Pentafluoroethane (R-125) from China

Investigation Nos. 701-TA-662 and 731-TA-1554 (Preliminary)

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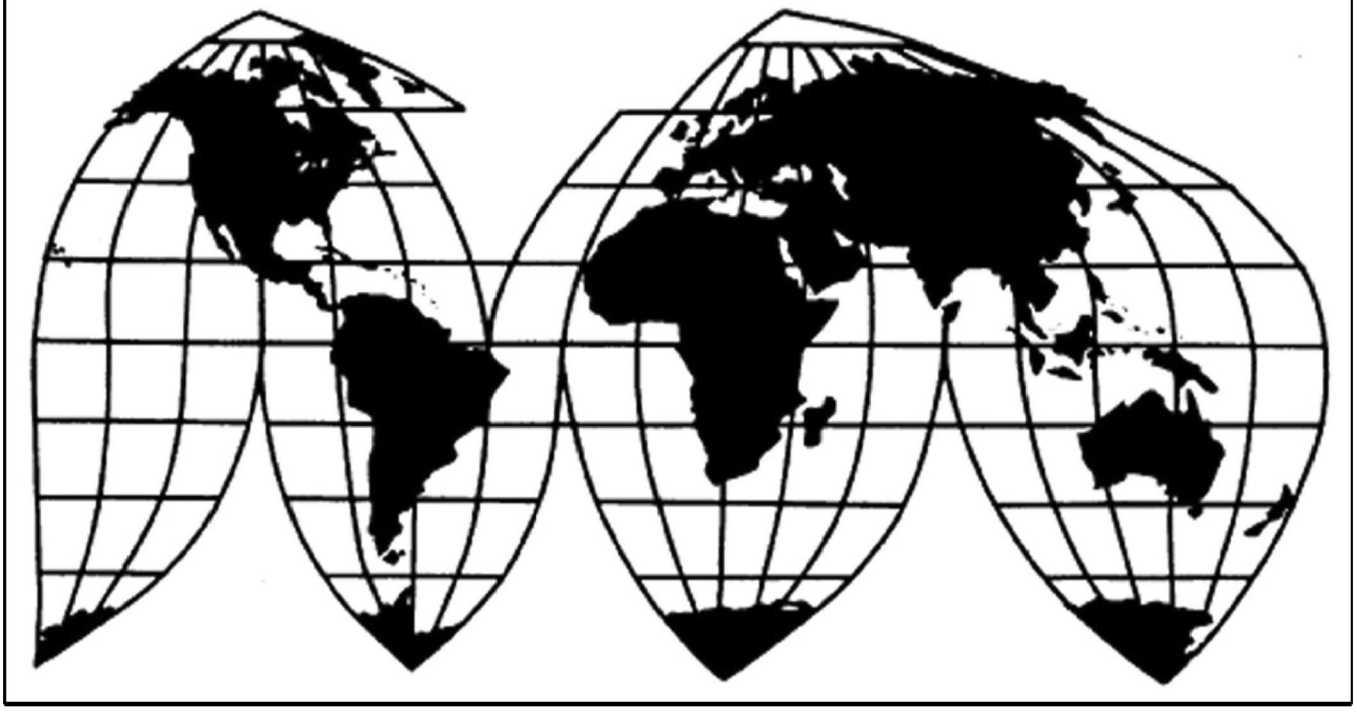

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-662 and 731-TA-1554 (Preliminary)

Pentafluoroethane (R-125) from China

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of pentafluoroethane (R-125) ("R-125") from China, provided for in subheading 2903.39.20 of the Harmonized Tariff Schedule of the United States and may also be included in certain mixtures provided for in subheading 3824.78.00 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 government of China.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in § 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.

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[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 8583 and 86 FR 8589 (February 8, 2021).

BACKGROUND

On January 12, 2021, Honeywell International, Inc., Charlotte, North Carolina filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of R-125 from China and LTFV imports of R-125 from China. Accordingly, effective January 12, 2021, the Commission instituted countervailing duty investigation no. 701-TA-662 and antidumping duty investigation no. 731-TA-1554 (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 January 19, 2021 (86 FR 5247). 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 2, 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 pentafluoroethane ("R-125") from China that are allegedly sold in the United States at less than fair value and are allegedly subsidized by the government of China.

I. The Legal Standard for Preliminary Determinations

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

II. Background

Honeywell International, Inc. ("Honeywell" or "Petitioner"), a U.S. producer of R-125, filed the petitions in these investigations on January 12, 2021. Petitioner submitted testimony,

[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).

appeared at the staff conference,[3] accompanied by Petitioner's counsel, and submitted a postconference brief.[4]

Counsel for National Refrigerants, Inc. ("National" or "Respondent"), a U.S. importer of R-125 from China, submitted testimony,[5] appeared at the staff conference, and submitted a postconference brief.[6]

U.S. industry