the same properties, including inertness, heat resistance, and low friction. CR/PR at I-11. According to Petitioner, however, granular PTFE resin is stiffer, better able to hold its shape, and less prone to shearing and fibrillation than PTFE resin in fine powder or dispersion forms. Petitioner's (Continued…)

Manufacturing Facilities, Production Processes, and Employees. All domestically produced granular PTFE resin within the scope is manufactured through a suspension polymerization process.[37] Daikin produces all in-scope granular PTFE resin at the same facility, using the same production processes and equipment, and the same employees.[38] [39]

Channels of Distribution. Domestically produced granular PTFE resin within the scope was sold mainly to end-users, with the share ranging from *** percent to *** percent of the domestic industry's U.S. shipments during the period of investigation ("POI"), with the remainder sold to distributors (the share ranging from *** percent to *** percent), and very small quantities sold to fillers/other processors (the share ranging from *** percent to *** percent).[40] [41]

Interchangeability. An industry witness testified that all domestically produced granular PTFE resin within the scope is generally interchangeable.[42] [43]

Producer and Customer Perceptions. According to Petitioner, customers and producers perceive granular PTFE resin as comprising its own distinct product category.[44]

(…Continued)
Postconf. Br. at 7-8. PTFE in all forms can be used to manufacture film, pipe liners, tubing, and gaskets, although Petitioner maintains that there are some distinct end uses for which only one form of PTFE is generally used, such as dispersion PTFE to coat cookware or fine powder PTFE to make materials such as glass fabric laminates and filtration membranes. Petitioner's Postconf. Br. at 8.

[37] Dispersion PTFE resin is produced by dispersion polymerization that suspends the PTFE particles, resulting in a white solution. CR/PR at I-18. Fine powder PTFE resin is also a dried PTFE resin product, but one in which the particle sizes are generally larger than granular PTFE resin. *Id*. Fine powder PTFE resin is also produced through dispersion polymerization and undergoes the additional steps of agglomeration, separation, and drying to produce the fine powder product. *Id*. Fine powder PTFE is often extruded as a paste to make materials such as glass fabric laminate and filtration membranes. CR/PR at I-14 n.57. Micronized powder PTFE resin represents low molecular weight PTFE resin, which results in micronized powder having lower strength and tensile properties compared to other forms of PTFE resin. CR/PR at I-12.

[38] CR/PR at I-19; Conf. Tr. at 113 (Rubin).

[39] Although Daikin produces out-of-scope fine powder and dispersion PTFE resin at the same facility where it produces in-scope granular PTFE resin, Daikin uses different manufacturing processes, different equipment, and different employees for producing out-of-scope PTFE resin products. CR/PR at I-9; Petitioner's Postconf. Br. at 10.

[40] CR/PR at Table II-1.

[41] Daikin asserts that most small and large purchasers purchase and specialize in only one form of PTFE resin. Petitioner's Postconf. Br. at 10.

[42] Conf. Tr. at 44-45 & 82-83 (Rubin).

[43] According to Petitioner, granular PTFE resin and other forms of PTFE resin are not interchangeable since they have different properties and are processed differently in end-use manufacturing, with granular PTFE resin generally molded into shapes, fine powder PTFE extruded in paste form, and dispersion PTFE resin sprayed or coated onto another item. Petitioner's Postconf. Br. at 9-10.

Price. The pricing data indicate that there were appreciable variations in quarterly prices between the two domestically produced granular PTFE resin products during the POI.[45] [46]

Conclusion. All granular PTFE resin within the scope has the same basic chemistry, has the same physical properties, is produced to the same ASTM specifications, and uses the same manufacturing facilities, production processes, and employees. In-scope granular PTFE resin is sold through the same channels of distribution, primarily being sold directly to end users, though there are some variations in pricing. The available information indicates that all granular PTFE resin within the scope generally is used in the same applications and is interchangeable to some degree, and that customers and producers perceive all in-scope product as comprising a single product category.[47]

In light of the above record evidence, as well as the limited scope of these investigations covering a single form of PTFE resin (*i.e.*, granular PTFE resin),[48] and the lack of any party argument to the contrary, we define a single domestic like product consisting of

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(…Continued)

[44] Petitioner's Postconf. Br. at 10-11; Conf. Tr. at 22 (Smith); Petitions at Vol. I, Exhs. I-16-24.

[45] CR/PR at Tables V-3-6.

[46] According to Petitioner, domestically produced granular PTFE resin generally is lower priced than fine powder or dispersion PTFE resin. Petitioner's Postconf. Br. at 12. The Commission did not collect pricing data for out-of-scope fine powder or dispersion PTFE resin in these preliminary phase investigations.

[47] As for whether to expand the domestic like product to include other forms of PTFE resin, we decline to do so in these investigations. Although the scope of previous investigations of PTFE involving India and China included granular PTFE resin as well as other forms of PTFE resin (fine powder and dispersion), the scope in these investigations is limited to granular PTFE resin. As noted above, the Commission's like product analysis begins with the scope. Based on the record of the preliminary phase of these investigations, we find there are differences between granular PTFE resin and other forms of PTFE resin, particularly with respect to some physical characteristics and uses; manufacturing processes, equipment, and employees; interchangeability; and producer and customer perceptions. Moreover, no party argued for expanding the domestic like product beyond granular PTFE resin for purposes of the preliminary phase of these investigations.

[48] As discussed above, the scope in these preliminary phase investigations includes only granular PTFE resin and expressly excludes two forms of PTFE resin (fine powder and dispersion), which were within the scope along with granular PTFE resin in the 2018 investigations concerning *Polytetrafluoroethylene Resin from China and India*, Inv. Nos. 701-TA-588 and 731-TA-1392-1393 (Final), USITC Pub. 4801 (July 2018). Reflecting the broader scope and different record in 2018 *PTFE Resin from China and India,* the Commission defined a single domestic like product including all three forms of PTFE resin (granular, fine powder, and dispersion). USITC Pub. 4801 at 5-6 & 8-10.

granular PTFE resin coextensive with the scope of these investigations for purposes of these preliminary determinations.[49]

IV. Domestic Industry and Related Parties

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."[50] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

These investigations raise two separate domestic industry issues. The first involves whether certain processors of granular PTFE resin, commonly known as "compounders" or "fillers," engage in sufficient production-related activities to be considered producers of the domestic like product.[51] The second concerns whether appropriate circumstances exist to exclude any domestic producers from the domestic industry pursuant to the related parties provision.

A. Sufficient Production-Related Activities

In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm's U.S. production-related activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.[52]

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[49] If parties wish to pursue domestic like product arguments in any final phase of these investigations, they should provide their suggested definitions with specificity for data collection in their comments on draft questionnaires. 19 C.F.R. § 207.20(b).

[50] 19 U.S.C. § 1677(4)(A).

[51] Compounders are firms that mix granular PTFE resin with another substance. CR/PR at I-13. Compounders and fillers all perform similar functions and the terms are used interchangeably by Petitioner in these investigations. *See, e.g.*, Conf. Tr. at 38 (Meisner & Rubin). For purposes of this opinion, we refer to all processors of granular PTFE resin as "compounders."

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

1. Arguments of the Parties

Petitioner's Arguments. Petitioner argues that the Commission should define the domestic industry as consisting solely of two granular PTFE resin producers (Chemours and Daikin), and should not include compounders.[53] According to Petitioner, it takes $50-100 million dollars to establish a granular PTFE resin production facility, whereas the capital burden to become a compounder of materials with granular PTFE resin is significantly lower.[54] It contends that processing by compounders does not alter the chemical or polymeric structure of the product, whereas the manufacturing operations by Chemours and Daikin involves greater technical expertise, including a series of chemical reactions and conversions required to manufacture TFE, an extremely volatile and dangerous gas.[55] Petitioner further contends that the information gathered by the Commission in the 2018 final investigations of *PTFE from China and India*[56] supports a finding that compounders do not engage in sufficient production related activities to be treated as domestic producers in these preliminary phase investigations.[57] Finally, Petitioner argues that the available questionnaire response in the preliminary phase of these investigations indicates that compounders rely heavily on imported granular PTFE for their compounding operations and should not be included as part of the domestic industry.[58]

GFL's Arguments. GFL did not address the issue of sufficient production-related activities.

2. Analysis

Source and extent of the firm's capital investment. Chemours' and Daikin's capital investments ranged from $*** during 2017-2019, whereas compounders' capital investments ranged from $***.[59] Chemours and Daikin did not report R&D expenses during 2017-2019; processors' R&D expenses ranged from $*** from 2017 to 2019.[60]

Technical expertise involved. All granular PTFE resin production by Chemours and Daikin begins with volatile chemicals, notably TFE, which must be contained, resulting in a

[53] Petitioner's Postconf. Br. at 13-16.

[54] Petitioner's Postconf. Br. at 14.

[55] Petitioner's Postconf. Br. at 14.

[56] In the 2018 final determinations in *PTFE Resin from China and India*, the Commission found that the processors or PTFE resin were engaged in sufficient production-related activities to be included in the domestic industry. USITC Pub. 4801 at 13.

[57] Petitioner's Postconf. Br. at 14-15.

[58] Petitioner's Postconf. Br. at 15-16.

[59] CR/PR at Revised Table D-4 (INV-TT-039, Mar. 11, 2021).

[60] CR/PR Revised Table D-4 (INV-TT-039, Mar. 11, 2021).

highly controlled process that ends with granular PTFE resin.[61] By contrast, PTFE processing by compounders begins with granular PTFE resin and appears to utilize many diverse formulas and recipes for manufacturing compounded granular PTFE resin.[62] Compounders reported that their processing operations are relatively complex and require some amount of technical expertise, including by engineers and skilled machine operators.[63] Hourly wages paid to production and related workers ("PRWs") engaged in processing activities for compounders were generally *** higher than the hourly wages paid to PRWs engaged in granular PTFE production during the POI.[64]

Value added to the product in the United States. The value added for granular PTFE manufacturing ranged from *** percent of the total cost of goods sold ("COGS") during 2017-2019, and value added for granular PTFE compounding operations ranged from *** percent.[65]

Employment levels. The number of PRWs in granular PTFE resin manufacturing was *** in 2017, *** in 2018, *** in 2019, *** in interim 2019, and *** in interim 2020.[66] The number of PRWs in granular PTFE processing operations by compounders was *** in 2017, *** in 2018, *** in 2019, *** in interim 2019, and *** in interim 2020.[67]

Quantity and type of parts sourced in the United States. Domestically sourced raw materials for granular PTFE resin production by Daikin and Chemours accounted for *** during 2017-2019 whereas they accounted for *** in processing operations by compounders.[68] Between *** and *** percent of compounders' production used domestically sourced PTFE; production using subject PTFE ranged between *** percent and *** percent of their total production (the remainder used nonsubject PTFE).[69]

Conclusion. We find that the operations of compounders constitute sufficient production-related activities to constitute domestic production. The range for capital investment for compounders' processing operations was somewhat higher than for granular PTFE resin production by Chemours and Daikin. Compounders reported substantial research and development expenses, while Daikin and Chemours did not report any such expenses.

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[61] CR/PR at I-14-17.

[62] *See e.g.*, AGC U.S. Producer Questionnaire at V-1a.

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

[64] Hourly wages paid to PRWs engaged in processing activities for compounders were $*** in 2017, $*** in 2018, $*** in 2019, $*** in January-September 2019 ("interim 2019"), and $*** in January-September 2020 ("interim 2020"). CR/PR at Table D-12. Hourly wages paid to PRWs engaged in granular PTFE production were $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020. CR/PR at Table III-8.

[65] CR/PR at Table D-4.

[66] CR/PR at Table III-8.

[67] CR/PR at Table D-12.

[68] CR/PR at Table D-4.

[69] CR/PR at Table D-7.

Similarly, the information compounders submitted indicates that the degree of technical expertise required for compounders' processing operations appears to be substantial, albeit less complex than technical expertise required for granular PTFE resin production operations by Chemours and Daikin. The number of PRWs involved in granular PTFE processing completed by compounders is substantially greater than the number of PRWs in granular PTFE resin production by Chemours and Daikin. By value, domestically sourced raw materials for granular PTFE resin production by Chemours and Daikin were *** than domestically sourced raw materials for compounders' processing operations, but the overall value of domestically sourced raw materials for granular PTFE resin by compounders was not insubstantial. Moreover, a substantial share of compounders' production used domestically sourced PTFE. Although the data are somewhat mixed, in light of the compounders' levels of employment, the value added by compounders' processing operations, the degree of technical expertise that appears to be required for compounding operations (including evidence that compounders' PRWs are paid comparable hourly wages to granular PTFE resin producers'), and compounders' sourcing of granular PTFE resin, on balance we find that compounders engage in sufficient production-related activity to be considered producers of the domestic like product.[70]

B. Related Parties

We must also determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to Section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[71] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[72]

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[70] We intend to further examine this issue in any final phase investigations.

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

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

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

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

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

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

(Continued…)

Based on the current record, three firms are subject to the related parties provision in the preliminary phase of these investigations. Petitioner Daikin is a related party by virtue of its affiliation with a U.S. importer of subject merchandise.[73] Two compounders (***) are subject to the related parties provision since they both imported subject merchandise during the POI.[74] [75]

1. Arguments of the Parties

Petitioner's Arguments. Daikin argues that, as Petitioner in these investigations, its interests are in domestic production and therefore it should not be excluded from the domestic industry regardless of whether its affiliate imported subject merchandise during the POI.[76] Daikin does not contend that appropriate circumstances exist to exclude any compounders from the domestic industry.[77]

GFL's Arguments. GFL did not address the issue of related parties.

(…Continued)

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

[73] CR/PR at III-2, III-8, & Table III-2; Petitioner's Postconf. Br., Answers to Staff Questions at 13.

[74] CR/PR at Table D-11.

[75] *** did not import subject merchandise, but purchased subject imports from India and Russia during the POI. CR/PR at III-8 n.13 and Table D-11. The Commission has concluded that a domestic producer that does not itself import subject merchandise or does not share a corporate affiliation with an importer may nonetheless be deemed a related party if it controls large volumes of imports. *See, e.g., Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-248, 731-TA-262-263, 265 (Fourth Review), USITC Pub. 4655 at 11 (Dec. 2016). The Commission has found such control to exist where, for example, the domestic producer was responsible for a predominant proportion of an importer's purchases and the importer's imports were substantial. *Id. See, e.g.*, *Certain Seamless Carbon and Alloy Steel Standard, Line, and Pressure Pipe from Argentina, Brazil, Germany, and Italy*, Inv. Nos. 701-TA-362 and 731-TA-707-710 (Review), USITC Pub. 3429 at 8-9 (June 2001).

*** purchases of subject imports accounted for only *** percent of purchases of subject merchandise from *** in 2019, and *** was not among *** ten largest customers during the POI. *See* *** U.S. Importer Questionnaire at III-22; *** U.S. Importer Questionnaire at III-22. *** purchases accounted for only *** percent of purchases of subject merchandise from *** in 2019. *See* *** U.S. Importer Questionnaire at III-22. Accordingly, based on the current record, neither *** nor *** qualify as a related party because the volume of each of their subject import purchases was not sufficiently large enough, nor does other record evidence otherwise establish either's control of an importer.

[76] Petitioner's Postconf. Br., Answers to Staff Questions at 13.

[77] Petitioner's Postconf. Br., Answers to Staff Questions at 13.

2. Analysis

We discuss below for each of the related party producers whether appropriate circumstances exist to exclude it from the domestic industry.

Daikin. Daikin is the sole petitioner in these investigations; it accounted for *** percent of reported U.S. production of granular PTFE resin in 2019.[78] During the POI, Daikin's sister company, Heroflon USA, imported subject merchandise from Russia.[79] Daikin's U.S. production was considerably larger than its affiliate firm's imports in 2017 and 2018, although its affiliate's imports nearly equaled Daikin's U.S. production in 2019 and interim 2019, and remained at a relatively high level in interim 2020.[80] Its affiliate firm's subject imports from *** were equivalent to *** percent of Daikin's domestic production in 2017, *** percent of its domestic production in 2018, *** percent of its domestic production in 2019, *** percent of its domestic production in interim 2019, and *** percent of its domestic production in interim 2020.[81] Daikin's affiliate Heroflon USA states that it imported subject merchandise from *** in order to ***.[82] Daikin reported capital expenditures totaling $*** in 2018, but did not report any other capital expenditures during the POI.[83] As the sole petitioner and the *** domestic producer of granular PTFE resin, Daikin's primary interest appears to be in domestic production and not importation. Moreover, there is no indication in the current record that Daikin's domestic production operations benefited from its corporate relationship with its affiliate, or that the relationship shielded it from the effects of subject import competition.[84] We find that appropriate circumstances do not exist to exclude Daikin from the domestic industry as a related party.

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[78] CR/PR at Table III-1.

[79] CR/PR at III-2, III-8, Table III-2, and Table III-7; Petitioner's Postconf. Br., Answers to Staff Questions at 13.

[80] Daikin's U.S. production was *** pounds in 2017 and 2018, *** pounds in 2019, *** pounds in interim 2019, and *** pounds in interim 2020. CR/PR at Table III-7. During the POI, its sister company Heroflon USA's imports of subject merchandise were *** pounds in 2017, *** pounds in 2018, *** pounds in 2019, *** pounds in interim 2019, and *** pounds in interim 2020. *Id*.

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

[82] CR/PR at Table III-7. Daikin's capacity utilization was *** percent in 2017, *** percent in 2018, *** percent in 2019; it was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table III-4.

[83] Daikin's U.S. Producer Questionnaire at III-13a.

[84] While the ratio of Daikin's affiliate's subject imports to Daikin's domestic production increased sharply in the latter portions of the POI, Daikin's operating losses were at period or near-period lows in 2019, interim 2019, and interim 2020. CR/PR at Table VI-4. Daikin's operating income margin was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020; it was lower than the industry average throughout the POI. CR/PR at Table VI-4.

***. *** is a compounder that imported subject merchandise during the POI.[85] *** accounted for *** percent of reported domestic compounding operations for granular PTFE resin in 2019.[86] It *** the petitions.[87] *** imported *** pounds of subject merchandise in 2017 and *** pounds in 2018; it did not import subject merchandise for the remainder of the POI.[88] Its ratio of subject imports to domestic production was *** percent in 2017 and *** percent in 2018.[89] *** also reported significant capital expenditures and research and development expenses during the POI.[90] In light of the above, particularly *** low ratios of subject imports to domestic production, we find that appropriate circumstances do not exist to exclude *** from the domestic industry as a related party.

***. *** is a compounder that ***.[91] It accounted for *** percent of reported domestic compounding operations for granular PTFE resin in 2019, ***.[92] It ***.[93] *** imported *** pounds of subject merchandise *** in 2017, *** pounds in 2018, *** pounds in 2019, *** pounds in interim 2019, and *** pounds in interim 2020.[94] *** ratio of subject imports to domestic production was *** percent in 2017 and *** percent in 2018; it ceased domestic compounding operations for granular PTFE in 2018 and was only an importer of subject merchandise in 2019 and interim 2020.[95] *** reports that it ***.[96] *** and *** percent of its compounding activities are performed using subject imports.[97] In the two years of the POI that it had domestic compounding operations (*i.e.*, 2017 and 2018), *** volume of subject imports far exceeded its domestic production; its imports of subject merchandise remained substantial in 2019 and in the interim periods after ***.[98] Thus, *** principal interest is in the importation of subject merchandise, and we therefore find that appropriate circumstances exist to exclude *** from the domestic industry as a related party.

[85] CR/PR at Table D-11.
[86] CR/PR at Table D-1.
[87] CR/PR at Table D-1.
[88] CR/PR at Table D-11.
[89] CR/PR at Table D-11.
[90] *** reported capital expenditures were $*** in 2017, *** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020; its reported research and development expenses were $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020. *** U.S. Producer Questionnaire at V-8a.
[91] CR/PR at Tables D-2 & D-11.
[92] CR/PR at Tables D-1 & D-11.
[93] CR/PR at Table D-1.
[94] CR/PR at Table D-11.
[95] CR/PR at Table D-11.
[96] CR/PR at Table D-11.
[97] CR/PR at Table D-2.
[98] CR/PR at Table D-11.

C. Conclusion

For the foregoing reasons, and in light of our domestic like product definition, we define a single domestic industry consisting of all U.S. producers and compounders of granular PTFE resin, and find that appropriate circumstances exist to exclude *** from the domestic industry as a related party.

V. Cumulation[99]

For purposes of evaluating the volume and effects for a determination of reasonable indication of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

[99] 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)). The United States Trade Representative ("USTR") no longer designates India to be a developing country subject to the 4 percent negligibility threshold for countervailing duty investigations. *See Designations of Developing and Least-Developed Countries Under the Countervailing Duty Law*, 85 Fed. Reg. 7613, 7615-16 (USTR Feb. 10, 2020).

Questionnaire response data indicate that from January 2020 through December 2020, the most recent 12-month period for which data are available preceding the filing of the petitions, subject imports from India accounted for *** percent of total granular PTFE resin imports, and subject imports from Russia accounted for *** percent of total granular PTFE resin imports. CR/PR at Table IV-3. Because imports from each subject country are clearly above negligible levels, we find that subject imports from India and Russia are not negligible for purposes of both the antidumping duty investigations and countervailing duty investigations.

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[100]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[101] Only a "reasonable overlap" of competition is required.[102]

Based on the record of the preliminary phase of these investigations, we consider subject imports from India and Russia on a cumulated basis because the statutory criteria for cumulation are satisfied.[103] As an initial matter, Petitioner filed the antidumping and countervailing duty petitions with respect to both subject countries on the same day, January 27, 2021.[104] The record also indicates a reasonable overlap of competition among subject imports from the subject countries, and between subject imports from each source and the domestic like product, for reasons described below.

Fungibility. The record in the preliminary phase of these investigations indicates that granular PTFE resin is at least moderately fungible, regardless of source. Both responding U.S. producers reported that product from all sources was frequently interchangeable.[105] Importers were more divided on this question. A majority of importers reported that product from all sources were sometimes or never interchangeable, but several importers for all comparisons

[100] See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan, Inv. Nos. 731-TA-278-80 (Final), USITC Pub. 1845 (May 1986), aff'd, Fundicao Tupy, S.A. v. United States, 678 F. Supp. 898 (Ct. Int'l Trade), aff'd, 859 F.2d 915 (Fed. Cir. 1988).

[101] *See*, *e.g.*, *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[102] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy*, 678 F. Supp. at 902); *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[103] Petitioner argues that the Commission should cumulate imports from both subject countries for purposes of its material injury analysis because the antidumping and countervailing duty petitions in these investigations were filed on the same day and there is a reasonable overlap of competition between subject imports and the domestic like product. Petitioner's Postconf. Br. at 16-21. GFL did not present any arguments related to cumulation with respect to the Commission's material injury determinations.

[104] None of the statutory exceptions to cumulation applies.

[105] CR/PR at Table II-10.

among the domestic like product and subject imports reported that product from all sources was always or frequently used interchangeably.[106]

Channels of Distribution. The domestic like product was sold predominantly to end-users during the POI, but was also sold in appreciable quantities to distributors.[107] Subject imports from India were sold predominantly to end-users during the POI, but were also sold in appreciable quantities to fillers/other processors.[108] Subject imports from Russia were sold predominantly to fillers/other processors, but were also sold in appreciable quantities to end-users during the POI.[109] Consequently, a substantial proportion (at least *** percent) of each year's shipments of granular PTFE resin from domestic producers, subject imports from India, and subject imports from Russia were sold to end users.[110]

Geographic Overlap. U.S. producers reported selling granular PTFE resin to all regions of the United States.[111] Subject imports from India and Russia also were sold in all regions of the United States during the POI.[112]

Simultaneous Presence in Market. The record indicates that subject imports from India and Russia and the domestic like product were present in the U.S. market throughout the POI.[113]

Conclusion. The record supports finding that subject imports from each subject country are fungible with the domestic like product and each other, and that subject imports from each subject country and the domestic like product have been simultaneously present in the U.S. market. The available data also indicate substantial overlaps in channels of distribution and geographic presence. Based on this evidence and the lack of contrary argument, we find that

[106] CR/PR at Table II-16. With respect to comparisons between the domestic like product and subject imports from India, *** of *** importers reported that they were sometimes or never interchangeable, while *** of *** responding importers reported that subject imports from India were either always or frequently interchangeable. *Id*. With respect to comparisons between the domestic like product and subject imports from Russia, *** of *** importers reported that they were sometimes or never interchangeable, while *** of *** responding importers reported that subject imports from Russia were either always or frequently interchangeable. *Id*. For comparisons between subject imports from India and Russia, *** of *** responding importers reported that they were sometimes interchangeable, while *** of *** responding importers reported that product from both subject countries was frequently interchangeable. *Id*.

[107] CR/PR at Table II-1. The domestic like product was sold in small quantities to fillers/other processors in 2019, interim 2019, and interim 2020. *Id*.

[108] CR/PR at Table II-1.

[109] CR/PR at Table II-1.

[110] CR/PR at Table II-1.

[111] CR/PR at Table II-2.

[112] CR/PR at Table II-2.

[113] CR/PR at Tables III-5, IV-6, and D-8.

there is a reasonable overlap of competition between the domestic like product and imports from each subject country and between imports from each subject country.

Accordingly, for our analysis of whether there is a reasonable indication of material injury by reason of subject imports, we cumulate subject imports from India and Russia.

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

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[114] 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.[115] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[116] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[117] 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]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[119] 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.[120] 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

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[114] 19 U.S.C. §§ 1671b(a), 1673b(a).

[115] 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).

[116] 19 U.S.C. § 1677(7)(A).

[117] 19 U.S.C. § 1677(7)(C)(iii).

[118] 19 U.S.C. § 1677(7)(C)(iii).

[119] 19 U.S.C. §§ 1671b(a), 1673b(a).

[120] *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).

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.[121]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[122] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[123] Nor does

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[121] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

[122] SAA at 851-52 ("{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.

[123] 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.
(Continued…)

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.[124] It is clear that the existence of injury caused by other factors does not compel a negative determination.[125]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[126] 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." [127] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[128]

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

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(…Continued)
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.").

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

[125] *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.").

[126] *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*.

[127] *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.

[128] *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.").

evidence standard.[129] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[130]

B. Conditions of Competition and the Business Cycle

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

1. Demand Conditions

Demand for granular PTFE resin is driven by demand for the downstream products in which it is used and tends to track overall growth in gross domestic product.[131] Reported end uses for granular PTFE resin include seals, gaskets, bearings, films, tapes, and PTFE micro-powder.[132] Granular PTFE resin generally accounts for a large share of the cost of the products in which it is used.[133]

The majority of market participants reported that U.S. demand for granular PTFE resin increased since January 1, 2017.[134] Demand as measured by apparent U.S. consumption declined overall by *** percent from 2017 to 2019, initially increasing from *** pounds in 2017 to *** pounds in 2018, and then declining to *** pounds in 2019.[135] Apparent U.S. consumption was *** percent lower in interim 2020, at ***, than in interim 2019, at *** pounds.[136]

2. Supply Conditions

The domestic industry consists of two PTFE producers — Chemours (the largest individual domestic producer) and Daikin — and three compounders.[137] The domestic industry was the second-largest supplier of granular PTFE resin to the U.S. market in 2017, and the third-

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

[130] *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.").

[131] CR/PR at II-6-7 & Figure II-1.

[132] CR/PR at II-6.

[133] CR/PR at II-7. Reported cost shares for some end uses ranged from 21 percent for seals to 100 percent for PTFE micro-powders. *Id*.

[134] CR/PR at Table II-4.

[135] CR/PR at Tables IV-7 & C-3.

[136] CR/PR at Tables IV-7 & C-3.

[137] CR/PR at Table C-3. As discussed above, we have excluded a compounder, ***, from the domestic industry as a related party. ***. CR/PR at Table D-6.

largest source of supply in 2018, 2019, interim 2019, and interim 2020.[138] The domestic industry's share of apparent U.S. consumption consistently declined during the POI from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; its share of apparent U.S. consumption was lower in interim 2020, at *** percent, than in interim 2019, at *** percent.[139]

Cumulated subject imports were the third-largest source of supply to the U.S. market in 2017, and the largest source of supply for the remainder of the POI.[140] Their share of apparent U.S. consumption increased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; their share of apparent U.S. consumption was higher in interim 2020, at *** percent, than in interim 2019, at *** percent.[141]

Nonsubject imports were the largest source of supply to the U.S. market in 2017 and the second-largest source for the remainder of the POI.[142] Their share of apparent U.S. consumption declined from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; their share of apparent U.S. consumption was lower in interim 2020, at *** percent, than in interim 2019, at *** percent.[143] The largest sources of nonsubject imports during 2019 were Germany and China.[144]

3. Substitutability and Other Conditions

We find that there is at least a moderate degree of substitutability between domestically produced granular PTFE resin and granular PTFE resin imported from subject sources.[145] Both responding domestic producers (Daikin and Chemours) reported that all granular PTFE resin was frequently interchangeable regardless of source.[146] As discussed above, importers were more divided on this question. A majority of importers reported that product from all sources were only sometimes or never interchangeable,[147] although several

[138] CR/PR at Table C-3.
[139] CR/PR at Table C-3.
[140] CR/PR at Table C-3.
[141] CR/PR at Table C-3.
[142] CR/PR at Table C-3.
[143] CR/PR at Table C-3.
[144] CR/PR at II-5.
[145] CR/PR at Table II-6. The degree of substitution between domestic and imported granular PTFE 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.). CR/PR at II-8.
[146] CR/PR at Table II-6.
[147] CR/PR at Table II-6. Questionnaire responses from certain importers indicated that there may be differences in quality between the domestic like product and subject imports from India and Russia; we intend to examine this issue, and other possible non-price factors affecting purchasing decisions, further in any final phase of these investigations.

importers for all comparisons among the domestic like product and subject imports reported that product from all sources was always or frequently used interchangeably.[148]

The record further indicates that price is one of several important factors in purchasing decisions for granular PTFE resin. Purchasers responding to the lost sales and lost revenue survey named customer specifications, price, and quality as the three most important factors in purchasing decisions.[149] Customer specifications was most frequently cited as the most important purchasing factor, while price was most frequently cited as the third most important factor.[150] In comparing domestically produced granular PTFE resin and subject imports, both responding U.S. producers and most importers reported that differences other than price were sometimes significant in purchasing decisions.[151]

Granular PTFE resin is produced from TFE.[152] Due to its unstable nature, TFE is generally not transported and domestic producers of granular PTFE resin produce both TFE and downstream products, including granular PTFE resin, on the same premises.[153] On a per pound basis, raw material costs for domestically produced granular PTFE resin increased during the POI, but were relatively stable as a share of total COGS.[154]

U.S. producers mostly sold granular PTFE resin using long-term and short-term contracts, with the remainder sold mainly using annual contracts, and small amounts using spot sales.[155] By contrast, importers mostly sold subject merchandise using spot sales, with the remainder sold using short-term and annual contracts.[156]

The domestic like product was sold predominantly to end-users during the POI, but was also sold in appreciable quantities to distributors.[157] Subject imports from India were sold predominantly to end-users during the POI, but were also sold in appreciable quantities to

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

[149] CR/PR at II-9 & Table II-5.

[150] CR/PR at Table II-5.

[151] CR/PR at Table II-7.

[152] CR/PR at I-14.

[153] CR/PR at I-14.

[154] CR/PR at Table VI-1. On a per pound basis, raw material costs increased from $*** in 2017 to $*** per pound in 2018 and $*** per pound in 2019; they were lower in interim 2020, at $*** per pound, than in interim 2019, at $*** per pound. *Id*. As a share of total COGS, raw material costs were *** percent in 2017, *** percent in 2019, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. *Id*.

[155] CR/PR at Table V-2. In 2019, *** percent of U.S. producers' commercial U.S. shipments were sold using long-term contracts, *** percent using short-term contracts, *** percent using annual contracts, and *** percent using spot sales. *Id*.

[156] CR/PR at Table V-2. In 2019, *** percent of U.S. importers' commercial U.S. shipments were sold using spot sales, *** percent using short-term contracts, and *** percent using annual contracts. *Id*.

[157] CR/PR at Table II-1.

fillers/other processors.[158] Subject imports from Russia were sold predominantly to fillers/other processors, but were also sold in appreciable quantities to end-users during the POI.[159]

Domestically produced granular PTFE resin and subject imports from both India and Russia were sold overwhelmingly from inventory during the POI, with small quantities produced to order.[160]

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[161]

Cumulated subject imports had a substantial and increasing presence in the U.S. market during the POI. The volume of cumulated subject imports increased overall by *** percent from 2017 to 2019, initially increasing from *** pounds in 2017 to *** pounds in 2018, and declining to *** pounds in 2019.[162] The volume of cumulated subject imports was *** percent higher in interim 2020, at *** pounds, than in interim 2019, at *** pounds.[163] The market share of cumulated subject import shipments increased by *** percentage points from 2017 to 2019, increasing from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; it was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent.[164] The ratio of cumulated subject imports to domestic production increased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; it was higher in interim 2020, at *** percent, than in interim 2019, at *** percent.[165]

For purposes of these preliminary determinations, we find that the volume of cumulated subject imports and the increase in that volume are significant in absolute terms and relative to consumption and production in the United States.

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[158] CR/PR at Table II-1.

[159] CR/PR at Table II-1.

[160] CR/PR at II-8.

[161] 19 U.S.C. § 1677(7)(C)(i).

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

[163] CR/PR at Table IV-2. The volume of cumulated subject import shipments increased from *** pounds in 2017 to *** pounds in 2018 and *** pounds in 2019; it was *** pounds in interim 2019 and *** pounds in interim 2020. CR/PR at Table C-3.

[164] CR/PR at Table C-3.

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

D. Price Effects of the Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (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.[166]

As addressed in section IV.B.4. above, the record indicates that there is at least a moderate degree of substitutability between domestically produced granular PTFE resin and the subject imports and that price is an important consideration in purchasing decisions.

The Commission collected quarterly pricing data from U.S. producers and importers for two pricing products.[167] Two domestic producers and two importers provided usable pricing data, although not all firms reported pricing for all products for all quarters.[168] Pricing data reported by these firms accounted for *** percent of U.S. producers' U.S. shipments of granular PTFE resin, *** percent of importers' U.S. shipments of granular PTFE resin from India, and *** percent of importers' U.S shipments of granular PTFE resin from Russia in 2019.[169]

The pricing data show universal underselling by the cumulated subject imports. Prices for cumulated subject imports were below those for the domestically produced product in all 60 quarterly comparisons.[170] There were 10.1 million pounds of cumulated subject imports in quarterly comparisons in which subject imports undersold the domestic like product.[171] The margins of underselling ranged from 13.5 to 61.7 percent, and averaged 43.9 percent during the POI.[172]

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[166] 19 U.S.C. § 1677(7)(C)(ii).

[167] The two pricing products are as follows:

Product 1.--Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60µm average particle size, not modified, not filled, in packages of 25kg or greater.

Product 2.--Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700µm average particle size, not modified, not filled, in packages of 25kg or greater.

CR/PR at V-3.

[168] CR/PR at V-3.

[169] CR/PR at V-4.

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

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

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

Confirmed lost sales also indicate that cumulated subject imports were being sold at lower prices than the domestic product during the POI. Of five responding purchasers, *** reported that they had purchased imported granular PTFE resin from at least one subject country instead of the domestic product during 2017-2019.[173] *** of these purchasers reported that cumulated subject import prices were lower than prices of the domestic like product.[174]

The overall data on the record indicate that cumulated subject imports were frequently available at lower prices than domestically produced granular PTFE resin.[175] We therefore find, for purposes of these preliminary determinations, that there has been significant price underselling by cumulated subject imports. Given that the domestic like product and cumulated subject imports are at least moderately substitutable and that price is an important factor in purchasing decisions, we further find that this underselling led to a shift in market share from domestic producers to cumulated subject imports during the POI.[176]

We have also examined available data on price trends. During the POI, domestic prices generally increased for both pricing products.[177] The data show that prices of subject imports

[173] CR/PR at Table V-11.

[174] *** of these *** purchasers indicated that price was a primary reason for purchasing *** pounds dry weight of subject imports rather than domestic product during 2017-2019. CR/PR at Table V-11. This volume of confirmed lost sales represents approximately *** percent of the *** million pounds of granular PTFE resin imported from the cumulated subject countries during 2017-2019 and Is equivalent to *** percent of the *** pounds of the domestic industry's shipments during 2017-2019; it also accounts for approximately *** percent of the volume of subject imports covered in the purchasers' lost sales and revenue responses. *Derived from* CR/PR at Tables III-5, IV-2, V-10, V-12 and C-3.

[175] The Commission also requested that firms that imported granular PTFE resin from the subject countries for their own use provide quarterly purchase cost data for the two pricing products. CR/PR at V-9. Four importers reported usable import purchase cost data, although not all firms reported purchase costs for all products for all quarters. *Id*. These data account for a significantly smaller volume of subject imports than the pricing data. Purchase cost data reported by these firms accounted for approximately *** percent of subject imports from India in 2019. *Id*. U.S. importers of subject imports from Russia did not report purchase cost data in 2019 and reported relatively small volumes in 2017 and 2018. CR/PR at V-9, n.6 and Table V-5. The purchase cost data show that the purchase costs of cumulated subject imports were lower than the prices for the domestic like product in all 21 instances, or in *** percent of the available price comparisons, at cost differentials ranging from *** percent to *** percent, and averaging *** percent. CR/PR at Table V-9.

[176] CR/PR at Table C-3.

[177] CR/PR at Tables V-3-4. For Products 1 and 2, domestic prices increased by *** percent and *** percent, respectively, during January 2017-September 2020. CR/PR at Tables V-3-4 & V-7.

from India generally increased during the POI, while prices of subject imports from Russia generally declined.[178]

We have also considered whether subject imports have prevented price increases for domestically produced granular PTFE resin which otherwise would have occurred to a significant degree. The domestic industry's ratio of COGS to net sales fluctuated during 2017-2019, declining from *** percent in 2017 to *** percent in 2018, and then increasing to *** percent in 2019, for an overall increase of *** percentage points from 2017 to 2019.[179] The domestic industry's ratio of COGS to net sales was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent.[180] However, we note that the movements in the industry's ratio of COGS to net sales followed movements in apparent U.S. consumption, and the initial decline in the industry's ratio occurred as the volume of subject imports increased by *** percent from 2017 to 2018.[181] In any final phase of these investigations, we intend to further examine the role of subject imports and demand trends in any cost-price squeeze that the domestic industry experienced.

In sum, the available information on the record in the preliminary phase of these investigations, particularly the underselling and lost sales data, indicates that cumulated subject imports significantly undersold domestically produced granular PTFE resin and captured market share from the domestic industry during the POI. Consequently, we find for purposes of these preliminary determinations that the cumulated subject imports have had significant price effects.

[178] For Products 1 and 2, prices for subject imports from India increased by *** percent and ***, respectively, during January 2017-September 2020. CR/PR at Tables V-3-4 & V-7. For Products 1 and 2, prices for subject imports from Russia declined by *** percent and *** percent, respectively, during January 2017-September 2020. *Id*.

[179] CR/PR at Table C-3.

[180] CR/PR at Table C-3.

[181] The domestic industry's ratio of COGS to net sales declined from *** percent in 2017 to *** percent in 2018, while apparent U.S. consumption increased by *** percent during 2017-2018. CR/PR at Table C-3. However, the domestic industry's ratio of COGS to net sales increased from *** percent in 2018 to *** percent in 2019, while apparent U.S. consumption declined by *** percent during 2018-2019. *Id*. The domestic industry's ratio of COGS to net sales was *** percentage points higher in interim 2020 (at *** percent) than in interim 2019 (at *** percent), while apparent U.S. consumption was *** percent lower in interim 2020 than in interim 2019. *Id*.

E. Impact of the Subject Imports[182]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[183]

Most of the domestic industry's output indicia declined from 2017 to 2019, and were lower in interim 2020 than in interim 2019. Although domestic producers' capacity increased by *** percent from 2017 to 2019,[184] their production and U.S. shipments declined by *** percent and *** percent, respectively, over the same period.[185] While domestic producers' capacity was constant in interim 2019 and interim 2020,[186] their production and U.S. shipments were lower in interim 2020 than in interim 2019, by *** percent and *** percent, respectively.[187] Domestic producers' capacity utilization declined by *** percentage points

[182] In its notice initiating the antidumping duty investigations on granular PTFE resin from India and Russia, Commerce reported estimated dumping margins of 37.71 to 391.83 percent for subject imports from India, and 67.32 percent for subject imports from Russia. *Granular Polytetrafluoroethylene (PTFE) Resin from India and the Russian Federation: Initiation of Less-Than-Fair Value Investigations*, 86 Fed. Reg. 10926, 10929 (Feb. 23, 2021).

[183] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[184] Domestic producers' capacity declined from *** pounds in 2017 to *** pounds in 2018, but then increased to *** pounds in 2019. CR/PR at Tables III-4 & C-3. Domestic compounders' capacity was constant, at *** pounds, in 2017, 2018, and 2019. CR/PR at Table C-3.

[185] Domestic producers' production declined from *** pounds in 2017 to *** pounds in 2018 and *** pounds in 2019. CR/PR at Tables III-4 & C-3. Domestic producers' U.S. shipments increased from *** pounds in 2017 to *** pounds in 2018, but then declined to *** pounds in 2019. CR/PR at Tables III-5 & C-3. Domestic compounders' production increased from *** pounds in 2017 to *** pounds in 2018, but then declined to *** pounds in 2019. CR/PR at Table C-3.

[186] Domestic producers' capacity was *** pounds in interim 2019 and interim 2020. CR/PR at Tables III-4 & C-3. Domestic compounders' capacity was *** pounds in interim 2019 and interim 2020. CR/PR at Table C-3.

[187] Domestic producers' production was *** pounds in interim 2019 and *** pounds in interim 2020. CR/PR at Tables III-4 & C-3. Domestic producers' U.S. shipments were *** pounds in interim 2019 and *** pounds in interim 2020. CR/PR at Tables III-5 & C-3. Domestic compounders' production was *** pounds in interim 2019 and *** pounds in interim 2020. CR/PR at Table C-3.

from 2017 to 2019;[188] their capacity utilization was *** percentage points lower in interim 2020 than in interim 2019.[189] The domestic industry's share of apparent U.S. consumption declined by *** percentage points from 2017 to 2019, declining from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; its share was *** percentage points lower in interim 2020, at *** percent, than in interim 2019, at *** percent.[190] End-of-period inventories fluctuated but declined overall by *** percent from 2017 to 2019; they were *** percent higher in interim 2020 than in interim 2019.[191]

The domestic industry's employment indicia generally declined. PRWs,[192] hours worked,[193] and wages paid[194] fluctuated between years but decreased overall from 2017 to 2019; they were all lower in interim 2020 than in interim 2019. Domestic producers' productivity declined from 2017 to 2019, but was higher in interim 2020 than in interim 2019.[195] Hourly wages increased irregularly from 2017 to 2019; they were higher in interim 2020 than in interim 2019.[196]

Most of the domestic industry's financial performance indicia declined over the course of the POI. Its net sales revenue declined overall by *** percent from 2017 to 2019, and was

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[188] Domestic producers' capacity utilization declined from *** percent in 2017 to *** percent in 2018 and *** percent in 2019. CR/PR at Tables III-4 & C-3. Domestic compounders' capacity utilization increased from *** percent in 2017 to *** percent in 2018, but then declined to *** percent in 2019. CR/PR at Table C-3.

[189] Domestic producers' capacity utilization was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Tables III-4 & C-3. Domestic compounders' capacity utilization was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table C-3.

[190] CR/PR at Table C-3.

[191] End-of-period inventories were *** pounds in 2017, *** pounds in 2018, and *** pounds in 2019, interim 2019, and interim 2020. CR/PR at Table C-3.

[192] PRWs increased from *** in 2017 to *** in 2018, but then declined to *** in 2019; they were *** in interim 2019 and *** in interim 2020. CR/PR at Table C-3.

[193] Total hours worked increased from *** hours in 2017 to *** hours in 2018, but then declined to *** hours in in 2019; they were *** hours in interim 2019 and *** hours in interim 2020. CR/PR at Table C-3.

[194] Wages paid increased from $*** in 2017 to $*** in 2018, but then declined to $*** in 2019; they were $*** in interim 2019 and $*** in interim 2020. CR/PR at Table C-3.

[195] Domestic producers' productivity declined from *** pounds per hour in 2017 to *** pounds per hour in 2018 and *** pounds per hour in 2019; it was higher in interim 2020, at *** pounds per hour, than in interim 2019, at *** pounds per hour. CR/PR at Tables III-8 & C-3. Domestic compounders' productivity declined from *** pounds per hour in 2017 to *** pounds per hour in 2018 and *** pounds per hour in 2019; it was lower in interim 2020, at *** pounds per hour, than in interim 2019, at *** pounds per hour. CR/PR at Tables D-12 & C-3.

[196] Hourly wages paid to PRWs declined from $*** per hour in 2017 to $*** per hour in 2018, but then increased to $*** per hour in 2019; they were higher in interim 2020, at $*** per hour than in interim 2019, at $*** per hour. CR/PR at Table C-3.

*** percent lower in interim 2020 than in interim 2019.[197] The domestic industry's gross profit declined by *** percent from 2017 to 2019; it was *** percent lower in interim 2020 than in interim 2019.[198] The domestic industry's operating income and net income were negative for all of the POI except 2018. They fluctuated during the POI, but operating and net income losses grew overall from 2017 to 2019 and these losses were higher in interim 2020 than in interim 2019.[199] Operating income as a share of net sales declined overall by *** percentage points from 2017 to 2019; it was *** percentage points lower in interim 2020 than in interim 2019.[200] Net income as a share of net sales declined overall by *** percentage points from 2017 to 2019; it was *** percentage points lower in interim 2020 than in interim 2019.[201]

The domestic industry's capital expenditures fluctuated, but declined overall from 2017 to 2019; they were higher in interim 2020 than in interim 2019.[202] The domestic industry also reported negative effects on investment and on growth and development due to subject imports.[203]

For purposes of the preliminary phase of these investigations, we find that cumulated subject imports had a significant impact on the domestic industry. Low-priced subject imports increased significantly in absolute terms and relative to consumption during the POI and significantly undersold the domestic like product, causing subject imports to gain ***

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[197] By value, the domestic industry's net sales increased from $*** in 2017 to $*** in 2018, but then declined to $*** in 2019; they were $*** in interim 2019 and $*** in interim 2020. CR/PR at Table C-3.

[198] The domestic industry's gross profit increased from $*** in 2017 to $*** in 2018, but then declined to $*** in 2019; it was lower in interim 2020, at $***, than in interim 2019 at $***. CR/PR at Table C-3.

[199] The domestic industry had an operating income loss of $*** in 2017, operating income of $*** in 2018, and an operating income loss of $*** in 2019. CR/PR at Table C-3. The domestic industry's operating income losses were $*** in interim 2019 and $*** in interim 2020. *Id*. The domestic industry had a net income loss of $*** in 2017, net income of $*** in 2018, and a net income loss of $*** in 2019. *Id*. The domestic industry's net income losses were $*** in interim 2019 and $*** in interim 2020. *Id*.

[200] The domestic industry's operating income as a share of net sales was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at Table C-3.

[201] The domestic industry's net income as a share of net sales was *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at Table C-3.

[202] The domestic industry's capital expenditures increased from $*** in 2017 to $*** in 2018, but declined to $*** in 2019. CR/PR at Table C-3. Its capital expenditures were higher in interim 2020, at $*** than in interim 2019, at $***. *Id.* Chemours and Daikin did not report R&D expenses during 2017-2019; processors' R&D expenses ranged from $*** from 2017 to 2019. CR/PR Revised Table D-4 (INV-TT-039, Mar. 11, 2021).

[203] CR/PR at Tables VI-8-9.

percentage points of market share at the direct expense of the domestic industry. As the domestic industry lost market share, its production and shipments decreased more than demand over the POI and the domestic industry's capacity utilization, employment, revenues, and profits were lower than they would have been otherwise throughout the POI. In light of these considerations, we find that cumulated subject imports had a significant impact on the domestic industry.

We also have considered whether there are other factors that may have had an impact on the domestic industry to ensure that we are not attributing injury from such other factors to subject merchandise. As described above, nonsubject imports were the second largest source of granular PTFE resin in the U.S. market for most of the POI.[204] However, the volume and market share of nonsubject imports declined from 2017 to 2019, and were lower in interim 2020 than in interim 2019.[205] Additionally, available data indicate that average unit values ("AUVs") for nonsubject imports were higher than AUVs for subject imports from India and Russia throughout the POI.[206] We therefore find, for purposes of these preliminary determinations, that nonsubject imports do not explain the domestic industry's declines in performance during the POI. Furthermore, while apparent U.S. consumption decreased from 2017 to 2019, the domestic industry's declines in market share and output substantially exceeded the declines in apparent U.S. consumption over the same period.[207] We recognize that demand declines due to the COVID-19 pandemic may have adversely affected domestic industry output and performance in interim 2020; however, declining demand cannot fully explain the adverse changes experienced by the domestic industry during 2017-2019.[208] Thus, demand trends do not appear to explain all the declines in the domestic industry's condition.[209]

[204] CR/PR at Table C-3.

[205] CR/PR at Table C-3. As a share of apparent U.S. consumption, nonsubject imports declined from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; their share of apparent U.S. consumption was lower in interim 2020, at *** percent, than in interim 2019, at *** percent. *Id*.

[206] CR/PR at Table C-3.

[207] CR/PR at Table C-3.

[208] GFL maintains that insofar as the domestic industry was materially injured during the POI, it was related to the COVID-19 pandemic rather than import competition. GFL Postconf. Br. at 11-12. In any final phase of these investigations, we intend to further examine the impact of the COVID-19 pandemic and declines in demand on the performance of the domestic industry.

[209] GFL argues that declines in Chemours' and Daikin's production of granular PTFE resin may be explained by their production of other products that also use TFE as an input. GFL Postconf. Br. at 3-7. We intend to further examine this issue in any final phase of these investigations.

VII. Conclusion

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

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Daikin America, Inc. ("Daikin"), Orangeburg, New York, on January 27, 2021, 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 granular polytetrafluoroethylene resin ("granular PTFE")[1] from India and Russia. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
January 27, 2021	Petitions filed with Commerce and the Commission; institution of Commission investigations (86 FR 7876, February 2, 2021)
February 16, 2021	Commerce's notice of initiation (86 FR 10926 and 10931 February 23, 2021)
February 17, 2021	Commission's conference
March 12, 2021	Commission's vote
March 15, 2021	Commission's determinations
March 22, 2021	Commission's views

Statutory criteria

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

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . .*

[1] See the section entitled "The subject merchandise" in Part I of this report for a complete description of the merchandise subject in this proceeding.

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

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

may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

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

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

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

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

Organization of report

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

Market summary

Granular PTFE, often referred to as molding powder, is typically processed to form stock shapes, which can then be machined into products such as gaskets, diaphragms, corrosion-resistant lining, piping components, and lab equipment.[6] The leading U.S. producers of granular PTFE are Chemours and Daikin, while leading producers of granular PTFE outside the United States include GFL of India and HaloPolymer of Russia. The leading U.S. importer of granular PTFE from India is ***, while the leading importer of granular PTFE from Russia is ***. Leading importers of granular PTFE from nonsubject countries (primarily China, Germany, and the Netherlands) include ***. U.S. purchasers of granular PTFE are firms that manufacture PTFE compounds or manufacture products using granular PTFE as a raw material; leading purchasers include ***, ***, ***, and ***.

Apparent U.S. consumption of granular PTFE totaled approximately *** pounds ($***) in 2019. Currently, two firms are known to produce granular PTFE in the United States. U.S. producers' U.S. shipments of granular PTFE totaled *** pounds ($***) in 2019, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from subject sources totaled *** pounds ($***) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from nonsubject sources totaled *** pounds ($***) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

[6] Conference transcript, p. 15 (Smith).

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1.[7] Except as noted, U.S. industry data are based on questionnaire responses of two firms that accounted for all known U.S. production of granular PTFE during 2019. U.S. imports are based on the questionnaire responses of 14 firms that accounted for the vast majority of U.S. imports of granular PTFE resin and official import statistics.

Previous and related investigations

Granular PTFE has been the subject of two prior countervailing and antidumping duty investigations in the United States.

On November 6, 1987, E.I. du Pont de Nemours & Co., Inc. ("DuPont") filed petitions with Commerce and the Commission alleging that an industry in the United States was materially injured by reason of dumped imports of granular PTFE resin from Italy and Japan.[8] The Commission made its final affirmative injury determinations in August 1988,[9] and Commerce issued antidumping duty orders on August 24, 1988 (Japan) and August 30, 1988 (Italy).[10] Commerce revoked the antidumping duty order on granular PTFE resin from Japan in 2011 and the antidumping duty order on granular PTFE resin from Italy in 2016 as the domestic interested parties did not participate in Commerce's second and third five-year reviews, respectively.[11]

[7] The Commission also collected trade and financial information for U.S. compounders. These data are presented in appendix C, table C-2.

[8] Granular Polytetrafluoroethylene Resin from Italy and Japan, Inv. Nos. 731-TA-385 and 386 (Final), USITC Pub. 2112, August 1988, p. I-1.

[9] Ibid., p. 1.

[10] 53 FR 33163, August 30, 1988; and 53 FR 32267, August 24, 1988. The order on granular PTFE resin from Italy was later amended to include wet raw polymer PTFE. 58 FR 26100, April 30, 1993.

[11] 76 FR 3614, January 20, 2011; and 81 FR 53119, August 11, 2016.

On September 29, 2017, Chemours filed petitions with Commerce and the Commission alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and LTFV imports of PTFE resin, including granular PTFE, from China and India.[12] On May 21, 2018, Commerce determined that imports of PTFE resin from India were being subsidized by the government of India.[13] The Commission determined on July 6, 2018 that the domestic industry was not materially injured or threatened with material injury, and the establishment of an industry in the United States is not materially retarded by reason of subsidized imports of PTFE resin from India.[14] On September 26, 2018, Commerce determined that imports of PTFE resin from China and India were being sold at LTFV.[15] The Commission determined on November 13, 2018 that the domestic industry was not materially injured or threatened with material injury by reason of LTFV imports of PTFE resin from China and India.[16] [17]

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On February 23, 2021, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on granular PTFE from India and Russia.[18] Commerce identified the following government programs in India and Russia.

[12] The scope in those investigations covered PTFE resin, including but not limited to granular, dispersion, or coagulated dispersion (also known as fine powder). 83 FR 23424, May 21, 2018.

[13] 83 FR 23423, May 21, 2018.

[14] 83 FR 32150, July 11, 2018.

[15] 83 FR 48590 and 48594, September 26, 2018.

[16] 83 FR 62603, December 4, 2018.

[17] The Commissioned defined a single domestic like product, coextensive with the scope of the investigations. The Commission also found that processors engage in sufficient production-related activity to be considered producers of the domestic like product. The Commission defined a single domestic industry consisting of all U.S. producers and processors of PTFE resin and found that appropriate circumstances existed to exclude GFL from the domestic industry as a related party. Polytetrafluoroethylene Resin from China and India, Inv. Nos. 701-TA-588 and 731-TA1392-1393 (Final), USITC Publication 4801, July 2018, pp. 10, 13, 17. For purposes of the opinion, the Commission referred to all blenders, fillers, and compounders as "processors." Ibid., p. 11 n.71.

[18] 86 FR 10931, February 23, 2021; Countervailing Duty Investigation Checklist, Granular Polytetrafluoroethylene Resin from India, Commerce, February 16, 2021, pp. 6-24; and Countervailing Duty Investigation Checklist, Granular Polytetrafluoroethylene Resin from Russia, Commerce, February 16, 2021, pp. 6-22.

India

Government of India Subsidy Programs

- Export Promotion of Capital Goods Scheme (EPCGS)
- Advance Authorization Program
- Duty Drawback Program (DDB)
- Duty Free Import Authorization (DFIA)
- Status Holders Incentive Scrip (SHIS)
- Merchandise Exports from India Scheme (MEIS)
- Renewable Energy Certificate
- Income Tax Exemption for Infrastructure Development Scheme
- Government Grants
- Provision of Coal for Less Than Adequate Remuneration (LTAR)
- *Subsidies for Export-Oriented Units (EOUs)*
- Duty-Free Import of Goods, Including Capital Goods and Raw Materials
- Reimbursement of Central Sales Tax (CST) Paid on Goods Manufactured in India
- Exemption from Payment of Central Excise Duty (CED) on Goods Manufactured in India and Procured from a Domestic Tariff Area (DTA)

GOI and State Government of Gujarat (SGOG) Benefits to Companies Located within Special Economic Zones (SEZs)

- Duty Free Importation of Capital Goods and Raw Materials, Components, Consumables, Intermediates, Spare Parts and Packing Materials
- Exemption from Payment of CST On Purchases of Capital Goods and Raw Materials, Components, Consumables, Intermediates, Spare Parts, And Packing Material
- Exemption from Electricity Duty and Cess on the Sale or Supply of Electricity to the SEZ Unit
- SEZ Income Tax Exemption Provision (Section 10AA)
- SEZ Act: Service Tax Exemption
- Exemption from Payment of State Government Taxes and Duties

SGOG Subsidy Programs

- SGOG Land for LTAR
- SGOG Preferential Water Rates
- SGOG Provision of Fluorspar for LTAR
- Exemption from Electricity Duty
- Assistance for Common Environment Infrastructure Scheme (ACEIS)

Russia

Grant Programs

- Transportation Grants
- Specialty Chemical Grants
- Kirov Region Export Grants
- Interest Rate Grants
- Labor Grants
- Comprehensive Development of "Single Industry Towns" in Kirov
- Kirov Industrial Grants

Export-Import (ExIm) Bank Programs

- High Technology Exports Credit Support Program
- Tender Guarantees
- Guarantee of Returns of Advance Payment
- Guarantee of Performance of Services Specified in Export Contract
- Payment Guarantees

Provision of Good and Services for Less Than Adequate Remuneration (LTAR)

- Provision of Natural Gas for LTAR

Loans

- Industrial Development Fund Loans
- Preferential Loans Provided by State-Controlled Banks

Russian Export Center (REC)

- REC Lending
- REC Exhibition Grants
- REC Certification Grants

Environmental Programs

- Provision of Environmental Credits

Alleged sales at LTFV

On February 23, 2021, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on granular PTFE from India and Russia.[19] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 37.71 to 391.83 percent for product from India and 67.32 percent for product from Russia.

[19] 86 FR 10926, February 23, 2021.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[20]

> *The product covered by these investigations is granular polytetrafluoroethylene (PTFE) resin. Granular PTFE resin is covered by the scope of these investigations whether filled or unfilled, whether or not modified, and whether or not containing co-polymer, additives, pigments, or other materials. Also included is PTFE wet raw polymer. The chemical formula for granular PTFE resin is C2 F4, and the Chemical Abstracts Service (CAS) Registry number is 9002-84-0.*
>
> *Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise processed in a third country, including by filling, modifying, compounding, packaging with another product, or performing any other finishing, packaging, or processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the country of manufacture of the granular PTFE resin.*
>
> *The product covered by these investigations does not include dispersion or coagulated dispersion (also known as fine powder) PTFE.*
>
> *PTFE further processed into micropowder, having particle size typically ranging from 1 to 25 microns, and a melt-flow rate no less than 0.1 gram/10 minutes, is excluded from the scope of these investigations.*

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 statistical reporting number 3904.61.0010.[21] It may also be imported under statistical reporting number

[20] 86 FR 10926 and 10931, February 23, 2021.

[21] For the purposes of statistical reporting number 3904.61.0010, the term "granular" refers to polytetrafluoroethylene (PTFE) resins and raw polymer produced by suspension polymerization as determined by ASTM D 4894-98a or PTFE compounds produced therefrom as determined by ASTM D 4745, or micropowders from such resins or raw polymer as determined by ASTM D 5675 (Group 1, Class 1,4,6). Chapter 39 additional U.S. note 1, HTSUS, Preliminary Revision 3, USITC Publication 5161, January 2021. Micropowder, although imported under HTS 3904.61.0010, is outside the scope of these investigations.

3904.69.5000, for example, certain blends of polymers where the PTFE component is less than 95 percent by weight or certain co-polymers.[22] PTFE resin of subheading 3904.61.00 may contain additives, such as fillers, coloring matter, stabilizers, and plasticizers chiefly intended to give the finished product special physical properties or other desirable characteristics. Small amounts of additives or impurities do not change the classification.[23] If a mixture or blend of different resins includes PTFE and PTFE is at least 95 percent by weight, then it is classified in subheading 3904.61.00.[24] PTFE resin may meet the definition of a chemically modified polymer for purposes of Chapter 39 subheading Note 1 of the HTS.[25] The product may meet the

[22] Customs Rulings HQ 085931 (February 6, 1990), N054319 (March 24, 2009), and N054316 (March 24, 2009).

[23] In HQ 952836 (February 19, 1993), PTFE mixed with irregularly shaped lumps containing "contaminants such as oil, dirt or other unwanted material that must be physically separated," were classified under HTS subheading 3904.61. U.S. Customs and Border Protection noted that "where plastics are in a primary form in their condition as imported, the presence of contaminants does not qualify the plastic as waste of HTS heading 3915." HQ 561978 (December 22, 2000) notes that in one case, mixing or blending other materials with PTFE to create filled PTFE did not constitute a substantial transformation. If the PTFE product is at least 95 percent PTFE by weight, whether filled or unfilled, it is classified in subheading 3904.61.00.

[24] See HQ 561978 (December 22, 2000). In HQ 085931 (February 6, 1990), "other" fluoropolymer resin and PTFE resin blended in the United Kingdom were classified under subheading 3904.69.50 because the PTFE content was less than 95 percent by weight.

[25] Chemically modified polymers (excluding graft polymers) are those in which only appendages to the main polymer chain have been changed by chemical reaction. HTSUS Chapter 39, Note 5. "Chemically modified polymers are to be classified in the subheading named 'Other,' provided that the chemically modified polymers are not more specifically covered by another subheading." HTSUS, Chapter 39, Subheading Note 1 (a)(3), HTSUS, Preliminary Revision 3, USITC Publication 5161, January 2021. An example of a chemically modified polymer is referenced in N288633 (August 7, 2017) in which more chloride atoms are added onto polyvinylchloride by covalently bonding them.

Polymers that are chemically modified to form reactive epoxide groups such that they become epoxide resins (see the Explanatory Note to heading 39.07) are to be classified under heading 39.07. For example, phenolic resins chemically modified by epichlorohydrin would be classified as epoxide resins and not as chemically modified phenolic resins in heading 39.09. A polymer blend in which any one of the constituent polymers has been chemically modified is considered to be chemically modified in its entirety. Chemically modified granular PTFE would be imported under statistical reporting number 3904.61.0090 (USITC staff communication with the National Import Specialist, Customs and Border Protection, March 3, 2021).

definition of a copolymer for purposes of the same chapter, Note 4, and in such cases, the classification is dependent on the monomer with the greatest percentage weight.[26] [27]

The 2021 general rate of duty is 5.8 percent *ad valorem* for subheading 3904.61.00 and 6.5 percent *ad valorem* for subheading 3904.69.50.[28] PTFE resin produced in China is subject to an additional 25 percent ad valorem duty pursuant to Section 301 of the Trade Act of 1974.[29] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

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[26] The expression "copolymers" covers all polymers in which no single monomer contributes 95 percent or more by weight to the total polymer content. Except where the context otherwise requires, copolymers (including co-polycondensates, co-polyaddition products, block copolymers and graft copolymers) and polymer blends are to be classified in the heading covering polymers of that comonomer unit which predominates by weight over every other single comonomer unit. Constituent comonomer units of polymers falling in the same heading shall be taken together. If no single comonomer predominates, copolymers or polymer blends, as the case may be, are to be classified in the heading which occurs last in numerical order among those which equally merit consideration. Chapter 39, Note 4, HTSUS, Preliminary Revision 3, USITC Publication 5161, January 2021. The rules for copolymers state that they are classified according to the polymer that predominates by weight. Therefore, as long and the fluoropolymer component is the largest percentage by weight then it is imported under 3904.69.5000. However, if a fluoropolymer is in a copolymer with a polymer in another heading that predominates, then it would be classified according to the copolymer rules but within the other HTSUS heading (USITC staff communication with the National Import Specialist, Customs and Border Protection, March 3, 2021).

[27] N054319 (March 24, 2009) references a copolymer in which the tetrafluoroethylene (a monomer in these investigations) predominates by weight. N054316 (March 24, 2009) references a copolymer in which the tetrafluoroethylene (a monomer in these investigations) and difluoroethylene derived monomer units taken together predominate by weight. Both products are classified under HTS 3904.69.5000.

[28] The temporary duty suspensions and reductions enacted by the Miscellaneous Tariff Bill Act of 2018 expired on December 31, 2020. On August 10, 2020, in accordance with the American Manufacturing Competitiveness Act, the Commission delivered its final report on miscellaneous tariff bill petitions that sought to extend existing provisions and request new duty suspensions and reductions (see USITC Publication 5097). However, Congress has not introduced legislation pursuant to that report. Therefore, there are currently no active temporary duty reductions or suspensions in place for the subject product.

[29] The Section 301 duties for goods produced in China became effective on August 23, 2018; 83 FR 40823, pp. 40823-40838. The U.S. Trade Representative has not granted any exclusions for subheading 3904.69.50 and granted one exclusion for HTS 394.61.00 from Section 301 duties under 9903.88.02 during the period of these investigations. The one exclusion is polytetrafluoroethylene ($(C_2F_4)_n$), having a particle size of 5 to 500 microns and a melting point of 315 to 329 degrees Celsius (described in statistical reporting number 3904.61.0090). Chapter 99, footnote 20(ggg)(1), p. 99-III-64, Harmonized Tariff Schedule of the United States, Preliminary Revision 3, USITC Publication 5161, January 2021. The exclusion was set to expire in mid-2020, but the USTR extended the exclusion under 9903.88.54 until December 31, 2020. It is currently expired and subject to Section 301 duties. See Diaz, Jennifer, "China Tariff Update, List 2 Exclusions Extended," Customs and International Trade Law, July 31, 2020.

The product

Description and applications

PTFE is a crystalline polymer consisting of repeating units of tetrafluoroethylene ("TFE"), or C_2F_4.[30] Producers of PTFE use specific trade names for their PTFE products, including Polyflon™, a registered trademark of Daikin, and Teflon®, a registered trademark of Chemours,[31] although every producer of PTFE resin has its own specific trade name associated with the product.[32] PTFE resin has a variety of end-use applications due to its chemical inertness, heat and chemical resistance, electrical insulation properties, low coefficient of friction, and functionality over a wide temperature range (-40°C to 260°C).[33] PTFE's properties are attributable to its strong interatomic carbon-fluorine bonds, making the resin resistant to oxidation and reaction with other chemicals (e.g., strong acids, alkalis, and oxidizing agents).[34] In order to benefit from PTFE's properties, the TFE monomer must be polymerized to an extremely high molecular weight.[35]

The scope of these investigations includes one primary form of PTFE resin—granular.[36] Excluded from the scope are other forms generated by different technical standards, which are dispersion,[37] fine powder,[38] and micropowder.[39] Properties are shown in table I-1.[40]

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[30] Chemical Abstracts Service ("CAS") registry number for PTFE is 9002-84-0.

[31] Petition, p. I-6; Encyclopedia.com, "Polytetrafluoroethylene" https://www.encyclopedia.com/science/academic-and-educational-journals/polytetrafluoroethylene, retrieved February 26, 2021.

[32] For example, PTFE manufactured by respondent GFL is sold under the trade name Inoflon®; PTFE manufactured by Dyneon is sold under the trade name "Dyneon TF"; PTFE manufactured by Solvay is sold under the trade name "Algoflon." Ibid; Petition, exhibits I-19, I-20, I-21, I-24, I-25.

[33] Petition, p. I-6; USITC publication 4801, p. I-8.

[34] Fluorogistx, "*Properties"* http://www.fluorogistx.com/applications-na/properties/, retrieved February 25, 2021.

[35] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved February 25, 2021.

[36] Granular PTFE is generated by technical standard ASTM D 4894. Petition, p. I-7; Conference transcript, p. 16 (Smith); Petitioner's postconference brief, pp. 8-9.

[37] Technical standard ASTM designation D 4441. Petition, p. I-7; Conference transcript, p. 16 (Smith); Petitioner's postconference brief, pp. 8-9.

[38] Technical standard ASTM designation D 4895. Petition, p. I-7; Conference transcript, p. 16 (Smith); Petitioner's postconference brief, pp. 8-9.

[39] The HTSUS references micropowder as determined by ASTM D 5675 (Group 1, Class 1,4,6). HTSUS (2021), Preliminary Revision 3, Chapter 39 additional U.S. notes, USITC Publication 5161, January 2021.

[40] Petition, p. 16. Fine powder can also be referred to as coagulated or agglomerated dispersion. Conference transcript, p. 5 (Meisner), p. 11 (Cagle), p. 102 (Smith).

Table I-1:
PTFE resin: Particle sizes and bulk densities

Form of PTFE	Particle Size (micron, µm)[41]		Bulk Density (gram/liter, g/L)	
	Minimum	Maximum	Minimum	Maximum
Dispersion	0.05	0.5	1,246	1,520
Granular	20	650	250	930
Coagulated Dispersion (also called fine powder or fine cut powder)	370	675	460	550
Micropowder (also called micronized powder)[42]	1	20	300	460

Source: Petition, Exhibit I-25; ITC staff communication with Counsel for petitioner, March 8, 2021; Fuzhou Topda New Material Co., "PTFE Micropowders" and "Brochures: PTFE Powders PTFE Dispersions" https://www.fluorochemie.com/products/ptfe-powders-ptfe-dipsersion/ptfe-micropowder and https://www.fluorochemie.com/brochures, re March 8, 2021.

A commonly recognized form of PTFE resin that falls outside the scope of these investigations is micronized powder, or micropowder. Micronized powder represents low molecular weight PTFE,[43] and has an average particle size that ranges from 1 – 20 µm.[44] Because micronized powder has a lower molecular weight, the material loses some strength and tensile properties. PTFE micronized powder has a melt flow rate that is greater than 0.1 g/10 min,[45] and the other three forms of PTFE resin have a melt flow of zero.[46]

[41] A micron is one millionth of a meter.

[42] Fuzhou Topda New Material Co., "PTFE Micropowders" and "Brochures: PTFE Powders PTFE Dispersions" https://www.fluorochemie.com/products/ptfe-powders-ptfe-dipsersion/ptfe-micropowder and https://www.fluorochemie.com/brochures, respectively, retrieved March 3, 2021.

[43] Solvay, "Polymist and Agloflon L PTFE Micronized Powders" https://www.solvay.com/en/brands/polymist-and-algoflon-l-ptfe-micronized-powders, retrieved February 26, 2021.

[44] Jannerfeldt, Claes Gustav; Pabon, Jean-Jacques; Nelissen, Jo Ann. Particles comprising polytetrafluoroethylene and perfluoropolyether. U.S. Patent Application 20170114190 A1 filed June 9, 2015, and published April 27, 2017. https://patents.google.com/patent/US20170114190?oq=20170114190, retrieved March 3, 2021.

[45] Melt flow is the measure of the ease of flow of the melt of a thermoplastic polymer. Jannerfeldt, Claes Gustav, Pabon, Jean-Jacques; Nelissen, Jo Ann. Particles comprising polytetrafluoroethylene and perfluoropolyether. U.S. Patent Application 20170114190 A1 filed June 9, 2015, and published April 27, 2017. https://patents.google.com/patent/US20170114190?oq=20170114190, retrieved March 3, 2021.

[46] PTFE resins enter a 'gel' state at 621°F (327 °C), which lends to a measure of '0' for melt flow (i.e., there is no flow to measure because it is not liquid enough), Ibid.

Each form of PTFE resin is sold in a variety of grades[47] to obtain different properties for usefulness in specific applications.[48] End uses for PTFE include the following: gaskets and parts; film or tape; pipe, tube, hose components; wire coating or insulation; coatings for food applications; fabrics, yarns, or membranes.[49] Dispersion PTFE resin is customarily used in coating applications.[50]

'Filled' PTFE resin refers to PTFE resin that is compounded with additives including, but not limited to, carbon, graphite, glass fiber, stainless steel, bronze, aromatic polyester, or pigments.[51] Filling a PTFE resin can enhance the mechanical properties, such as resistance to abrasion.[52] The most common filler is glass, which is usually sold in compounds with a percentage of filler of 15-25 percent.[53] A compounder is a firm that mixes PTFE with another substance.[54]

Chemically, the forms of PTFE resin have similar chemical compositions and chemical properties;[55] however, physically, the forms of PTFE resin shown in table I-1 possess somewhat different characteristics.[56] Both PTFE types of granular (or free flow) and fine powder (or fine cut) are white powders at room temperature of different particle sizes. Fine powder PTFE resin smears due to it having a 'sheer' physical property.[57] Granular and fine powder PTFE resin have a high melting point and melt viscosity. Consequently, granular PTFE resin cannot be processed by conventional thermoplastic methods, such as injection molding or extrusion. Instead, granular PTFE resin is typically processed by compression molding or ram extrusion, followed by sintering (heating to just below the melting point to fuse individual particles together). Compression molded products are typically fabricated into basic shapes, e.g., cylinders and

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[47] Different formulation techniques are utilized to elicit various grades in the three forms of PTFE resin. Fabrication techniques for granular resins include molding, sintering, and ram extrusion. Fine powdered resins undergo paste-extrusion and dispersions can undergo dip coating and coagulation.

[48] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved March 3, 2021.

[49] Petition, Exhibit 17, pp. 2-8.

[50] Petition, Exhibit 11, p. 4.

[51] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved February 25, 2021; Petitioner's postconference brief, Answers to staff questions, pp. 20-21.

[52] Ibid.

[53] Petitioner's postconference brief, Answers to staff questions, p. 21.

[54] Conference transcript, p. 39 (Meisner). The terms compounder and filler are the same thing. Conference transcript, p. 38 (Meisner).

[55] These properties include the same chemical formula and CAS number.

[56] Petition, Exhibit 11, pp. 2-4.

[57] Conference transcript, p. 35 (Cagle).

cubes. These shapes are then machined into seals, bearings, bushings, piston rings, and diaphragms. Fine powder PTFE resin has the same properties of high melting point and viscosity. However, due to the small particle size, fine powder PTFE resin may be processed into a finished product by paste extrusion.[58] Also, dispersion PTFE resin can be directly applied as a coating, or a thin coating may be dried and removed to create a film.

Manufacturing processes

All forms of PTFE resin start with the production of TFE.[59] TFE is produced with fluorospar (CaF_2), sulfuric acid, and chloroform. In order to produce TFE, chloroform ($CHCl_3$), is fluorinated through a reaction with hydrogen fluoride (HF), produced from fluorospar, to produce chlorodifluoromethane (HCF_2Cl). Chlorodifluoromethane is also called "R-22."[60] R-22 is subsequently pyrolized[61] at 550-750°C, producing TFE and hydrochloric acid (HCl), as shown in figure I-1.

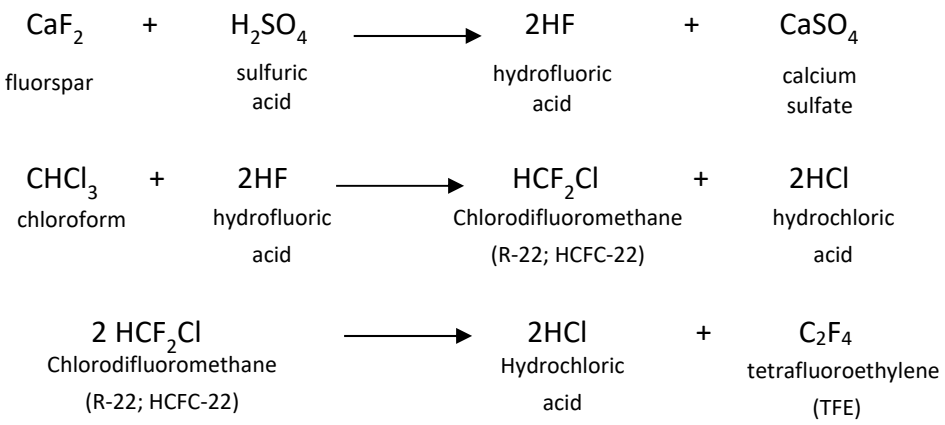
[58] Fine powder PTFE is often extruded as a paste to make materials such as glass fabric laminate and filtration membranes. Conference transcript, p. 16 (Cagle).

[59] TFE, the simplest perfluorinated alkene, is a colorless and odorless gas that is unstable (it will decompose to C and CF4) and can form explosive peroxides in contact with air. TFE's instability makes it dangerous to transport, so TFE and PTFE production are usually on the same site. In fact, the domestic producers of TFE are also the only known domestic producers of PTFE. Conference transcript, pp. 9, 39 (Cagle); Petition, Exhibit I-11, p. 1.

[60] R-22 can also be referred to as HCFC-22. Pubchem, "Chlorodifluoromethane" https://pubchem.ncbi.nlm.nih.gov/compound/Chlorodifluoromethane#section=MeSH-Entry-Terms, retrieved March 3, 2021.

[61] Pyrolysis occurs in the absence or near absence of oxygen and is the chemical decomposition of organic (carbon-based) materials through the application of heat. https://www.britannica.com/science/pyrolysis, retrieved March 3, 2021.

Figure I-1
PTFE resin: Manufacturing process to produce the monomer tetrafluoroethylene (TFE)



Source: Based on conference transcript, pp. 94-99 (Rubin).

Chemours begins its manufacturing process by reacting fluorspar with sulfuric acid (as shown at the top of figure I-1).[62] Daikin begins its manufacturing process by reacting chloroform and hydrofluoric acid (HF) (as shown in the middle section of figure I-1). Daikin does not synthesize chloroform or HF and instead purchases them from independent supply chains. The hydrochloric acid that is generated as a result of the chemical reaction is sold.[63] The TFE monomer is not only used to produce PTFE—it is used to produce other products at Diakin's factory.[64] Only one grade of granular PTFE is produced at Daikin's Decatur, Alabama plant, and it is termed general industrial grade (they also make PTFE forms other than granular at that plant).[65]

Chemours is a larger company than Daikin in terms of granular PTFE operations in the United States, and Chemours makes more than one grade of PTFE. Grade is not defined as quality, but as product characteristics such as different particle size and different bulk density.[66]

[62] Chemours generates hydrofluoric acid at its plant in La Porte, Texas. Conference transcript, p. 99 (Rubin).

[63] Conference transcript, pp. 74, 85, 95-96 (Rubin).

[64] PTFE is produced on the scale of thousands of gallons. Conference transcript, pp. 74-75, 108 (Cagle).

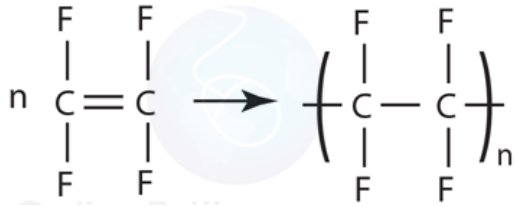
[65] Granular PTFE is considered a very mature product line that tends to move with gross domestic product (GDP) trends. Conference transcript, pp. 80, 83 (Rubin).

[66] Conference transcript, p. 82 (Rubin).

Daikin believes that companies in Russia and India use the same manufacturing process as shown in figure I-1.[67] Figure I-2 shows monomers of TFE polymerized to PTFE.

There are two separate methods utilized by the industry to polymerize TFE into PTFE: (1) suspension polymerization[68] and (2) dispersion or emulsion polymerization[69] (figure I-3).

Figure I-2
PTFE: TFE monomers react to form PTFE



Tetrafluoroethylene Polytetrafluoroethylene

n = number of repeating units of the monomer TFE, F = fluorine, and C = carbon

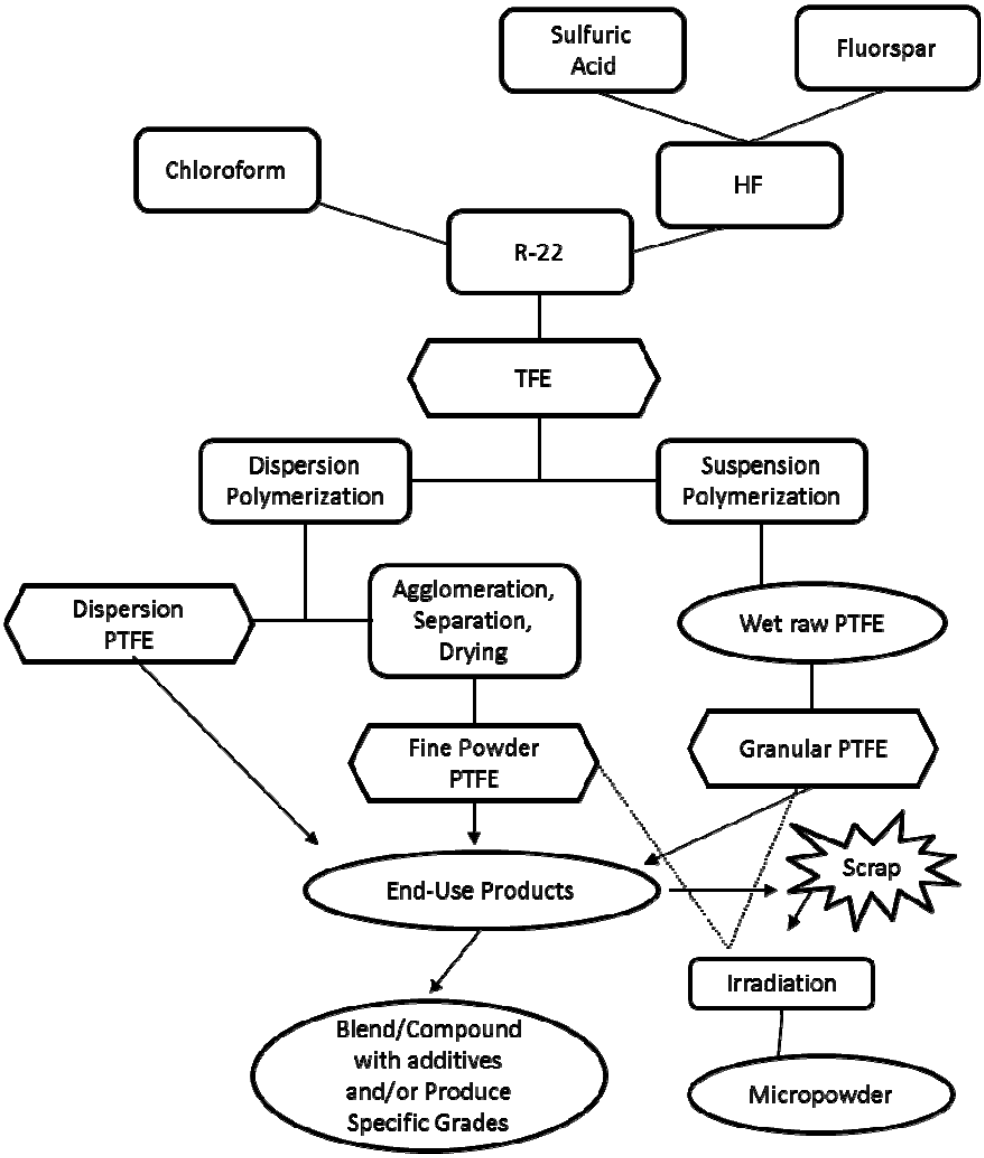
Source: Pocetna, https://www.factory2021.ru/content?c=monomer%20of%20teflon&id=13, retrieved March 3, 2021.

[67] Conference transcript, p. 94-95 (Rubin).

[68] Conference transcript, Daikin's submitted testimony, Exhibit 6. Emulsion and dispersion polymerization are the same process. Conference transcript, p. 101 (Smith).

[69] Conference transcript, p. 101 (Smith).

Figure I-3
PTFE resin: Processing pathways for the different forms of PTFE resin



Source: USITC publication 4018, p. I-13. The terms dispersion and emulsion polymerization are used interchangeably. Conference transcript, p. 101 (Smith).

Granular PTFE resin is produced from TFE through suspension polymerization. The process, which involves vigorous agitation and uses little or no surfactant to produce a precipitate resin, yields a polymer that consists of a repeating chain of TFE (C_2F_4).

After polymerization, the wet polymer PTFE resembles string-like particles of raw polymer in a milky white solution. The particles are then cut to achieve the desired particle size, agglomerated, and dried. The dried resin can then be ground to produce granular PTFE resin, or ground and heated to produce pre-sintered PTFE resin.[70] The result of this process is a granular or powder product that typically ranges in particle size from 20-650 µm and has a bulk density of 250-700 grams per liter (g/L), depending upon the end-use application, as denoted earlier in table I-1. It can be sold in several different grades, including various sizes of powder, pre-sintered powders, pellets, and compounded molding powders containing fillers and pigments, such as fiberglass, carbon, bronze, or carbon black.[71]

PTFE dispersions are obtained by dispersion polymerization. This process involves mild agitation to avoid coagulation and to keep the particles separated and suspended in solution. Surfactants are also added to keep the particles dispersed in the solution.[72] Following polymerization, additional surfactants may be added to form a stable aqueous dispersion of approximately 60 percent PTFE in water. This process yields a solution similar in appearance and consistency to milk. The dispersion may be packaged and sold as PTFE aqueous dispersion. Alternatively, the suspended particles can be agglomerated, separated, and dried to produce a fine powder.[73] Fine powder, despite the name, is generally larger in particle size than granular PTFE resin. As described earlier in table I-1, fine powder PTFE typically ranges in particle size from 370-675 µm and a bulk density of 460-550 g/L.

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[70] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved February 25, 2021.

[71] Petition, Exhibit 11, p. 2. Compounded molding powder, or "filled" PTFE resin, is produced by mixing granular PTFE resin with inorganic fillers. Chemours sells multiple grades. Chemours, "Teflon PTFE Granular Moulding Powders" https://www.teflon.com/en/products/resins/ptfe-granular retrieved March 8, 2021. Daikin only produces one grade of granular PTFE it terms industrial grade. Conference transcript, pp. 80 (Rubin).

[72] Historically perfluorinated octanoic acid ("PFOA") was the surfactant of choice, but Chemours has eliminated the use of PFOA in their production, instead utilizing GenX and LX technologies. Some Chinese companies may still use PFOA.

[73] Petition, Exhibit 11, pp. 5-6.

The production of granular PTFE is not performed on the same equipment as fine powder and dispersion PTFE.[74] Daikin has dedicated employees that run the granular operations and granular equipment.[75]

As noted above, all forms of PTFE resin may be compounded[76] with additives to produce filled PTFE resin. Compounding does not involve a chemical reaction, so it does not need to occur on the same site as TFE production. It is a blending operation that involves significantly less expense and investment than manufacturing the PTFE resin.[77]

Domestic like product issues

The petitioner proposes a single domestic like product, coextensive with Commerce's scope. Although respondent GFL does not dispute petitioner's proposed domestic like product definition for purposes of these preliminary determinations, it noted that the Commission acknowledged an overlap in competition among all forms of PTFE (granular, fine powder, and dispersion) in the prior investigations on PTFE resin from China and India and that data should be collected on these products in any final phase investigations.[78]

[74] Conference transcript, p. 12 (Cagle), p. 17 (Smith). It takes millions of dollars and up to a year to turn a granular reactor into an emulsion or dispersion reactor that make aqueous dispersion or fine powder. Petition, Exhibit 11, p. 6; Conference transcript, p. 12 (Cagle).

[75] Conference transcript, p. 33 (Cagle). Daikin's granular operations take place in a different building than other PTFE forms, and the granular product has a dedicated cleanroom for packaging. Granular PTFE production has different training and certification for employees compared to PTFE dispersion products. Petition, Exhibit 11, p. 5.

[76] Also referred to as filling or blending.

[77] A plant to produce granular PTFE resin requires significant capital investment of around $50 million to $100 million, whereas a compounder would need much less. A compounder could spend less than $1 million to set up a facility. Conference transcript, pp. 38-39 (Rubin).

[78] GFL's postconference brief, February 22, 2021, pp. 2-3, 12.

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

U.S. market characteristics

Granular PTFE is a polymer with a high melting point and melt viscosity, that is pressed or cut into seals, bearings, gaskets, bushings, corrosion-resistant linings, lab equipment, piping components, piston rings, and diaphragms. These products are used in a wide variety of industries, including the automotive and semiconductor industries.

Apparent U.S. consumption in terms of quantity of granular PTFE decreased from 2017 to 2019. Overall, apparent U.S. consumption in 2019 was *** percent lower than in 2017. In terms of value, apparent consumption increased by *** percent from 2017 to 2019. U.S. producers' market share fell by *** percentage points in terms of quantity and *** percentage points in terms of value over the same period. Subject imports market share increased from 2017 to 2019 by *** percentage points. Imports from India made up *** percent of the U.S. market in 2017 and increased to *** percent of the market in 2019. Imports from Russia increased from *** percent of the U.S. market in 2017 to *** percent of the U.S. market in 2019. Nonsubject importer market share fell by *** percentage points from 2017 to 2019.

Channels of distribution

U.S. producers sold mainly to end users. Importers of granular PTFE from India sold mainly to end users, while importers of granular PTFE from Russia sold mainly to fillers/other processors as shown in table II-1. Fillers and processes combine granular PTFE with other materials to make specific polymers.

Table II-1
Granular PTFE: U.S. producers' and importers' U.S. shipments, by sources and channels of distribution, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Geographic distribution

U.S. producers reported selling granular PTFE to all regions in the United States (table II-2). Importers reported selling to all regions of the contiguous United States. For U.S. producers, *** percent of sales were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold 28.1 percent within 100 miles of their U.S. point of shipment, 54.6 percent between 101 and 1,000 miles, and 17.3 percent over 1,000 miles.

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

Region	U.S. producers	India	Russia	Subject U.S. importers
Northeast	***	2	2	4
Midwest	***	2	1	3
Southeast	***	1	2	3
Central Southwest	***	2	2	4
Mountains	***	1	1	2
Pacific Coast	***	2	1	3
Other	***	---	---	---
All regions (except Other)	***	1	1	2
Reporting firms	***	2	2	4

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

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

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding granular PTFE from U.S. producers and from subject countries. U.S. producers' total reported capacity was about a fifth of the reported production capacity of both subject countries combined in 2019 and just over a third of the production capacity reported by the largest subject country (Russia) in the same year.

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

* * * * * * *

Note: Responding U.S. producers accounted for all of U.S. production of granular PTFE in 2019. Responding foreign producer/exporter firms accounted for approximately 75 percent of U.S. imports of granular PTFE both from India and Russia 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, U.S. producers of granular PTFE have the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of U.S.-produced granular PTFE to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of large amounts of unused capacity, moderate-to-high inventory levels, and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include limited ability to shift production to or from alternate products.

U.S. producers increased capacity while production declined from 2017 to 2019, leading to much lower capacity utilization in 2019 than in 2017. U.S. producers' inventories, as a ratio to total shipments, decreased by approximately *** from 2017 to 2019. Exports were approximately *** of U.S. producers' total shipments in 2019, and exceeded*** percent throughout the period. Major export markets include ***. Firms also reported exporting granular PTFE to the Asian and Latin American markets. *** responding U.S. producers reported that they were *** production from other products to granular PTFE.

Subject imports from India

Based on available information, producers of granular PTFE from India have the ability to respond to changes in demand with moderate changes in the quantity of shipments of granular PTFE to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, ability to shift shipments from alternate markets, moderate-to-high inventory levels, and the ability to shift production to or from alternate products.

Indian production capacity remained constant from 2017 to 2019. Total reported Indian production capacity was over twice the production capacity reported by U.S. producers in 2019. Indian capacity utilization remained moderate-to-high throughout the period, increasing from *** percent in 2017 to *** percent in 2019. Indian producers' inventories relative to total shipments increased by just over *** from 2017 to 2019. The Indian producer reported selling *** percent of shipments to export markets other than the United States and selling *** percent of shipments to their home market in 2019, which may enable them to divert large quantities of granular PTFE to the U.S. market. The responding Indian producer, Gujarat Fluorochemicals, reported that ***. The Indian producer reportedly can produce *** on the same equipment used to produce granular PTFE. Gujarat Fluorochemicals reported that

***.

Subject imports from Russia

Based on available information, producers of granular PTFE from Russia have the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of granular PTFE to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, moderate inventory levels, and ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include the limited ability to shift production to or from alternate products.

Russian production capacity increased slightly from 2017 to 2019. Total reported Russia production capacity was over twice the production capacity reported by U.S. producers in 2019. Russian capacity utilization decreased from *** percent in 2017 to *** percent in 2019. Russian producers' inventories relative to total shipments increased by *** from 2017 to 2019. The Russian producer reported selling *** percent of shipments to export markets other than the United States and selling *** percent of shipments to their home market in 2019, which may enable it to divert large quantities of granular PTFE to the U.S. market. The responding Russian producer, HaloPolymer, reported that ***.

Imports from nonsubject sources

Nonsubject imports accounted for 47.0 percent of total U.S. imports in terms of value in 2019. The largest sources of nonsubject imports during 2019 were Germany and China. Combined, these countries accounted for 51.1 percent of nonsubject imports in terms of value in 2019.

Supply constraints

*** responding U.S. producers and two importers reported supply constraints since January 1, 2017. U.S. producer *** reported that there was a surge in demand for U.S.-produced PTFE due to the preliminary duties placed on PTFE imported from China and India in 2017. It reported that it was unable to supply all the purchase requests of this demand surge in the requested time frame. U.S. producer *** reported that a reactor failure at a production site limited the amounts of TFE, an essential component of PTFE, in mid-2019. It reported that it was able to supply major customers while it repaired the reactor and restored its supply of TFE but depleted its reserves in that period. Importer *** reported that the granular PTFE supply was tight around the world.

U.S. demand

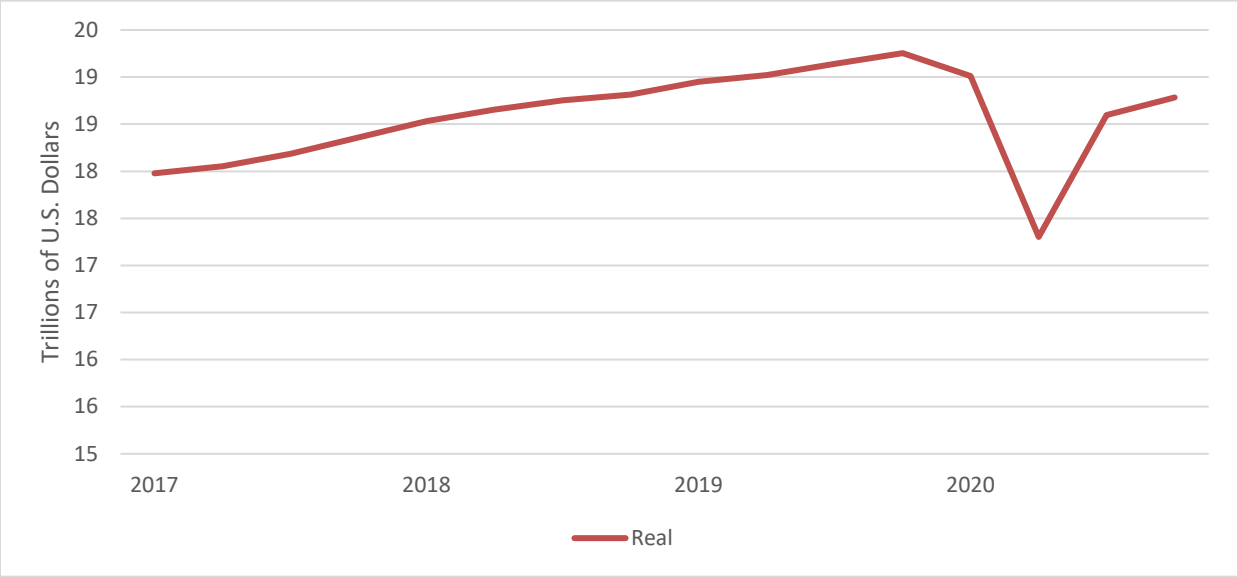
Based on available information, the overall demand for granular PTFE is likely to experience small changes in response to changes in price. The main contributing factors are the lack of substitute products and the large cost share of granular PTFE in most of its end-use products. Most end-use products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

End uses and cost share

U.S. demand for granular PTFE depends on the demand for U.S.-produced downstream products. Reported end uses include seals, gaskets, bearings, films, tapes, and PTFE micro-powder. Petitioners report that the demand for these downstream products generally increases or decreases along with the U.S. economy.

As shown in figure II-1, domestic GDP in "real" terms, increased 4.5 percent between the first quarter of 2017 and the fourth quarter of 2020. However, GDP decreased sharply in the second quarter of 2020 before recovering in the third and fourth quarter of 2020.

Figure II-1
GDP growth: Gross domestic product in the United States, "real" (chained 2012 dollars), seasonally adjusted, by quarter, first quarter of 2017 through the fourth quarter 2020



Source: Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org, retrieved February 26, 2021.

Granular PTFE accounts for a large share of the cost of the end-use products in which it is used. Reported cost shares for some end uses ranged from 21 percent for seals to 100 percent for PTFE micro-powders.

Business cycles

*** of *** U.S. producers and five of 13 importers indicated that the market was subject to business cycles or conditions of competition. Specifically, U.S. producer *** reported that fluctuations in the PTFE market are caused by fluctuations of the U.S. economy, and in particular the semi-conductor and automotive markets. Importers *** and *** reported that the section 301 tariffs on Chinese PTFE resins changed the conditions of competition in the U.S. market. Importer *** reported that these section 301 tariffs have eliminated all imports of granular PTFE from China.

Demand trends

Most firms reported an increase in U.S. demand for granular PTFE since January 1, 2017 (table II-4).

Table II-4
Granular PTFE: 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	6	1	1	5
Demand outside the United States: U.S. producers	***	***	***	***
Importers	6	1	2	4

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

Substitute products

*** of the two responding U.S. producers and the majority of importers reported that there were no substitutes for granular PTFE. U.S. producer *** reported that PFA and FEP resins could be used as substitutes for granular PTFE in wire, cable and tubing products, but that these products are higher priced than granular PTFE, and that silicone or polyethylene could be used as substitutes for granular PTFE in molding applications that do not require all PTFE properties. Importer *** reported that polyether ether ketone (PEEK) could be used as a substitute in seal or ring production.

Substitutability issues

The degree of substitution between domestic and imported granular PTFE 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 high degree of substitutability between domestically produced granular PTFE and granular PTFE imported from subject sources.

Lead times

Granular PTFE is primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments came from inventories, with lead times averaging *** days; while importers reported that *** percent of their commercial shipments came from U.S. inventories, with lead times averaging *** days. The remaining *** percent U.S. producers' commercial shipments were produced-to-order, with lead times averaging *** days. Importers reported that *** percent of commercial shipments came from foreign inventories, with lead times averaging *** days and the remaining *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days.

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations[1] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for granular PTFE. Three responding firms reported that customer specifications were a major purchasing factor. Two firms reported that both price and quality were important purchasing factors. One firm reported that availability was an important purchasing factor. Purchaser *** reported that Daikin was their sole source of granular PTFE as a factory packed distributor and purchaser *** reported that they sourced raw materials based on the customer's request.

Table II-5
Granular PTFE: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Item	1st	2nd	3rd	Total
	Number of firms (number)			
Customer specifications	2	1	---	3
Price / Cost	---	---	2	2
Quality	1	1	---	2
Availability / Supply / Reliability	---	1	---	1
All other factors	2	---	---	NA

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

Comparison of U.S.-produced and imported granular PTFE

In order to determine whether U.S.-produced granular PTFE can generally be used in the same applications as imports from India and Russia, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-6, both responding U.S. producers reported that granular PTFE from the United States, India, Russia, and nonsubject countries are frequently interchangeable. The majority of importers reported that granular PTFE from the United States, India, Russia, and nonsubject countries are frequently or sometimes interchangeable.

U.S. producer *** reported that for most products PTFE is generally interchangeable regardless of origin but there are a few products with specifications and niche applications that require specialized PTFE that is not interchangeable with other types of PTFE. Importer *** reported that quality limits the interchangeability of PTFE from different countries. Importer *** reported that granular PTFE from Russia was inferior to

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

PTFE produced in India and the United States. Importer *** reported that the U.S. market is divided into a high-price, high-quality segment that is consumed by the space, military, and semiconductor industries, and a low-price low-quality segment that is less pure and less reliable that is used in lower cost applications. It continued that U.S. producers supply the high price high quality segment of the market and imports supply the low-cost low-quality segment of the market.

Table II-6
Granular PTFE: Interchangeability between product produced in the United States and in other countries, by country pair

Country pair	U.S. producers				U.S. importers			
	A	F	S	N	A	F	S	N
United States vs. India	***	***	***	***	1	5	6	1
United States vs. Russia	***	***	***	***	---	3	7	3
India vs. Russia	***	***	***	***	---	4	6	---
United States vs. Other	***	***	***	***	1	4	8	---
India vs. Other	***	***	***	***	---	4	6	---
Russia vs. Other	***	***	***	***	---	4	6	---

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

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of granular PTFE from the United States, subject, or nonsubject countries. As seen in table II-7, both responding U.S. producers and the majority of responding importers reported that differences other than price were sometimes significant when comparing granular PTFE produced in the United States, India, Russia, and nonsubject countries. U.S. producer *** reported that price is the most significant factor for most PTFE applications, but there are some specialty grades for specific applications that not all firms offer. Importer *** reported that U.S. producers are unable to supply the U.S. market with its existing capacity and that Daikin does not offer PTFE that meets their standards.

Table II-7

Granular PTFE: Significance of differences other than price between product produced in the United States and in other countries, by country pair

Country pair	U.S. producers				U.S. importers			
	A	F	S	N	A	F	S	N
United States vs. India	***	***	***	***	1	1	9	---
United States vs. Russia	***	***	***	***	2	2	5	1
India vs. Russia	***	***	***	***	---	1	8	---
United States vs. Other	***	***	***	***	---	---	11	---
India vs. Other	***	***	***	***	---	1	8	---
Russia vs. Other	***	***	***	***	---	2	6	---

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

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

Part III: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of two firms that accounted for all known U.S. production of granular PTFE during 2019.

U.S. producers

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petitions.[1] Both firms provided usable data on their operations. Staff believes that these responses represent all known U.S. production of granular PTFE.

Table III-1 lists U.S. producers of granular PTFE, their production locations, positions on the petitions, and shares of total production.

Table III-1
Granular PTFE: U.S. producers of Granular PTFE, their positions on the petitions, production locations, and shares of reported production, 2019

Firm	Position on petition	Production location(s)	Share of production (percent)
Chemours	***	Washington, WV	***
Daikin	Petitioner	Decatur, AL	***
Total			***

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

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms.

[1] The Commission also issued a questionnaire to six compounders identified in the previous PTFE investigations from China and India. Four firms provided usable data on their compounding operations. These data are presented in appendix D.

Table III-2
Granular PTFE: U.S. producers' ownership, related and/or affiliated firms

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

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

As indicated in table III-2, no U.S. producers are related to foreign producers of the subject merchandise and one U.S. producer (***) is related to a U.S. importer of the subject merchandise (***). In addition, as discussed in greater detail below, no U.S. producers directly import the subject merchandise or purchase the subject merchandise from U.S. importers.

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2017. Beginning in 2018, Daikin expanded its granular PTFE capacity by 50 percent at its Decatur, Alabama facilities.[2] The expansion, ***, converted equipment, *** to make granular PTFE.[3] The firm based this business decision on the affirmative preliminary determinations in the prior investigations of PTFE resin from China and India ***.[4] Daikin also reported that it "idled its granular PTFE assets for a number of months at a time due to lack of demand from loss of market share," ***.[5] Chemours reported ***

[2] Conference transcript, pp. 21 (Rubin), 30 (Segars).
[3] Conference transcript, p. 66 (Meisner); and staff correspondence with ***, February 12, 2021.
[4] Conference transcript, pp. 21, 24 (Rubin); and staff correspondence with ***, February 12, 2021.
[5] Conference transcript, p. 25 (Rubin).

***. In 2019, Chemours also reported ***.[6]

Table III-3
Granular PTFE: U.S. producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Expansions:	
***	***
Prolonged shutdowns or curtailments:	
***	***
***	***
Other:	
***	***

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

[6] Staff correspondence with ***, February 16, 2021.

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Domestic producers' granular PTFE production decreased by *** percent during 2017-19 and was *** percent lower in January-September 2020 than in January-September 2019. Capacity increased by *** percent between 2017 and 2019 and was *** in interim 2020 compared to interim 2019.[7] Capacity utilization was high during 2017-18, then decreased *** in 2019, decreasing overall by *** percentage points during 2017-19; it was *** percentage points lower in January-June 2020 than in January-June 2019.[8] Daikin *** attributed the decreased production levels during the period of investigation to an erosion of market share due to subject imports that was exacerbated by decreased demand due to the COVID-19 pandemic.[9] In addition, ***.[10]

Constraints on production reported by responding firms include equipment capacity and uptime.

[7] The overall increase in capacity was due to ***. ***. See staff correspondence with ***, February 16, 2021.

[8] Daikin's *** is due in part to its capacity expansion, which remained idle. Conference transcript, p. 66 (Meisner).

[9] Conference transcript, pp. 27 (Segars), 69 (Rubin); and staff correspondence with ***, February 16, 2021. See also *** producer questionnaire at II-2b: ***; and *** producer questionnaire at II-2b: ***.

[10] Staff correspondence with ***, February 16, 2021. ***. Ibid.

Table III-4
Granular PTFE: U.S. producers' production, capacity, and capacity utilization, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Capacity (1,000 pounds dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***
	Production (1,000 pounds dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***
	Capacity utilization (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***
	Share of production (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***

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

Figure III-1
Granular PTFE: U.S. producers' production, capacity, and capacity utilization, 2017-19, January-September 2019, and January-September 2020

* * * * * * *

Alternative products

U.S. producers' equipment, machinery, and employees are dedicated exclusively to the production of granular PTFE. U.S. producers reported that they are unable to switch production (capacity) between granular PTFE and other products using the same equipment and/or labor. The ability to switch production from granular PTFE to alternative products is limited by high capital costs and time. It takes millions of dollars and nine months to a year to turn a granular reactor into an emulsion reactor to make out-of-scope aqueous dispersion or fine powder PTFE products; finishing equipment cannot be converted at all. In addition, employees only certified in granular PTFE production cannot be used in the production of aqueous dispersion or fine powder PTFE products and vice versa.[11]

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

Table III-5 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. shipments by quantity and value decreased overall during 2017-19, by *** percent and *** percent, respectively, and were lower in January-September 2020 than in January-September 2019, by *** percent and *** percent, respectively.[12] U.S. producers' U.S. shipments accounted for the majority of total shipments (*** percent in 2019). U.S. shipment unit values increased during 2017-19, by *** percent from $*** per pound to $*** per pound and were *** percent lower in January-September 2020 than in January-September 2019. Exports, which accounted for approximately *** of total shipments, decreased by *** percent during 2017-19 and were *** percent lower in interim 2020 than in interim 2019.

[11] Conference transcript, pp. 12-13, 33 (Cagle), 34 (Meisner).

[12] *** reported ***. Staff correspondence with ***, February 22, 2021. ***.

Table III-5
Granular PTFE: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per pound dry weight)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of quantity (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
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. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** U.S. producers' ending inventories decreased by *** percent during 2017-19 and were *** percent higher in interim 2020 than in interim 2019.

Table III-6
Granular PTFE: U.S. producers' inventories, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
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. producers' imports of granular PTFE are presented in table III-7. *** U.S. producers directly imported from *** sources and *** is related to an importer of granular PTFE from ***. U.S. producers cited product mix as the primary reasons for importing.

***.[13] ***.

[13] ***.

Table III-7
Granular PTFE: U.S. producers' U.S. production and imports, 2017-19, January-September 2019, and January-September 2020

* * * * * * *

U.S. employment, wages, and productivity

Table III-8 shows U.S. producers' employment-related data.[14] All employment indicators decreased between 2017 and 2019, with the exception of hourly wages and unit labor costs. Similarly, all employment indicators with the exception of hourly wages and productivity were lower in January-September 2020 than in January-September 2019.

Granular PTFE production requires a minimum number of employees at all times, regardless of the volume of production, in order to maintain safety requirements inherent in a chemical production process.[15] The number of production and related workers ("PRWs") decreased by *** percent from 2017-19 and was *** percent lower in interim 2020 than in interim 2019.[16] Hours worked and wages paid also decreased from 2017-19, by *** percent and *** percent respectively and were lower in interim 2020 than in interim 2019. Hourly wages increased by *** percent between 2017 and 2019 and were *** percent higher in interim 2020 than in interim 2019. Unit labor costs increased by *** percent during 2017-19, from $*** to $*** and were *** percent lower in interim 2020 than in interim 2019.[17]

[14] Overall employment trends are driven by ***.

[15] Conference transcript, p. 27 (Segars).

[16] ***. Regarding the increase in PRWs from 2017-18, ***. Regarding the decrease in PRWs from 2018-19, ***. Regarding the lower number of PRWS in interim 2020, ***. Staff correspondence with ***, March 2, 2021.

[17] ***.

Table III-8
Granular PTFE: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2017-19, January-September 2019, and January-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 (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

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

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

U.S. importers

The Commission issued importer questionnaires to 130 firms believed to be importers of subject granular PTFE, as well as to all U.S. producers of granular PTFE.[1] Usable questionnaire responses were received from 14 companies, which staff believe represent the vast majority of U.S. imports from India, Russia, and all other sources in 2019. Based on proprietary Customs records, responding firms accounted for all imports from India and Russia and *** percent of imports from all other sources in 2019.[2]

Table IV-1 lists all responding U.S. importers of granular PTFE from India, Russia, and all other sources, their locations, and their shares of U.S. imports, in 2019.

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS statistical reporting numbers 3904.61.0010 and 3904.69.5000 during 2017-19.

[2] Coverage was calculated based on proprietary Customs records using HTS statistical reporting number 3904.61.0010 (quantity of imports accounted by firms that responded to the Commission's questionnaire divided by total quantity of imports). HTS statistical reporting number 3904.61.0010 contains out-of-scope products such as fine powders and micropowders. See conference transcript, p. 32 (Drake); and staff correspondence with ***, February 19, 2021 and ***, March 2, 2021. In addition, ***. However, these firms certified that it was not granular PTFE. These firms include ***. See also staff correspondence with ***, February 19, 2021. Two firms (***) also reported importing *** granular PTFE under other HTS statistical reporting numbers. Staff correspondence with ***, February 19, 2021 and ***, February 23, 2021.

Table IV-1
Granular PTFE: U.S. importers by source, 2019

Firm	Headquarters	Share of imports by source (percent)				
		India	Russia	Subject sources	Nonsubject sources	All import sources
3M	Saint Paul, MN	***	***	***	***	***
AGC	Exton, PA	***	***	***	***	***
Baillie	Newark, DE	***	***	***	***	***
Chemours	Wilmington, DE	***	***	***	***	***
Daikin	Orangeburg, NY	***	***	***	***	***
Enflo	Bristol, CT	***	***	***	***	***
Flontech	Pittston, PA	***	***	***	***	***
FST	Plymouth, MI	***	***	***	***	***
GFL Americas	Irving, TX	***	***	***	***	***
HaloPolymer Trading	Houston, TX	***	***	***	***	***
Heroflon	Orangeburg, NY	***	***	***	***	***
Poly-Smith	Keyport, NJ	***	***	***	***	***
Solvay	Alpharetta, GA	***	***	***	***	***
Trelleborg	Fort Wayne, IN	***	***	***	***	***
Total		***	***	***	***	***

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

U.S. imports

Table IV-2 and figure IV-1 present data for U.S. imports of granular PTFE from India, Russia, and all other sources. During 2017-19, total U.S. imports increased overall by *** percent and were *** percent lower in January-September 2020 than in January-September 2019. Subject imports increased by *** percent between 2017 and 2019 and were *** percent higher in interim 2020 than in interim 2019.[3] The higher level of subject imports in interim 2020 compared to interim 2019 is due to ***.[4] Imports from nonsubject sources decreased by *** percent during 2017-19 and were *** percent lower in interim 2020 than in interim 2019.

Average unit values

[3] Subject import trends are driven by ***. Imports from India increased in each year while imports from Russia peaked in 2018 then decreased in 2019 to a level higher than in 2017. *** reported increased imports from 2017-18 "due to a decline in nonsubject imports due to various trade remedy actions (AD, 301, etc.). Imports also declined in 2019 because a customer chose to decline further shipments due to quality concerns." Staff correspondence with ***, February 19, 2021.

[4] Staff correspondence with ***, February 19, 2021.

("AUVs") from both subject and nonsubject sources increased overall between 2017 and 2019, by *** percent and *** percent respectively. Subject and nonsubject AUVs were lower in interim 2020 than in interim 2019, by *** percent and *** percent respectively.

Subject imports as a share of total imports increased by *** percentage points, from *** percent in 2017 to *** percent in 2019. Nonsubject sources as a share of total imports decreased by *** and accounted for *** percent of total imports in 2019. Leading nonsubject sources of imports include China, Germany, and the Netherlands. The ratio of subject imports to U.S. production increased by *** percentage points during 2017-19, from *** percent to *** percent.

Import trends were affected in part by the preliminary antidumping duties on PTFE resin, including granular PTFE, from China and India and the section 301 duties on granular PTFE imports from China. After the preliminary antidumping duties were removed in June 2018, imports from India returned to the U.S. market while imports from China remained low due to the imposition of section 301 tariffs.[5] In addition, *** reported higher import and commercial shipment unit values in 2018 due to "tightening environmental requirements in China during 2018 that resulted in a suspension of Chinese production and an increase in the cost to Chinese manufacturers of complying with new environmental regulations. This, in turn, led to a global shortage, which led to a price spike."[6] *** also reported higher shipments and unit values in 2018 due to supply shortages and increasing demand in the granular PTFE market.[7]

[5] Conference transcript, pp. 21, 34-36 (Rubin).
[6] Staff correspondence with ***, February 19, 2021.
[7] Staff correspondence with ***, February 11, 2021 and with ***, February 19, 2021.

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

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per pound dry weight)				
U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of quantity (percent)				
U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Ratio to U.S. production				
U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Notes continued on next page.

Note.—Imports from India include “wastes and fines” reported by ***; “wastes and fines” are a byproduct of the granular PTFE production process used for further processing of out of scope micropowders. See staff correspondence with ***, February 27, 2021 and ***, February 25, 2021.
Note.—***. *** questionnaire response at II-6a; and staff correspondence with ***, March 2, 2021 and ***, March 2, 2021.

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

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

* * * * * * *

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] Table IV-3 presents the individual shares of total imports by source, during January 2020 through December 2020.

Table IV-3
Granular PTFE: U.S. imports in the twelve month period preceding the filing of the petition, January 2020 through December 2020

Item	January 2020 through December 2020	
	Quantity (1,000 pounds dry weight)	Share quantity (percent)
U.S. imports from.--		
India	***	***
Russia	***	***
Subject sources	***	***
Nonsubject sources	***	***
All import sources	***	***

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)).

Cumulation considerations

In assessing whether imports should be cumulated, the Commission determines whether U.S. imports from the subject countries compete with each other and with the domestic like product and has generally considered four factors: (1) fungibility, (2) presence of sales or offers to sell in the same geographical markets, (3) common or similar channels of distribution, and (4) simultaneous presence in the market. Information regarding channels of distribution, market areas, and interchangeability appear in Part II. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below.

Fungibility

Table IV-4 and figure IV-2 present U.S. producers' and U.S. importers' U.S. shipments by type. The majority of U.S. producers' and U.S. importers' U.S. shipments were unfilled.[10]

Table IV-4
Granular PTFE: U.S. producers' and U.S. importers' U.S. shipments by type, 2019

Item	U.S. producers	U.S. importers					U.S. producers and U.S. importers
		India	Russia	Subject sources	Non-subject sources	All import sources	
	Quantity (1,000 pounds dry weight)						
U.S. shipments.--Filled	***	***	***	***	***	***	***
Unfilled	***	***	***	***	***	***	***
All types	***	***	***	***	***	***	***
	Share across (percent)						
U.S. shipments.--Filled	***	***	***	***	***	***	***
Unfilled	***	***	***	***	***	***	***
All types	***	***	***	***	***	***	***
	Share down (percent)						
U.S. shipments.--Filled	***	***	***	***	***	***	***
Unfilled	***	***	***	***	***	***	***
All types	***	***	***	***	***	***	***

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

[10] Firms were asked to report their U.S. shipments by type: modified (i.e., filled, processed, compounded, etc.) and unmodified.

Figure IV-2
Granular PTFE: U.S. producers' and U.S. importers' U.S. shipments by Item, 2019

* * * * * * *

Geographical markets

U.S. producers and importers reported selling granular PTFE to all regions in the contiguous United States.[11] Table IV-6 presents U.S. imports by border of entry in 2019. In 2019, the vast majority of granular PTFE from subject sources entered through eastern and southern borders of entry, based on official import statistics.

[11] See table II-2.

Table IV-5
Granular PTFE: U.S. imports by border of entry, 2019

Item	Border of entry				
	East	North	South	West	All borders
	Quantity (1,000 pounds dry weight)				
U.S. imports from.--					
India	6,571	4	1,142	---	7,717
Russia	1,356	2	947	---	2,305
Subject sources	7,927	6	2,089	---	10,022
Nonsubject sources	5,966	254	103	33	6,356
All import sources	13,893	259	2,192	33	16,378
	Share across (percent)				
U.S. imports from.--					
India	85.2	0.0	14.8	---	100.0
Russia	58.8	0.1	41.1	---	100.0
Subject sources	79.1	0.1	20.8	---	100.0
Nonsubject sources	93.9	4.0	1.6	0.5	100.0
All import sources	84.8	1.6	13.4	0.2	100.0
	Share down (percent)				
U.S. imports from.--					
India	47.3	1.4	52.1	---	47.1
Russia	9.8	0.8	43.2	---	14.1
Subject sources	57.1	2.2	95.3	---	61.2
Nonsubject sources	42.9	97.8	4.7	100.0	38.8
All import sources	100.0	100.0	100.0	100.0	100.0

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

Source: Compiled from official U.S. import statistics using HTS statistical reporting number 3904.61.0010, accessed February 8, 2021.

Presence in the market

Table IV-7 and figures IV-3 and IV-4 present monthly U.S. imports of granular PTFE. Imports of granular PTFE from all sources were present in the U.S. market in every month from January 2017 through December 2020.

Table IV-6
Granular PTFE: U.S. imports by month, January 2017 through December 2020

U.S. imports	India	Russia	Subject sources	Nonsubject sources	All import sources
	Quantity (1,000 pounds dry weight)				
2017.--					
January	190	40	230	460	690
February	169	168	338	593	931
March	258	110	367	476	844
April	197	89	286	584	870
May	427	320	748	674	1,422
June	517	307	824	724	1,548
July	331	246	578	607	1,185
August	329	206	534	809	1,344
September	374	245	619	481	1,100
October	319	191	510	794	1,305
November	493	236	729	604	1,333
December	394	71	464	538	1,002
2018.--					
January	312	212	524	590	1,114
February	273	318	591	729	1,320
March	126	268	393	633	1,026
April	103	271	374	811	1,185
May	556	272	828	256	1,084
June	461	234	695	525	1,221
July	343	383	726	528	1,254
August	141	677	818	641	1,459
September	765	634	1,399	403	1,802
October	767	537	1,303	617	1,920
November	937	497	1,434	489	1,923
December	674	325	999	609	1,608

Table continued on next page.

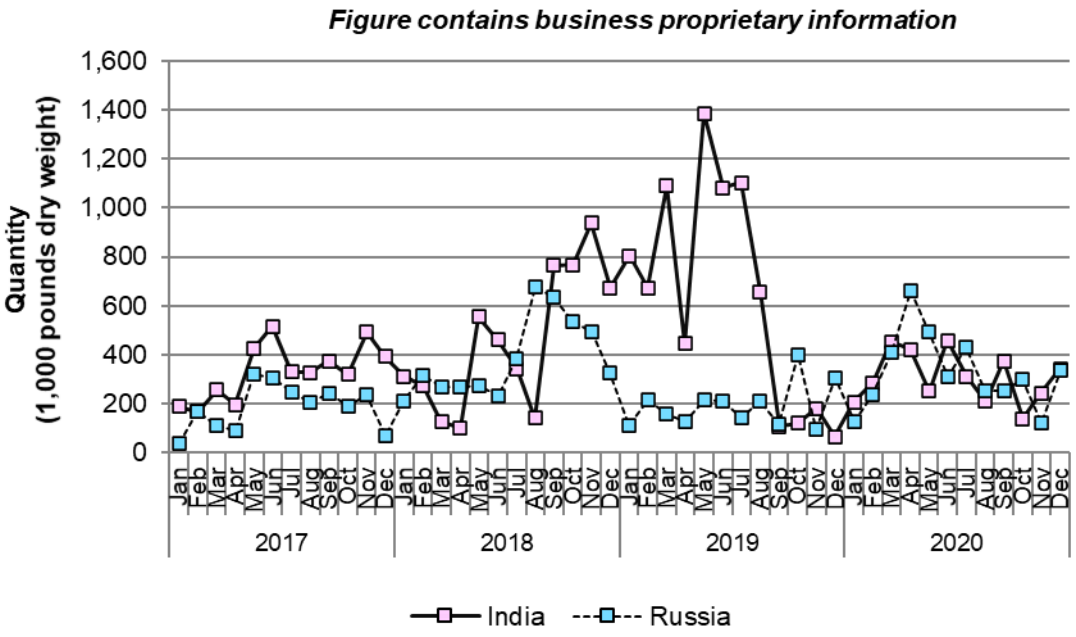
Table IV-6--Continued
Granular PTFE: U.S. imports by month, January 2017 through December 2020

U.S. imports	India	Russia	Subject sources	Nonsubject sources	All import sources
	Quantity (1,000 pounds dry weight)				
2019.--					
January	804	111	915	501	1,416
February	674	214	888	578	1,467
March	1,090	158	1,248	606	1,855
April	445	127	572	725	1,297
May	1,386	215	1,601	567	2,168
June	1,081	209	1,291	639	1,930
July	1,102	144	1,246	697	1,944
August	658	209	868	451	1,319
September	109	117	226	444	670
October	120	399	519	407	926
November	180	96	277	373	649
December	67	304	371	367	738
2020.--					
January	207	128	335	338	674
February	286	238	524	483	1,007
March	454	412	866	508	1,374
April	423	662	1,084	486	1,571
May	253	493	746	495	1,241
June	460	310	770	303	1,073
July	311	433	745	395	1,139
August	211	251	463	443	906
September	374	253	628	307	934
October	139	303	441	397	839
November	245	122	368	254	622
December	345	337	682	312	994

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

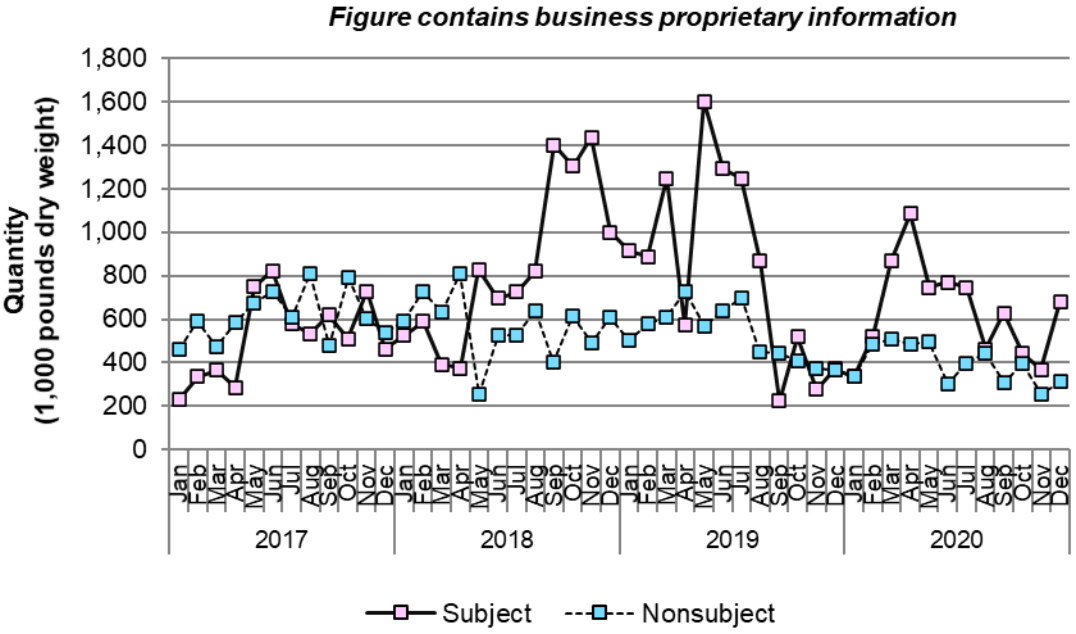
Source: Compiled from official U.S. import statistics using HTS statistical reporting number 3904.61.0010, accessed February 8, 2021.

Figure IV-3
Granular PTFE: U.S. imports from individual subject sources, by month, January 2017 through December 2020



Source: Compiled from official U.S. import statistics using HTS statistical reporting number 3904.61.0010, accessed February 8, 2021.

Figure IV-4
Granular PTFE: U.S. imports from aggregated subject and nonsubject sources, by month, January 2017 through December 2020



Source: Compiled from official U.S. import statistics using HTS statistical reporting number 3904.61.0010, accessed February 8, 2021.

Apparent U.S. consumption

Table IV-7 and figure IV-5 present data on apparent U.S. consumption and U.S. market shares for granular PTFE. The quantity of apparent U.S. consumption decreased by *** percent during 2017-19 and was *** percent lower in January-September 2020 than in January-September 2019. The value of apparent U.S. consumption increased by *** percent during 2017-19 and was *** percent lower in interim 2020 than in interim 2019.

Table IV-7
Granular PTFE: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
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.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

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

U.S. market shares

U.S. market share data are presented in table IV-8. U.S. producers' market share decreased by *** percentage points between 2017 and 2019. Subject import market share increased during the same period, by *** percentage points, while nonsubject import market share decreased by *** percentage points.

Table IV-8
Granular PTFE: U.S. consumption and market shares, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
Apparent U.S. consumption	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Figure IV-5
Granular PTFE: Apparent U.S. consumption, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

Part V: Pricing data

Factors affecting prices

Raw material costs

Granular PTFE is made of fluorspar, sulfuric acid, hydrogen fluoride, chloroform, vinyl ethers, ammonium, and citric acid. Chloroform makes up over half of the raw material cost. Raw materials made up approximately *** percent of the total cost of goods sold ("COGS") and remained a largely constant throughout the period. Factory costs are the largest component of the total COGS.

U.S. producer *** reported that raw material costs had remained constant since January 1, 2017. U.S. producer *** reported that raw material costs increased from 2018 to 2019 and then decreased from 2019 to 2020.

The majority of importers reported that raw material costs had fluctuated since January 1, 2017. Importer *** reported that raw material prices fluctuated according to economic conditions as well as tariffs, while importer *** reported that prices for raw material fluctuated as the demand for PTFE increased or decreased.

Transportation costs to the U.S. market

Transportation costs for granular PTFE shipped from subject countries to the United States ranged from 0.1 percent for India and 2.9 percent from Russia during 2019. These estimates were derived from official import data and represent the transportation and other charges on imports.[1]

U.S. inland transportation costs

*** responding U.S. producers and all responding importers reported that they typically arrange transportation to their customers. U.S. producers did not provide an estimate of their U.S. inland transportation costs while responding importers reported costs of 1.7 to 6.0 percent.

[1] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2019 and then dividing by the customs value based on the HTS subheading 3904.61.0010.

Pricing practices

Pricing methods

U.S. producers reported using *** to set prices for granular PTFE. Importers reported setting prices using transaction-by-transaction negotiations, contracts, price lists, and other methods (table V-1).

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

Method	U.S. producers	Importers
Transaction-by-transaction	***	10
Contract	***	7
Set price list	***	1
Other	***	1
Responding firms	***	12

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

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

U.S. producers reported selling *** granular PTFE under ***. U.S. producer *** reported that ***. Importers reported selling the largest portion of their granular PTFE using spot sales, followed by short-term and annual contracts (table V-2). Importers reported that short-term contracts range from 90 to 180 days.

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

* * * * * * *

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

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

*** responding U.S. producers reported that ***. ***. ***.

One Importer *** reported that it renegotiated annual contracts. One Importers *** and *** reported fixing quantities and prices for short-term contracts and annual contracts. No responding importers reported index prices to raw materials.

Sales terms and discounts

***. Importers typically quote prices on a delivered basis. U.S. producer ***. U.S. producer *** reported that it did not offer discounts. Seven of 12 importers reported that they offered discounts, but each responding importer only had one type of discount policy. Three importers reported quantity discounts, two reported total volume discounts, and two reported offering "other" discounts. Importer *** reported that the other discounts offered were negotiated in each sale.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following granular PTFE products shipped to unrelated U.S. customers during January 2017-September 2020.

Product 1.-- Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

Product 2.-- Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

Two U.S. producers and two importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[2] [3]

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

[3] Importer *** reported pricing data for compounded PTFE. Staff did not include this data in the report.

Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' shipments of granular PTFE, *** percent of U.S. shipments of subject imports from India in 2019, and *** percent of U.S. shipments of subject imports from Russia in 2019.[4]

Price data for products 1-2 are presented in tables V-3 to V-4 and figures V-1 to V-2.

[4] Pricing coverage is based on U.S. shipments reported in questionnaires.

Table V-3
Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, and margins of underselling/(overselling), by quarter, January 2017 through September 2020

* * * * * * *

Note: Product 1: Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Table V-4
Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, and margins of underselling/(overselling), by quarter, January 2017 through September 2020

* * * * * * *

Note: Product 2: Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Figure V-1

Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by quarter, January 2017 through September 2020

* * * * * * *

Product 1: Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Figure V-2
Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by quarter, January 2017 through September 2020

* * * * * * *

Product 2: Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Import purchase cost data

The Commission also requested that importers provide quarterly purchase cost data for their own use or for retail sale. Four importers provided usable purchase cost data of the requested products, although not all firms reported purchase costs for all products for all quarters.[5] Purchase cost data reported by these firms accounted for approximately 0.9 percent of subject imports from India in 2019.[6]

Landed duty-paid purchase cost data for products 1-2 are presented in tables V-5 to V-6 and figures V-3 to V-4, along with U.S. producers' sales prices.[7]

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of importing granular PTFE directly**.** Three of 14 importers reported that they compared costs of importing to the cost of purchasing from a U.S. producer in determining whether to import granular PTFE, and three importers compare costs to purchasing from an importer.

Three of 14 importers reported that they incurred additional costs beyond landed duty-paid costs by importing granular PTFE directly rather than purchasing from a U.S. producer or U.S. importer. Of these, three importers estimated the total additional cost incurred; estimates ranged from 5 to 7 percent compared to the landed-duty paid value.[8] Firms were also asked to identify specific additional costs they incurred as a result of importing granular PTFE. Reported costs include additional logistics, warehousing, and financing costs.

Importers reported that the benefits of importing granular PTFE directly were increased availability of supply, establishing relationships with foreign producers that can be leveraged in times when granular PTFE is scarce, and access to a wider variety of grades of granular PTFE. Importer *** reported that it purchased from a foreign producer because it had been unable to source course-cut commodity grate PTFE resin through domestic producers.

Two responding importers reported that the cost of importing themselves was less than the cost of purchasing from a U.S. producer or importer without including the additional costs

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

[6] Staff did not receive purchase cost data from Russia in 2019.

[7] LDP import value does not include any potential additional costs that a purchaser may incur by importing rather than purchasing from another importer or U.S. producer. Price-cost differentials are based on LDP import values whereas margins of underselling/overselling are based on importer sales prices.

[8] Importer *** reported additional costs beyond landed duty-paid costs of 1 percent.

associated with importing directly. Two responding importers reported that the cost of importing directly was less than the cost of purchasing from a U.S. producer or importer when including these additional costs. Two importers estimated that they saved between *** percent by importing granular PTFE themselves instead of purchasing from a U.S. producer. None of the responding importers estimated the amount they saved by purchasing granular PTFE instead of purchasing it from importers. Two importers reported that they based these estimates on previous transactions and three reported that they based them on market research.

Table V-5
Granular PTFE: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic and imported product 1, and price/cost differentials, by quarter, January 2017 through September 2020

* * * * * * *

Note: Product 1: Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

Source: Compiled from data submitted in response to Commission questionnaires

Table V-6
Granular PTFE: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic and imported product 2, and price/cost differentials, by quarter, January 2017 through September 2020

* * * * * * *

Note: Product 2: Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Figure V-3
Granular PTFE: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic and imported product 1, by quarter, January 2017 through September 2020

* * * * * * *

Product 1: Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Figure V-4
Granular PTFE: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic and imported product 2, by quarter, January 2017 through September 2020

* * * * * * *

Product 2: Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

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

Price trends

In general, prices and purchase cost changes varied by country during January 2017-September 2020. Table V-7 summarizes the price trends, by country and by product. U.S.-produced and Indian granular PTFE increased over the period while prices of Russian granular PTFE decreased. As shown in the table, domestic price increases ranged from *** to *** percent during January 2017-September 2020. Indian import price and purchase cost increases ranged from *** to *** percent while Russian import price and purchase cost decreased ranged from *** to *** percent.

Indexed price and purchase cost data for products 1-2 are shown in figures V-5 to V7. As shown in the figures, price changes for U.S. products and subject imports varied throughout the period.

Table V-7
Granular PTFE: Summary of weighted-average f.o.b. prices and purchase costs for products 1-2 from the United States, India, and Russia

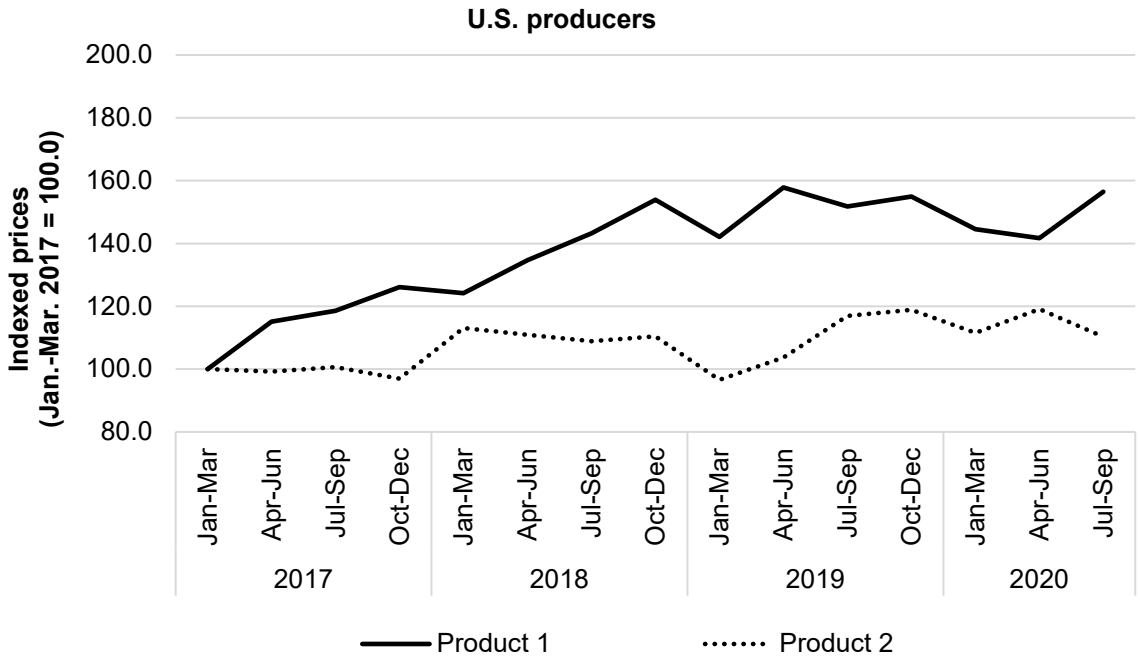
* * * * * * *

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

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

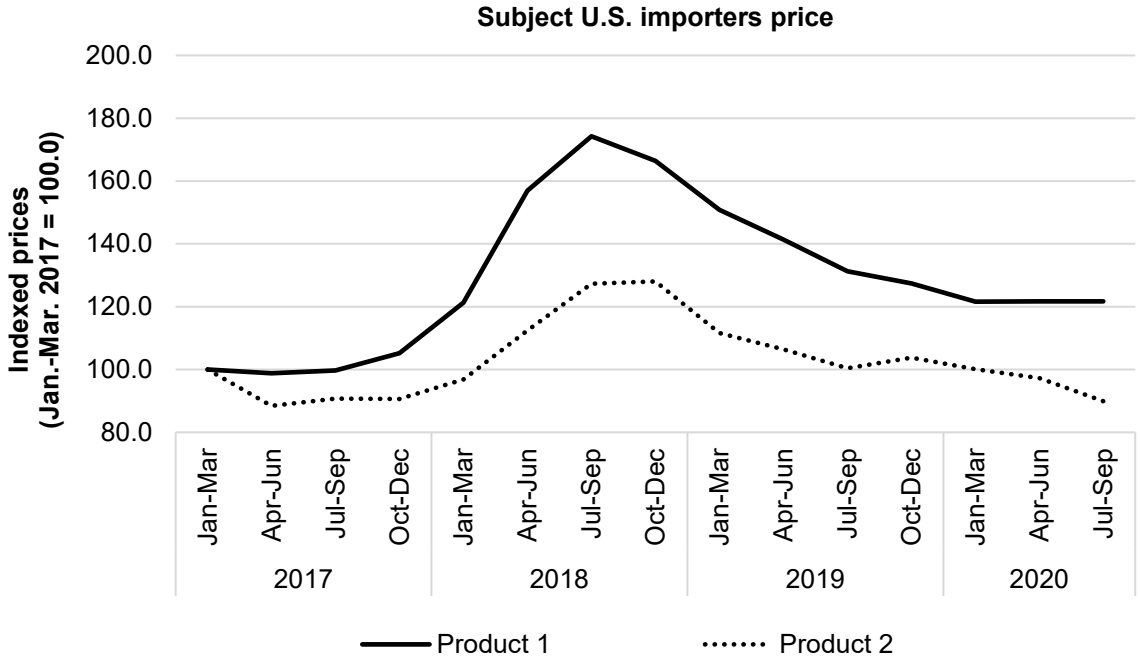
Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-5
Granular PTFE: Indexed U.S. producer prices, January 2017 through September 2020



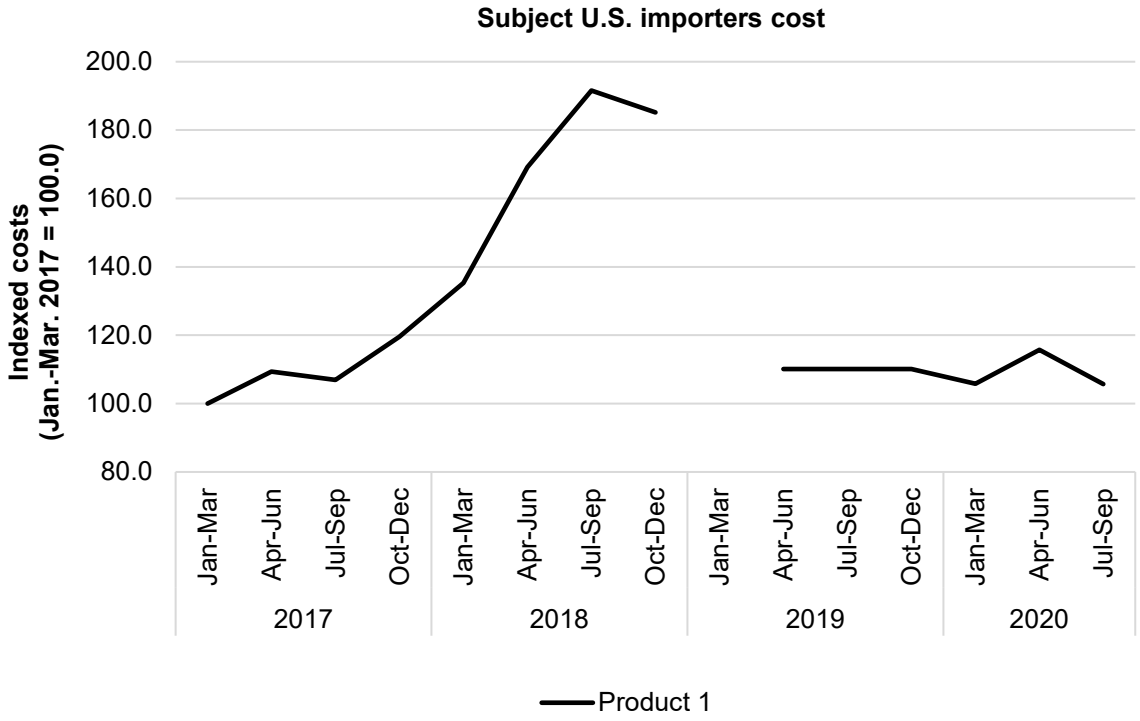
Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-6
Granular PTFE: Indexed subject U.S. importer prices, January 2017 through September 2020



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

Figure V-7
Granular PTFE: Indexed subject U.S. importer costs, January 2017 through September 2020



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

Price comparisons

As shown in table V-8, prices for product imported from India and Russia were below those for U.S.-produced product in 60 of 60 instances (10.1 million pounds dry weight); margins of underselling ranged from 13.5 to 61.7 percent.

Table V-8
Granular PTFE: Instances of underselling/overselling and the range and average of margins, by product and by country, January 2017 through September 2020

Source	Underselling				
	Number of quarters	Quantity (pounds dry weight)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Total, underselling	***	***	***	***	***
India	***	***	***	***	***
Russia	***	***	***	***	***
Total, underselling	60	10,145,686	43.9	13.5	61.7
Source	(Overselling)				
	Number of quarters	Quantity (pounds dry weight)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Total, overselling	***	***	***	***	***
India	***	***	***	***	***
Russia	***	***	***	***	***
Total, overselling	***	***	***	***	***

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.

Purchase cost comparisons

As shown in tables V-9, import purchase costs for product imported from India and Russia were below the price of U.S.-produced granular PTFE in 21 of 21 instances (948,414 pounds dry weight); price-cost differentials ranged from 7.8 to 56.3 percent.

Table V-9
Granular PTFE: Comparisons of import purchase costs and U.S.-producer sales prices

Source	Unit purchase cost data lower than U.S. prices				
	Number of quarters	Quantity (pounds dry weight)	Average price / cost differential (percent)	Price / cost differential range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Total, lower	***	***	***	***	***
India	***	***	***	***	***
Russia	***	***	***	***	***
Total, lower	21	948,414	39.0	7.8	56.3
Source	**(Unit purchase cost data higher than U.S. prices)**				
	Number of quarters	Quantity (pounds dry weight)	Average price / cost differential (percent)	Price / cost differential range (percent)	
				Min	Max
Product 1					
Product 2					
Total, higher					
India					
Russia					
Total, higher					

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

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

Lost sales and lost revenue

The Commission requested that U.S. producers of granular PTFE report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of granular PTFE from India and Russia during January 2017-September 2020. *** responding U.S. producers reported that they had to either reduce prices or roll back announced price increases, and reported that they had lost sales. Both U.S. producers *** submitted lost sales and lost revenue allegations. The responding U.S. producers identified 14 firms with which it lost sales or revenue (13 allegations consisting of both types of allegations and one consisting of lost sales).

Staff contacted six purchasers and received responses from five purchasers. Responding purchasers reported purchasing 10.9 million of granular PTFE during January 2017-September 2020 (table V-10).

Of the five responding purchasers, three reported that, since 2017, they had purchased imported granular PTFE from Indian and Russia instead of U.S.-produced product.[9] Three purchasers reported that they had purchased Indian-produced granular PTFE instead of U.S.-produced product and one purchaser reported purchasing Russian-produced granular PTFE instead of U.S.-produced product. All three 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. This purchaser estimated the quantity of granular PTFE from India and Russia purchased instead of domestic product to be *** pounds; *** pounds from India and *** pounds from Russia (table V-12). Purchaser *** identified a lack of non-premium grades of PTFE available in the U.S. market as non-price reasons for purchasing imported rather than U.S.-produced product.

Of the 5 responding purchasers, none reported that U.S. producers had reduced prices in order to compete with lower-priced imports from India and Russia; two reported that they did not know.

Table V-10
Granular PTFE: U.S. purchasers' U.S. purchases and U.S. imports, 2017-19

* * * * * * *

Note: All other 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.

[9] Staff received *** lost sale lost revenue allegations after questionnaires were issued.

Table V-11
Granular PTFE: Purchasers' responses to purchasing subject instead of domestic, by firm

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires

Table V-12
Granular PTFE: Purchasers' responses to purchasing subject instead of domestic, by country

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity subject purchased (pounds dry weight)
India	3	3	1	***
Russia	1	1	1	***
Any subject source	3	3	1	***

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

Part VI: Financial experience of U.S. producers

Background

Two U.S. producers, Chemours and Daikin, reported financial results and related information on U.S. granular PTFE manufacturing operations. Chemours accounted for *** percent of the period's total granular PTFE sales. Daikin accounted for *** percent.[1] 3M, AGC, Flontech, and GFL Americas reported financial results and related information on their U.S. granular PTFE compounding operations.

With regard to changes in the U.S. producers' operations during the period, ***.[2] ***.[3]

Operations on Granular PTFE

Table VI-1 and table VI-2 present income-and-loss data for U.S. producers' granular PTFE operations and corresponding changes in average per pound values (AUVs), respectively. Table VI-3 presents a variance analysis of these financial results and table VI-4 presents selected company-specific financial information.[4] The financial results reported by U.S. compounders of granular PTFE are presented in Appendix D.

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[1] Chemours and Daikin are large, publicly traded multinational companies. Chemours' granular PTFE operations take place within the Fluoropolymers business unit of its Fluoroproducts segment. Chemours 2019 10-K, pp. 4-5. Daikin's granular PTFE operations take place within its Chemicals segment. Daikin 2020 Annual Report, p. 8.

Chemours and Daikin reported their annual financial results to the Commission for calendar-year periods and on the basis of generally accepted accounting principles (GAAP).

[2] *** U.S. producer questionnaire, response to II-2a.

[3] *** U.S. producer questionnaire, response to II-2a. ***. Email from ***, February 22, 2021. ***. Ibid.

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

Table VI-1
Granular PTFE: Results of operations of U.S. producers, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Estimated cash flow from operations	***	***	***	***	***
	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
Granular PTFE: Results of overall operations of U.S. producers, 2017-19, January-September 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 pound dry weight)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

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

Table VI-2
Granular PTFE: Changes in U.S. producers' AUV's, 2017-19, January-September 2019, and January-September 2020

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Total net sales	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***
Direct labor	***	***	***	***
Other factory costs	***	***	***	***
Average COGS	***	***	***	***
	Change in AUVs (dollars per pound dry weight)			
Total net sales	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***
Direct labor	***	***	***	***
Other factory costs	***	***	***	***
Average COGS	***	***	***	***
Gross profit or (loss)	***	***	***	***
SG&A expense	***	***	***	***
Operating income or (loss)	***	***	***	***
Net income or (loss)	***	***	***	***

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

Table VI-3
Granular PTFE: Variance analysis of the overall financial results of U.S. producers, 2017-19, January-September 2019, and January-September 2020

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Value (1,000 dollars)			
Net sales:				
Price variance	***	***	***	***
Volume variance	***	***	***	***
Net sales variance	***	***	***	***
COGS:				
Cost variance	***	***	***	***
Volume variance	***	***	***	***
COGS variance	***	***	***	***
Gross profit variance	***	***	***	***
SG&A expenses:				
Cost/expense variance	***	***	***	***
Volume variance	***	***	***	***
Total SG&A expense variance	***	***	***	***
Operating income variance	***	***	***	***
Summarized as:				
Price variance	***	***	***	***
Net cost/expense variance	***	***	***	***
Net volume variance	***	***	***	***

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

Table VI-4
Granular PTFE: Results of operations of U.S. producers, by firm, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Total net sales (1,000 pounds dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Total net sales (1,000 dollars)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Cost of goods sold (1,000 dollars)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-4--Continued
Granular PTFE: Results of operations of U.S. producers, by firm, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Gross profit or (loss) (1,000 dollars)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	SG&A expenses (1,000 dollars)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Operating income or (loss) (1,000 dollars)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Net income or (loss) (1,000 dollars)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	COGS to net sales ratio (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Gross profit or (loss) to net sales ratio (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	SG&A expense to net sales ratio (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Operating income or (loss) to net sales ratio (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Net income or (loss) to net sales ratio (percent)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit net sales value (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***

Table continued on next page.

Table VI-4--Continued
Granular PTFE: Results of operations of U.S. producers, by firm, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Unit raw materials (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit direct labor (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit other factory costs (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit COGS (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit gross profit or (loss) (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit SG&A expenses (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit operating income or (loss) (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***
	Unit net income or (loss) (dollars per pound dry weight)				
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All producers	***	***	***	***	***

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

Revenue

The majority of granular PTFE sales reported by Chemours and Daikin reflects commercial sales (*** percent of total period sales) with a relatively small amount of internal consumption (*** percent) also reported.[5] Given the predominance of commercial sales, a single revenue line item is presented in the tables above.

Sales quantity

On an overall basis, U.S. producer's total sales quantity increased marginally in 2018, declined notably in 2019, and was lower in January-September 2020 compared to January-September 2019. As shown in the revenue section of the variance analysis (see table VI-3), negative volume variances largely explain the declines in total sales value in 2019, as well as between the interim periods. In contrast, the small positive volume variance between 2017-18 was a minor factor explaining the increase in total sales value in 2018.

On a company-specific basis, Chemours and Daikin reported largely *** sales quantity ***, respectively, in 2018. For the remainder of the period and while magnitudes varied, Chemours and Daikin *** reported the same directional pattern of *** sales quantities.

Value

The U.S. industry's average per pound sales value increased during the full-year period and then was somewhat lower in January-September 2020 compared to January-September 2019. In 2018, the increase in total sales value primarily reflects the impact of a positive price variance. For the rest of the period, price variances (positive and negative) played a secondary role in terms of explaining changes in total sales value (see table VI-3).

Chemours and Daikin *** reported *** average sales values during the full-year period followed by *** average sales value in January-September 2020 compared to January-September 2019.[6] Chemours reported a *** average sales value compared to

[5] ***. See Part III of this report. ***. *** U.S. producer questionnaire, response to II-7 (note 2).

[6] Daikin's U.S.-produced granular PTFE reflects a single type, referred to as "general industrial grade." Conference transcript, p. 80 (Rubin). As such, changes in Daikin's average sales value during the period do not reflect changes in product mix. Petitioner's postconference brief, Answers to Staff Questions, p. 16.

Daikin throughout the period with differences ranging from *** per pound (January-September 2019) to *** per pound (2017).

Cost of goods sold and gross profit or loss

Raw materials

Raw material cost is the second largest component of granular PTFE COGS, ranging from *** percent of total COGS (2019) to *** percent (January-September 2019). In general, company-specific raw material inputs and corresponding cost shares reflect differences in the level of input integration: Chemours ***,[7] while Daikin purchases HF.[8] As a share of its 2019 raw material cost, Chemours reported the following inputs: ***.[9] Daikin reported: ***.[10] [11]

On an overall basis, average raw material cost increased during the full-year period and then was somewhat lower in January-September 2020 compared to January-September 2019.

[7] ***. Email from ***, February 22, 2021. ***.

[8] Conference transcript, p. 95, p. 99 (Rubin).

[9] *** U.S. producer questionnaire, response to III-9c. Email from ***, February 22, 2021.

[10] *** U.S. producer questionnaire, response to III-9c. ***. Petitioner's postconference brief, Answers to Staff Questions, pp. 19-20.

***.

[11] ***. *** U.S. producer questionnaire, response to III-7. Email from ***, February 22, 2021.

Directionally and while magnitudes varied, Chemours and Daikin followed the *** pattern of *** average raw material costs during the full-year period but *** in January-September 2020 compared to January-September 2019: Chemours reporting marginally *** average raw material cost and Daikin reporting *** average raw material cost.[12] [13] As also indicated in footnotes 12 and 13, an important factor to keep in mind when considering the pattern of reported raw material costs is that it reflects both the variable costs associated with upstream inputs, as well as overhead costs associated with conversion into intermediate inputs.[14]

[12] ***. Email from ***, February 22, 2021. ***. Ibid.

[13] ***. Email from ***, February 22, 2021. ***. Petitioner's postconference brief, Answers to Staff Questions, p. 19.

[14] Conference transcript, p. 77 (Segars). With regard to Daikin's operations, relevant byproducts are limited to hydrochloric acid, which is generated during the production of R-22. Associated byproduct revenue is treated as an offset to reported raw material cost. Conference transcript, p. 99 (Rubin). The granular PTFE production process itself does not generate a byproduct. Conference transcript, p. 84 (Rubin).

Direct labor and other factory costs

On an overall basis direct labor as a share of COGS ranged from (*** percent of COGS (January-September 2020) to *** percent (2018)). Other factory costs, the largest component of COGS, ranged from *** percent (January-September 2019) to *** percent (2019). The relatively large share of other factory costs is generally consistent with Daikin's description of granular PTFE manufacturing as a capital intensive process, reflecting a high degree of fixed costs.[15]

On a company-specific basis, Chemours and Daikin reported the same directional pattern of *** average per pound direct labor cost during the full-year period. In January-September 2020 compared to January-September 2019, the patterns ***: Chemours reporting *** average direct labor cost and Daikin reporting *** average direct labor cost. While Daikin indicated that direct labor cost is essentially a fixed cost within the relevant range of production, the level of direct labor would reportedly increase in conjunction with higher levels of production.[16]

Similar to the pattern of average direct labor cost, Chemours and Daikin *** reported *** average per pound other factory costs during the full-year period, but diverged in January-September 2020 compared to January-September 2019: Chemours reporting *** average other factory costs and Daikin reporting *** average other factory costs.[17] With respect to period-to-period changes in company-specific average other factory costs (see table VI-4), Daikin's percentage changes were *** and generally consistent with the

[15] Conference transcript, p. 26 (Segars). ***. Ibid.

[16] Conference transcript, p. 78 (Segars, Meisner). Daikin confirmed that the direct labor and other factory costs reported are specific to its granular PTFE operations. Conference transcript, p. 77 (Segars).

[17] ***. Email from ***, February 22, 2021. ***. Ibid.

company's description of reduced fixed cost absorption in conjunction with declining granular PTFE production.[18]

COGS and gross profit or loss

With 2017 total sales value somewhat lower compared to corresponding total COGS, the U.S. industry began the period with a gross loss. The transition to gross profit in 2018 reflects a relatively large increase in total sales value, while total COGS increased marginally.[19] Transitioning back to a gross loss in 2019, the U.S. industry reported a relatively large decline in total sales value, to its lowest full-year level, accompanied by a smaller corresponding decline in total COGS. Similarly, the higher gross loss in January-September 2020 compared to January-September 2019 reflects lower total sales value that was only partially offset by lower total COGS.

On a company-specific basis, Chemours' and Daikin's gross results *** inasmuch as Chemours reported *** of varying magnitudes throughout the period, while Daikin reported *** throughout the period, also of varying magnitudes.[20] [21] On a relative

[18] Conference transcript, p. 27 (Segars). ***. Email from ***, February 22, 2021.

[19] The relative improvement in Daikin's financial results in 2018, reflecting the return of some customers and higher prices, was attributed to the imposition of preliminary duties in the previous PTFE investigations. Conference transcript, p. 30 (Segars).

[20] ***. Email from ***, February 22, 2021.

[21] ***. Email from ***, February 22, 2021.

basis, however, *** companies shared the *** directional pattern during the full-year period with gross results *** in 2018 and *** in 2019. In January-September 2020 compared to January-September 2019 the directional pattern ***: Chemours reporting *** and Daikin reporting a ***.[22]

SG&A expenses and operating income or loss

On an overall basis, the U.S. industry's SG&A expense ratio (total SG&A expenses divided by total sales) fluctuated during the full-year period and then was marginally lower in January-September 2020 compared to January-September 2019. In 2018, when the U.S. industry generated its only gross profit of the period, the corresponding SG&A expense ratio was somewhat higher than the corresponding gross profit ratio, yielding an operating loss. For the rest of the period and in conjunction with corresponding SG&A expenses, the U.S. industry gross losses yielded operating losses by default.

On a company-specific basis, Chemours and Daikin reported *** for either *** of the period (***) or *** of the period (***). In 2018, Chemours reported ***, reflecting its *** gross profit ratio and *** SG&A expense ratio. Daikin reported *** throughout the period, which, inclusive of SG&A expenses, yielded corresponding *** of varying magnitude.[23]

[22] ***. *** U.S. producer questionnaire, response to III-18. ***. *** U.S. producer questionnaire, response to III-18.

[23] As shown in table VI-4 and notwithstanding *** levels of total SG&A expenses, Daikin's SG&A expense ratio was *** Chemours' SG&A expense ratio for most of the period. ***. Email from ***, February 22, 2021. ***. Ibid. Daikin's parent company SG&A expense ratio, inclusive of R&D expenses, ranged from 26.5 percent (2018 and 2019) to 27.1 percent (2017). Calculated based on Daikin's 2020 Annual Report, pp. 48-49.

Interest expense, other expenses and income, and net income or loss

The U.S. industry's operating and net results shared the same directional pattern throughout the period: on a relative basis increasing/improving somewhat in 2018, declining in 2019, and then marginally higher/improved in January-September 2020 compared to January-September 2019. Absolute differences between net and operating results reflect the presence of net *** during 2017-19 and net *** in January-September 2020. On a company-specific basis, Daikin reported *** of varying magnitudes throughout the period, while Chemours reported *** during the full-year period and *** in January-September 2020. *** Chemours or Daikin reported ***.

Capital expenditures and research and development expenses

Table VI-5 presents U.S. producers' capital expenditures and research and development (R&D) expenses related to their granular PTFE operations and table VI-6 presents company-specific narrative descriptions.

Table VI-5
Granular PTFE: Capital expenditures and research and development (R&D) expenses of U.S. producers, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Capital expenditures (1,000 dollars)				
All producers	***	***	***	***	***
	Research and development expenses (1,000 dollars)				
All producers	***	***	***	***	***

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

Table VI-6
Granular PTFE: Narrative descriptions of U.S. producers' capital expenditures and R&D expenses since January 1, 2017

Capital expenditures	
Firm	**Narrative**
***	***
***	***
R&D expenses:	
Firm	**Narrative**
***	***
***	***

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

Assets and return on assets

Table VI-7 presents data on the U.S. producers' total net assets and operating return on net assets related to their granular PTFE operations.[24]

Table VI-7
Granular PTFE: Total net assets and operating return on net assets of U.S. producers, 2017-19

Firm	Calendar year		
	2017	2018	2019
	Total net assets (1,000 dollars)		
All producers	***	***	***
	Operating return on assets (percent)		
All producers	***	***	***

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

Capital and investment

The Commission requested the U.S. producers of granular PTFE to describe any actual or potential negative effects on its return on investment or its growth, investment, ability to raise

[24] With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line value on the asset side of a company's balance sheet) reflects an aggregation of a number of current and non-current assets, which, in many instances, are not product specific. Allocation factors were presumably necessary to report total asset values specific to U.S. producers' granular PTFE operations. The ability of U.S. producers to assign total asset values to discrete product lines affects the meaningfulness of operating return on net assets.

capital, existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), or the scale of capital investments as a result of imports of granular PTFE from India and Russia. Table VI-8 tabulates the responses regarding actual negative effects on investment, growth, and development, as well as anticipated negative effects. Table VI-9 presents the narrative responses of U.S. producers regarding actual and anticipated negative effects on investment, growth, and development.

Table VI-8
Granular PTFE: Negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

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

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

Table VI-9
Granular PTFE: Narrative responses of U.S. producers regarding actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

Effects/Firm	Narrative
Negative impact on investment:	
Denial or rejection of investment proposal	
***	***
Return on specific investments negatively impacted	
***	***
Other:	
***	***

Table continued on next page.

Table VI-9--Continued
Granular PTFE: Narrative responses of U.S. producers regarding actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

Effects/Firm	Narrative
Negative impact on growth and development:	
Other	
***	***
***	***
Anticipated effects of imports:	
***	***
***	***

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

Part VII: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*

---

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

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

(VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

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

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

The industry in India

The Commission issued foreign producers' or exporters' questionnaires to eight firms believed to produce and/or export granular PTFE from India.[3] Usable responses to the Commission's questionnaire were received from one firm, GFL. GFL's exports to the United States accounted for *** percent of U.S. imports of granular PTFE from India in 2019.[4] The responding Indian producer estimates that it accounts for *** percent of overall production of granular PTFE in India. Table VII-1 presents information on the GFL's granular PTFE operations in India.

Table VII-1
Granular PTFE: Summary data for producers in India, 2019

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

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

Changes in operations

Table VII-2 presents the Indian producer's reported operational and organizational changes since January 1, 2017.

Table VII-2
Granular PTFE: Indian producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changes in operations
Other:	
***	***

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

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

[4] Responding firms accounting for all imports of granular PTFE from India identified GFL as the foreign producer. The difference in reported exports to the United States and reported imports are likely due to timing differences in shipping/Customs clearance and recordkeeping. See also staff correspondence with ***, March 8, 2021.

Operations on Granular PTFE

Table VII-3 presents information on the granular PTFE operations of the responding producer in India. Production and home market shipments peaked in 2018 then decreased in 2019 above 2017 levels. Exports to the United States and other markets peaked in 2018 then decreased in 2019 below 2017 levels and ending inventories increased in each year during 2017-19. All trade indicators were lower in January-September 2020 than in January-September 2019, with the exception of capacity, which remained the same.[5]

GFL's granular PTFE capacity was stable during 2017-19, while production increased by *** percent during the same period and was *** percent lower in January-September 2020 than in January-September 2019.[6] Capacity utilization fluctuated during the period at *** percent in 2017 to a period high of *** percent in 2018 then decreased to *** percent in 2019, increasing overall by *** percentage points during 2017-19. Capacity utilization was *** percentage points lower in January-September 2020 than in January-September 2019. Capacity is projected to remain the same in 2021 compared to 2019, while production is projected to increase by *** percent.

As a share of total shipments, exports accounted for over *** of total shipments. GFL's exports to the United States decreased by *** percent during 2017-19 and were *** percent lower in interim 2020 than in interim 2019, while exports to other markets decreased by *** percent during 2017-19 and were *** percent lower in interim 2020 than in interim 2019. Home market shipments increased by *** percent during 2017-19 and were *** percent lower during interim 2020 than in interim 2019. Home market shipments and exports to other markets are projected to increase in 2021 compared to 2019, by *** percent and *** percent respectively, while exports to the United States are projected to decrease by *** percent.

[5] This may be due in part to the COVID-19 pandemic and its impact on global demand of granular PTFE. In response to a question relating to the impact of the COVID-19 pandemic on its granular PTFE operations, GFL reported the following: ***. GFL's questionnaire response at II-2b.

[6] Reported production constraints include ***.

Table VII-3
Granular PTFE: Data for producers in India, 2017-19, January-September 2019, and January-September 2020 and projected 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to September		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (1,000 pounds dry weight)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Notes continued on next page.

Note.—***. The firm reported: ***. Staff correspondence with ***, March 2, 2021.

Note.—***. See ***, March 8, 2021.

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

Alternative products

GFL did not report production of alternative products on the same equipment and machinery used to produce granular PTFE. As mentioned previously, GFL reported that ***. In addition, GFL noted that ***. The firm's ability to switch production from granular PTFE to alternative products is affected by ***. GFL estimated that granular PTFE resin accounted for *** percent of its total sales in the most recent fiscal year.

Exports

According to GTA, the leading export markets for PTFE resin, a category that includes granular PTFE and out-of-scope products, from India are the United States, Germany, and Italy (table VII-4). During 2019, the United States was the top export market for PTFE from India, accounting for 32.5 percent, followed by Germany and Italy, accounting for 30.1 percent and 9.8 percent respectively.

Table VII-4
PTFE resin: Exports from India, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
United States	6,430	7,744	8,110
Germany	5,829	6,901	7,499
Italy	3,829	3,714	2,448
China	1,550	904	1,249
United Kingdom	613	982	1,201
Turkey	748	904	1,148
Japan	298	735	1,018
Brazil	468	562	504
Korea	542	485	313
All other destination markets	1,466	1,544	1,459
All destination markets	21,773	24,474	24,950
	Value (1,000 dollars)		
United States	21,629	33,257	36,886
Germany	20,079	28,648	31,684
Italy	12,143	16,709	9,132
China	6,826	4,536	5,115
United Kingdom	2,456	4,899	6,257
Turkey	3,243	4,643	5,453
Japan	1,116	3,637	5,181
Brazil	2,380	3,203	2,741
Korea	2,129	2,325	1,413
All other destination markets	5,369	7,696	6,143
All destination markets	77,370	109,554	110,006

Table continued on next page.

Table VII-4--Continued
PTFE resin: Exports from India, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Unit value (dollars per pound dry weight)		
United States	3.36	4.29	4.55
Germany	3.44	4.15	4.22
Italy	3.17	4.50	3.73
China	4.40	5.02	4.09
United Kingdom	4.01	4.99	5.21
Turkey	4.34	5.14	4.75
Japan	3.75	4.95	5.09
Brazil	5.08	5.70	5.44
Korea	3.93	4.80	4.51
All other destination markets	3.66	4.99	4.21
All destination markets	3.55	4.48	4.41
	Share of quantity (percent)		
United States	29.5	31.6	32.5
Germany	26.8	28.2	30.1
Italy	17.6	15.2	9.8
China	7.1	3.7	5.0
United Kingdom	2.8	4.0	4.8
Turkey	3.4	3.7	4.6
Japan	1.4	3.0	4.1
Brazil	2.2	2.3	2.0
Korea	2.5	2.0	1.3
All other destination markets	6.7	6.3	5.8
All destination markets	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data.

Source: Official exports statistics under HS subheading 3904.61 as reported by India Ministry of Commerce in the Global Trade Atlas database, accessed February 10, 2021.

The industry in Russia

The Commission issued foreign producers' or exporters' questionnaires to one firm believed to produce and/or export granular PTFE from Russia.[7] Usable responses to the Commission's questionnaire were received from one firm, HaloPolymer. HaloPolymer's exports to the United States accounted for *** percent of U.S. imports of granular PTFE from Russia in 2019.[8] The responding Russian producer estimates that it accounts for *** percent of overall production of granular PTFE in Russia. Table VII-5 presents information on the granular PTFE operations of the responding producer in Russia.

Table VII-5
Granular PTFE: Summary data for producers in Russia, 2019

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

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

Changes in operations

HaloPolymer did not report any operational or organizational changes since January 1, 2017.

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

[8] Responding firms that accounted for all U.S. imports of granular PTFE from Russia identified HaloPolymer as the foreign producer. The difference in reported exports to the United States and reported imports are likely due to timing differences in shipping/Customs clearance and recordkeeping. ***. However, ***. ***, March 2, 2021; *** questionnaire response at II-6a; and staff correspondence with ***, March 2, 2021.

Operations on Granular PTFE

Table VII-6 presents information on the granular PTFE operations of the responding producer in Russia. HaloPolymer's granular PTFE capacity increased by *** percent during 2017-19 and was *** percent higher in January-September 2020 than in January-September 2019. HaloPolymer reported that ***.[9] Production fluctuated and decreased by *** percent between 2017 and 2019; it increased by *** percent during 2017-18 then decreased by *** percent during 2018-19.[10] Capacity utilization decreased by *** percentage points during 2017-19, from *** percent to ***, and was higher in January-September 2020 than in January-September 2019. Capacity and production are projected to increase from 2019 to 2021 by *** percent and *** percent respectively.[11]

Exports to the United States and to other markets decreased during 2017-19, by *** percent and *** percent respectively; home market shipments also decreased by *** percent during the same period. Exports to the United States and other markets were higher in interim 2020 than in interim 2019, by *** percent and *** percent respectively; home market shipments were *** percent higher during the same period. Exports to the United States as a share of total shipments was *** percent in 2019, while exports to other markets accounted for *** percent. Home market shipments, exports to the United States and other markets are projected to increase from 2019 to 2021, by *** percent, *** percent, and *** percent respectively.

[9] HaloPolymer's questionnaire response at II-3c.

[10] The firm reported ***.

[11] HaloPolymer reported that since January 1, 2020, the COVID-19 pandemic ***. HaloPolymer's questionnaire response at II-2b.

Table VII-6
Granular PTFE: Data for producers in Russia, 2017-19, January-September 2019, and January-September 2020 and projected 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to September		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (1,000 pounds dry weight)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Note.—HaloPolymer reported that ***.

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

Alternative products

HaloPolymer did not report production of alternative products on the same equipment and machinery used to produce granular PTFE. The firm also noted that ***. The firm estimates that granular PTFE made up *** percent of its total sales in the most recent fiscal year.

Exports

According to GTA, the leading export markets for PTFE resin, a category that includes granular PTFE and out-of-scope products, from Russia are Korea, Italy, and the United States (table VII-7). During 2019, Korea was the top export market for PTFE from Russia, accounting for 34.2 percent, followed by Italy and the United States, accounting for 30.7 percent and 14.7 percent respectively.

Table VII-7
PTFE resin: Exports from Russia, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
United States	2,383	4,354	2,112
Korea	4,238	4,717	4,907
Italy	4,660	7,713	4,400
China	865	430	718
Germany	152	696	601
Romania	980	511	469
India	622	33	259
Belgium	---	22	219
Japan	235	25	156
All other destination markets	1,368	899	515
All destination markets	15,503	19,401	14,354
	Value (1,000 dollars)		
United States	7,427	19,640	6,656
Korea	13,684	17,853	11,085
Italy	14,351	29,734	11,619
China	1,770	1,453	1,224
Germany	560	2,739	1,725
Romania	2,732	1,885	1,112
India	1,599	136	602
Belgium	---	80	401
Japan	596	110	650
All other destination markets	4,206	3,996	1,717
All destination markets	46,925	77,625	36,790

Table continued on next page.

Table VII-7--Continued
PTFE resin: Exports from Russia, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Unit value (dollars per pound dry weight)		
United States	3.12	4.51	3.15
Korea	3.23	3.78	2.26
Italy	3.08	3.85	2.64
China	2.05	3.38	1.70
Germany	3.67	3.93	2.87
Romania	2.79	3.69	2.37
India	2.57	4.06	2.32
Belgium	---	3.64	1.83
Japan	2.53	4.42	4.18
All other destination markets	3.08	4.44	3.33
All destination markets	3.03	4.00	2.56
	Share of quantity (percent)		
United States	15.4	22.4	14.7
Korea	27.3	24.3	34.2
Italy	30.1	39.8	30.7
China	5.6	2.2	5.0
Germany	1.0	3.6	4.2
Romania	6.3	2.6	3.3
India	4.0	0.2	1.8
Belgium	---	0.1	1.5
Japan	1.5	0.1	1.1
All other destination markets	8.8	4.6	3.6
All destination markets	100.0	100.0	100.0

Source: GTIS/GTA database.

Subject countries combined

Table VII-8 presents summary data on granular PTFE operations of the reporting subject producers in the subject countries.

Table VII-8
Granular PTFE: Data on the industry in subject countries, 2017-19, January-September 2019, and January-September 2020 and projected 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to September		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (1,000 pounds dry weight)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

U.S. inventories of imported merchandise

Table VII-9 presents data on U.S. importers' reported inventories of granular PTFE. Ending inventories from subject sources increased by *** percent during 2017-19 and were *** percent lower in January-September 2020 than in January-September 2019. The ratio of importers' inventories from India and Russia to U.S. shipments of imports fluctuated during 2017-19 and increased overall from *** percent in 2017 to *** in 2019. Inventories from nonsubject sources increased by *** percent between 2017 and 2019, when they were equivalent to *** percent of U.S. shipments of imports, and were *** percent lower in interim 2020 than in interim 2019.

Table VII-9
Granular PTFE: U.S. importers' inventories, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Inventories (1,000 pounds dry weight); Ratios (percent)				
Imports from India: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Russia: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from subject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

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 granular PTFE from India, Russia, and all other sources after September 30, 2020 (table VII-10). Of the responding importers, nine of 14 firms indicated that they had arranged such imports. One firm each reported arranged imports from India and Russia, while the remaining seven firms reported arranged imports from all other sources. Arranged imports from India and Russia together accounted for *** percent of total arranged imports.

Table VII-10
Granular PTFE: Arranged imports, October 2020 through September 2021

Item	Period				
	Oct-Dec 2020	Jan-Mar 2021	Apr-Jun 2021	Jul-Sept 2021	Total
	Quantity (1,000 pounds dry weight)				
Arranged U.S. imports from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
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

India issued antidumping duty orders on imports of PTFE from Russia in October 1999,[12] and on imports of PTFE from China in July 2005.[13] In 2016, India completed its third review concerning PTFE from Russia and its second review of the orders of PTFE from China. Both sets of orders were continued with some modifications. The antidumping order for China is in force for 5 years after the publication date of July 28, 2017 (until mid-2022).[14] The antidumping duty

[12] Government of India, Department of Commerce, "Polytetrafluoroethylene PTFE Russia," Case No. No. 241/98-DGAD, Directorate General of Anti-Dumping and Allied Duties Final Findings (March 2017). https://www.dgtr.gov.in/anti-dumping-cases/polytetrafluoroethylene-ptfe-russia, retrieved February 25, 2021.

[13] Government of India, Department of Commerce, "Polytetrafluoroethylene PTFE China PR," Case No. No.14/25/2003-DGAD,15/11/2016-DGAD, Directorate General of Anti-Dumping and Allied Duties Final Findings (June 2017). https://www.dgtr.gov.in/anti-dumping-cases/polytetrafluoroethylene-ptfe-china-pr, retrieved February 25, 2021.

[14] Government of India, Department of Commerce, "Notification, Final Findings, Case No. ADD-AC-03/2020," F. No. 07/22/2020-DGTR, January 27, 2021, https://www.dgtr.gov.in/sites/default/files/PTFE%20AC%20-%20FF%20-%20NCV.pdf

for Russia is in force until June 5, 2021.[15] The petitioner is not aware of any other antidumping or countervailing orders.[16]

Information on nonsubject countries

According to published sources, global capacity in 2018 was ***, global production was ***, and global apparent consumption was *** metric tons, shown in table VII-11.[17] The average global annual consumption growth rate from 2018-23 is forecast at *** percent, while in the United States it is forecast at *** percent.[18] The capacity in 2018 was *** metric tons for the United States, *** metric tons for Western Europe, *** metric tons for Japan, *** metric tons for China, and *** metric tons for the rest of the world.[19] Consumption of PTFE in 2018 was *** metric tons for the United States, *** metric tons for Western Europe, *** metric tons for Japan, and *** metric tons for China.

Table VII-11
PTFE resin: Global supply and demand, 2018, thousands of metric tons

	Annual Capacity	Production	Apparent Consumption	Average Annual Consumption Growth rate
United States	***	***	***	***
Western Europe	***	***	***	***
China	***	***	***	***
Japan	***	***	***	***
India	***	***	***	***
Korea	***	***	***	***
Taiwan	***	***	***	***
Rest of World	***	***	***	***
Total	***	***	***	***

Note: Includes all forms of PTFE resin (granular, dispersion, fine powder).

Source: IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, pp. 9, 11.

[15] Government of India, Department of Commerce, "Notification: Final Findings, Case No. (MTR-02/2020)," F. No.7/10/2020-DGTR, December 18, 2020, A(a)(5), p. 2. https://www.dgtr.gov.in/sites/default/files/PTFE%20MTR%20English%20FF.pdf

[16] Conference transcript, p. 48 (Meisner).

[17] IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, pp. 9, 11.

[18] IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, pp. 9, 11.

[19] IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, pp. 9, 11.

The major world producers of PTFE resin and their plant capacities are shown in table VII-12. Detailed information on Western European producers of PTFE resin is shown in table VII-13. Table VII-14 and figure VII-1 show the Western European supply and demand for 2013—18 and 2023 (forecast). Western European consumption of PTFE by grade in 2015, 2018, and 2023 (forecast) is listed in table VII-15. Japanese supply and demand are listed in table VII-16, and consumption by form is listed in table VII-17. Global exports by exporting country for HTS subheading 3904.61 for 2017-19 are presented in table VII-18. Because GTA only provides data to the six-digit HTS level that covers PTFE, the data presented may include certain out-of-scope merchandise, such as micropowder, fine powder, and dispersion PTFE resin.

Table VII-12
PTFE resin: Major world producers, all forms of PTFE and plant capacities, by company, 2019

* * * * * * *

Table VII-13
PTFE resin: Western European producers of PTFE resin and their capacities, 2019

* * * * * * *

Table VII-14
PTFE resin: Western European supply/demand,[a] thousands of metric tons, 2013—18 and forecast to 2023

	Production	Imports	Exports	Apparent consumption
2013	***	***	***	***
2014	***	***	***	***
2015	***	***	***	***
2016	***	***	***	***
2017	***	***	***	***
2018	***	***	***	***
2023p	***	***	***	***
Average annual growth rate (percent)				
2013-18	***	***	***	***
2018-23	***	***	***	***

a. All data are for virgin, straight, and uncompounded polymers, excluding any recycled material.
Note: Includes all forms of PTFE resin (granular, dispersion, fine powder).

Source: IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, p. 86.

Table VII-15
PTFE resin: Western European consumption by grade of PTFE, 2015, 2018 and 2023 (forecast), thousands of metric tons

Grade	2015	2018	2023 Forecast
Granular resin	***	***	***
Fine Powders	***	***	***
Aqueous dispersions	***	***	***
Other	***	***	***
Total	***	***	***

Source: IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, p. 90.

Table VII-16
PTFE resin: Japanese supply/demand, 2013—18, thousands of metric tons

	Annual capacity[a]	Production	Imports[b]	Exports[b]	Apparent consumption[c]
2013	***	***	***	***	***
2014	***	***	***	***	***
2015	***	***	***	***	***
2016	***	***	***	***	***
2017	***	***	***	***	***
2018	***	***	***	***	***

a. Capacities of multipurpose plants are included. Includes all forms of PTFE resin.
b. Data are reported under HS code: 3904.61.
c. Data are rounded.

Source: IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, p. 143.

Table VII-17
PTFE resin: Japanese consumption of PTFE by form, thousands of metric tons

	Granular					
	Nonfilled	Filled	Fine Powder	Aqueous dispersions	Other[a]	Total
2013	***	***	***	***	***	***
2014	***	***	***	***	***	***
2015	***	***	***	***	***	***
2016	***	***	***	***	***	***
2017	***	***	***	***	***	***
2018	***	***	***	***	***	***
2023p	***	***	***	***	***	***

a. Includes micropowder and reclaimed/recycled resin

Source: IHS Markit, *Chemical Economics Handbook*: Fluoropolymers, April 2019, p. 145.

Table VII-18
PTFE resin: Global exports by exporter, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Quantity (1,000 pounds dry weight)		
United States	23,848	23,052	31,244
India	21,773	24,474	24,950
Russia	15,503	19,401	14,354
China	55,078	50,504	47,477
Saudi Arabia	87	220	33,194
Germany	22,600	25,591	22,116
Italy	23,212	24,897	22,045
Netherlands	16,990	19,227	16,562
Japan	10,888	10,106	10,812
Belgium	13,063	11,606	10,578
United Kingdom	6,294	6,851	6,140
Korea	1,059	1,860	1,922
All other exporters	6,241	13,384	7,926
All reporting exporters	216,635	231,174	249,321
	Value (1,000 dollars)		
United States	135,418	140,309	147,097
India	77,370	109,554	110,006
Russia	46,925	77,625	36,790
China	196,507	226,802	184,104
Saudi Arabia	77	154	12,274
Germany	127,258	151,132	137,797
Italy	112,724	134,904	108,548
Netherlands	95,034	118,659	103,481
Japan	76,898	74,520	76,743
Belgium	55,723	62,487	55,314
United Kingdom	47,750	58,953	55,683
Korea	5,678	8,961	6,904
All other exporters	36,383	47,378	47,543
All reporting exporters	1,013,744	1,211,438	1,082,284

Table continued on next page.

Table VII-18--Continued
PTFE resin: Global exports by exporter, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Unit value (dollars per pound dry weight)		
United States	5.68	6.09	4.71
India	3.55	4.48	4.41
Russia	3.03	4.00	2.56
China	3.57	4.49	3.88
Saudi Arabia	0.88	0.70	0.37
Germany	5.63	5.91	6.23
Italy	4.86	5.42	4.92
Netherlands	5.59	6.17	6.25
Japan	7.06	7.37	7.10
Belgium	4.27	5.38	5.23
United Kingdom	7.59	8.61	9.07
Korea	5.36	4.82	3.59
All other exporters	5.83	3.54	6.00
All reporting exporters	4.68	5.24	4.34
	Share of quantity (percent)		
United States	11.0	10.0	12.5
India	10.1	10.6	10.0
Russia	7.2	8.4	5.8
China	25.4	21.8	19.0
Saudi Arabia	0.0	0.1	13.3
Germany	10.4	11.1	8.9
Italy	10.7	10.8	8.8
Netherlands	7.8	8.3	6.6
Japan	5.0	4.4	4.3
Belgium	6.0	5.0	4.2
United Kingdom	2.9	3.0	2.5
Korea	0.5	0.8	0.8
All other exporters	2.9	5.8	3.2
All reporting exporters	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 3904.61 reported by various national statistical authorities in the Global Trade Atlas database, accessed February 10, 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
86 FR 7876, February 2, 2021	*Granular Polytetrafluoroethylene (PTFE) Resin From India and Russia; Institution of Anti-Dumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-02-02/pdf/2021-02108.pdf
86 FR 10926, February 23, 2021	*Granular Polytetrafluoroethylene Resin From India and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-02-23/pdf/2021-03621.pdf
86 FR 10931, February 23, 2021	*Granular Polytetrafluoroethylene Resin From India and the Russian Federation: Initiation of Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-02-23/pdf/2021-03622.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

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

Subject:	Granular Polytetrafluoroethylene ("PTFE") Resin from India and Russia
Inv. Nos.:	701-TA-663-664 and 731-TA-1555-1556 (Preliminary)
Date and Time:	February 17, 2021 - 9:30 a.m.

OPENING REMARKS:

Petitioner (**Luke A. Meisner**, Schagrin Associates)

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

Schagrin Associates
Washington, DC
on behalf of

Daikin America, Inc.

Greg Rubin, Vice President of Sales and Commercial Activity, Daikin America, Inc.

Scott Segars, Plant Controller, Daikin America, Inc.

Michael Cagle, Manager of PTFE Production Operations, Daikin America, Inc.

Lensey Smith, Applications Technology Manager for Polymer Division, Daikin America, Inc.

Jon Heckman, Sales Manager-PTFE, Daikin America, Inc.

In Support of the Imposition of
Antidumping and Countervailing Duty Orders (continued):

Mallory Peragine, Product Manager- Fluoropolymers PTFE,
Daikin America Inc.

Roger B. Schagrin)
Elizabeth J. Drake)
) – OF COUNSEL
Luke A. Meisner)
Benjamin J. Bay)

CLOSING REMARKS:

Petitioner (**Roger B. Schagrin**, Schagrin Associates)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
Granular PTFE: Summary data concerning the U.S. market defining the U.S. industry to only include U.S. producers, 2017-19, January to September 2019, and January to September 2020

(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Productivity=pounds dry weight per hour; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; 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. consumption quantity:									
Amount	***	***	***	***	***	▼***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▼***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. importers' U.S. shipments of imports from:									
India:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Russia									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Subject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. producers':									
Producers: Average capacity quantity	***	***	***	***	***	▲***	▼***	▲***	***
Producers: Production quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers: Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Inventories/total shipments (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***

Table continued on next page.

Table C-1--Continued
Granular PTFE: Summary data concerning the U.S. market defining the U.S. industry to only include U.S. producers, 2017-19, January to September 2019, and January to September 2020
(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Productivity=pounds dry weight per hour; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; 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:									
Production workers	***	***	***	***	***	▼***	▲***	▼***	▼***
Hours worked (1,000s)	***	***	***	***	***	▼***	▲***	▼***	▼***
Wages paid ($1,000)	***	***	***	***	***	▼***	▲***	▼***	▼***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▲***
Producers: Productivity	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers: Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▼***
Net sales:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▲***	▼***	▼***
Gross profit or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▲***
SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Operating income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▲***
Net income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▲***
Capital expenditures	***	***	***	***	***	▼***	▲***	▼***	▲***
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.

Table C-2

Granular PTFE: Summary data concerning the U.S. market defining the U.S. industry to include both U.S. producers and U.S. compounders, 2017-19, January to September 2019, and January to September 2020

(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Productivity=pounds dry weight per hour; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; 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. consumption quantity:									
Amount	***	***	***	***	***	▼***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▼***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)									
Fully domestic value	***	***	***	***	***	▼***	▼***	▼***	▼***
Value added to imports	***	***	***	***	***	▲***	▼***	▲***	▼***
Total value	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. importers' U.S. shipments of imports from:									
India:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Russia									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Subject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. producers' and U.S. compounders':									
Producers: Average capacity quantity	***	***	***	***	***	▲***	▼***	▲***	***
Producers: Production quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers: Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Compounders: Average capacity quantity	***	***	***	***	***	▼***	***	▼***	***
Compounders: Production quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Compounders: Capacity utilization (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. shipments (fn2):									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value:									
Fully domestic value	***	***	***	***	***	▼***	▲***	▼***	▼***
Value added to imports	***	***	***	***	***	▲***	▲***	▼***	▼***
Total value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***

Table continued on next page.

Table C-2--Continued

Granular PTFE: Summary data concerning the U.S. market defining the U.S. industry to include both U.S. producers and U.S. compounders, 2017-19, January to September 2019, and January to September 2020

(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Productivity=pounds dry weight per hour; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; 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' and U.S. compounders'--Continued:									
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)	***	***	***	***	***	▲***	▼***	▲***	▲***
Producers: Productivity	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers: Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▼***
Compounders: Productivity	***	***	***	***	***	▼***	▼***	▼***	▼***
Compounders: Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▲***
Net sales (fn3):									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▲***	▼***	▼***
Gross profit or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Operating income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
Capital expenditures	***	***	***	***	***	▼***	▲***	▼***	▲***
Research and development expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Net assets	***	***	***	***	***	▼***	▲***	▼***	***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit operating income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit net income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***

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

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

fn2.--The quantity for U.S. producers' U.S. shipments reflects the quantity of PTFE sold in the United States from U.S. producers that chemically manufacture their own PTFE; The value for U.S. producers' U.S. shipments reflects the value of PTFE sold in the United States from U.S. producers plus the additional value added to PTFE by U.S. compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once as imported or domestically produced PTFE. The average unit value of U.S. shipments is based on the fully domestic value.

fn3.--Because some of the granular PTFE consumed by U.S. compounders was sourced from U.S. producers, a degree of double counting of is inherent in the combined financial results of U.S. producers and compounders. Since U.S. producers' relevant granular PTFE sales to U.S. compounders are reflected in U.S. compounders' COGS, consolidated profitability, all things being equal, is not directly impacted by double counting.

fn4.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

Related party exclusion based on C-2

Table C-3

Granular PTFE: Summary data concerning the U.S. market defining the U.S. industry to include both U.S. producers and U.S. compounders, excluding one U.S. compounder *, 2017-19, January to September 2019, and January to September 2020**

(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Productivity=pounds dry weight per hour; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; 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. consumption quantity:									
Amount	***	***	***	***	***	▼***	▲***	▼***	▼***
Producers' share (fn1)									
Included producers	***	***	***	***	***	▼***	▼***	▼***	▼***
Excluded producers	***	***	***	***	***	***	***	***	***
All producers	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▼***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)									
Included producers	***	***	***	***	***	▼***	▼***	▼***	▼***
Excluded producers	***	***	***	***	***	▼***	▼***	▼***	***
All producers	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. importers' U.S. shipments of imports from:									
India:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Russia									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Subject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Included U.S. producers' and U.S. compounders':									
Producers: Average capacity quantity	***	***	***	***	***	▲***	▼***	▲***	***
Producers: Production quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers: Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Compounders: Average capacity quantity	***	***	***	***	***	***	***	***	***
Compounders: Production quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Compounders: Capacity utilization (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
U.S. shipments (fn2):									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***

Table continued on next page.

Table C-3--Continued

Granular PTFE: Summary data concerning the U.S. market defining the U.S. industry to include both U.S. producers and U.S. compounders, excluding one U.S. compounder *, 2017-19, January to September 2019, and January to September 2020**

(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Productivity=pounds dry weight per hour; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; 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
Included U.S. producers' and U.S. compounders'--Continued:									
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)	***	***	***	***	***	▲***	▼***	▲***	▲***
Producers: Productivity	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers: Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▼***
Compounders: Productivity	***	***	***	***	***	▼***	▼***	▼***	▼***
Compounders: Unit labor costs	***	***	***	***	***	▲***	▼***	▲***	▲***
Net sales (fn3):									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▲***	▼***	▼***
Gross profit or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Operating income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
Capital expenditures	***	***	***	***	***	▼***	▲***	▼***	▲***
Research and development expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Net assets	***	***	***	***	***	▲***	▲***	▼***	***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit operating income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit net income or (loss) (fn4)	***	***	***	***	***	▼***	▲***	▼***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***

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

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

fn2.--The quantity for U.S. producers' U.S. shipments reflects the quantity of PTFE sold in the United States from U.S. producers that chemically manufacture their own PTFE; The value for U.S. producers' U.S. shipments reflects the value of PTFE sold in the United States from U.S. producers plus the additional value added to PTFE by U.S. compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once as imported or domestically produced PTFE. The average unit value of U.S. shipments is based on the fully domestic value.

fn3.--Because some of the granular PTFE consumed by U.S. compounders was sourced from U.S. producers, a degree of double counting of is inherent in the combined financial results of U.S. producers and compounders. Since U.S. producers' relevant granular PTFE sales to U.S. compounders are reflected in U.S. compounders' COGS, consolidated profitability, all things being equal, is not directly impacted by double counting.

fn4.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

APPENDIX D

U.S. COMPOUNDERS' TRADE AND FINANCIAL DATA

Table D-1

Granular PTFE: U.S. compounders, their position on the petition, location of production, and share of reported production, 2019

Firm	Position on petition	Production location(s)	Share of filling / processing (percent)
3M	***	Aston, PA	***
AGC	***	Downingtown, PA	***
Flontech	***	Pittston, PA	***
GFL Americas	***	Rockdale, Texas	***
Total			***

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

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

Table D-2

Granular PTFE: U.S. compounders' ownership, related and/or affiliated firms

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

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

Table D-3

Granular PTFE: U.S. compounders' level of complexity and importance of their processing operations, 2019

Firm	Rating of complexity (1 = least complex, 5 = most complex)				
	1	2	3	4	5
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
	Narrative				
3M	***				
AGC	***				
Flontech	***				
GFL Americas	***				

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

Table D-4

Granular PTFE: Comparison of chemical manufacturing and processing activities, 2017-2019

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

[1] Aggregate net assets (range 2017-2019). ***.
[2] Technical expertise based on aggregate R&D (range 2017-2019). ***.
[3] Total conversion costs / total COGS (range 2017-19). ***.
[4] Aggregate production and related workers (PRW) (range 2017-2019).
[5] Aggregate raw material values (range 2017-2019). These values are being reported under the assumption that raw materials other than Granular PTFE are being sourced domestically. Raw materials values for Granular PTFE compounders were adjusted to remove imported PTFE by multiplying the value for each period by the reported 2019 percentage of raw materials dedicated to domestic PTFE and all other inputs.

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

Table D-5

Granular PTFE: U.S. compounders' nature and extent of processing operations, 2019

Item/Firm	Narrative
Capital investments	
***	***
***	***
***	***
***	***
Technical expertise	
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-5--Continued

Granular PTFE: U.S. compounders' nature and extent of processing operations, 2019

Item/Firm	Narrative
Value added	
***	***
***	***
***	***
***	***
Employment	
***	***
***	***
***	***
***	***
Quantity, type, and source of parts	
***	***
***	***
***	***
***	***
Costs and activities	
***	***
***	***
***	***
***	***

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

Table D-6

Granular PTFE: U.S. compounders' 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 (1,000 pounds dry weight)				
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	***	***	***	***	***
	Production (1,000 pounds dry weight)				
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	***	***	***	***	***
	Capacity utilization (percent)				
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	***	***	***	***	***
	Share of production (percent)				
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	***	***	***	***	***

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 D-1

Granular PTFE: U.S. compounders' capacity, production, and capacity utilization, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

Table D-7

Granular PTFE: U.S. compounders' production by source of input, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Production (1,000 pounds dry weight)				
Filling / processing production: Using domestic PTFE	***	***	***	***	***
Using subject PTFE	***	***	***	***	***
Using nonsubject PTFE	***	***	***	***	***
All imported PTFE	***	***	***	***	***
Any source of PTFE	***	***	***	***	***
	Share of production (percent)				
Filling / processing production: Using domestic PTFE	***	***	***	***	***
Using subject PTFE	***	***	***	***	***
Using nonsubject PTFE	***	***	***	***	***
All imported PTFE	***	***	***	***	***
Any source of PTFE	***	***	***	***	***

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

Table D-8

Granular PTFE: U.S. compounders' 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 (1,000 pounds dry weight)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per pound dry weight)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of quantity (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

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

Table D-9

Granular PTFE: U.S. producers' and U.S. compounders' U.S. shipments for use in combined apparent consumption, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
U.S. producers' U.S. shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments.--Fully domestic value	***	***	***	***	***
Value added to imports	***	***	***	***	***
Total	***	***	***	***	***

Note.--The quantity for U.S. producers' U.S. shipments reflects the quantity of PTFE sold in the United States from U.S. producers that manufacture their own PTFE; The value for U.S. producers' U.S. shipments reflects the value of PTFE sold in the United States from U.S. producers plus the additional value added to PTFE by U.S. compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once as imported or domestically produced PTFE.

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

Table D-10

Granular PTFE: U.S. compounders' and U.S. producers and compounders combined inventories, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
U.S. compounders' end-of-period inventories	***	***	***	***	***
	Ratio (percent)				
Ratio of inventories to.--					
U.S. production	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Quantity (1,000 pounds dry weight)				
U.S. producers' and compounders' end-of-period inventories	***	***	***	***	***
	Ratio (percent)				
Ratio of inventories to.--					
U.S. shipments for apparent consumption	***	***	***	***	***

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

Table D-11

Granular PTFE: U.S. compounders' imports, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

Table D-11--Continued

Granular PTFE: U.S. compounders' imports, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

Table D-11--Continued

Granular PTFE: U.S. compounders' imports, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

Table D-12

Granular PTFE: U.S. compounders' 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 (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

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

Table D-13

Granular PTFE: U.S. producers' and U.S. compounders' combined 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)	***	***	***	***	***

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

Table D-14

Granular PTFE: U.S. producers' and U.S. compounders' combined apparent U.S. consumption, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.-- India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments.-- Fully domestic value	***	***	***	***	***
Value added to imports	***	***	***	***	***
Total value	***	***	***	***	***
U.S. importers' U.S. shipments from.-- India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

Note.--The quantity for U.S. producers' U.S. shipments reflects the quantity of PTFE sold in the United States from U.S. producers that manufacture their own PTFE; The value for U.S. producers' U.S. shipments reflects the value of PTFE sold in the United States from U.S. producers plus the additional value added to PTFE by U.S. compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once as imported or domestically produced PTFE.

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

Table D-15

Granular PTFE: U.S. producers' and U.S. compounders' combined market shares, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
Apparent U.S. consumption	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments.--					
Fully domestic value	***	***	***	***	***
Value added to imports	***	***	***	***	***
Total value	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Table D-16
Granular PTFE: Results of operations of U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Estimated cash flow from operations	***	***	***	***	***
	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)	***	***	***	***	***
	Ratio to total COGS (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***

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Table D-16--Continued
Granular PTFE: Results of operations of U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Unit value (dollars per pound dry weight)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

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

Table D-17
Granular PTFE: Changes in AUV's of U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▲***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▼***	▲***	▲***
Average COGS	▲***	▲***	▲***	▲***
	Change in AUVs (dollars per pound dry weight)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▲***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▼***	▲***	▲***
Average COGS	▲***	▲***	▲***	▲***
Gross profit	▼***	▲***	▼***	▼***
SG&A expense	▲***	▲***	▲***	▲***
Operating income or (loss)	▼***	▲***	▼***	▼***
Net income or (loss)	▼***	▲***	▼***	▼***

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

Table D-18
Granular PTFE: Results of operations of U.S. producers and U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (1,000 pounds dry weight)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Estimated cash flow from operations	***	***	***	***	***
	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)	***	***	***	***	***
	Ratio to total COGS (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***

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Table D-18--Continued
Granular PTFE: Results of operations of U.S. producers and U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Unit value (dollars per pound dry weight)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

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

Table D-19
Granular PTFE: Changes in AUV's of U.S. producers and U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▲***	▼***
Direct labor	▲***	▲***	▲***	▼***
Other factory costs	▲***	▼***	▲***	▲***
Average COGS	▲***	▲***	▲***	▼***
	Change in AUVs (dollars per pound dry weight)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▲***	▼***
Direct labor	▲***	▲***	▲***	▼***
Other factory costs	▲***	▼***	▲***	▲***
Average COGS	▲***	▲***	▲***	▼***
Gross profit	▼***	▲***	▼***	▼***
SG&A expense	▲***	▲***	▲***	▲***
Operating income or (loss)	▼***	▲***	▼***	▼***
Net income or (loss)	▼***	▲***	▼***	▼***

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

Table D-20
Granular PTFE: Capital expenditures and research and development (R&D) expenses of U.S. compounders, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Capital expenditures (1,000 dollars)				
All compounders	***	***	***	***	***
	Research and development expenses (1,000 dollars)				
All compounders	***	***	***	***	***

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

Table D-21
Granular PTFE: Narrative descriptions of U.S. compounders capital expenditures and R&D expenses since January 1, 2017

Capital expenditures	
Firm	**Narrative**
3M	***
AGC	***
Flontech	***
GFL Americas	***
R&D expenses:	
Firm	**Narrative**
3M	***
AGC	***
Flontech	***
GFL Americas	***

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

Table D-22
Granular PTFE: Total net assets and operating return on net assets of U.S. compounders, 2017-19

Firm	Calendar year		
	2017	2018	2019
	Total net assets (1,000 dollars)		
All compounders	***	***	***
	Operating return on assets (percent)		
All compounders	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires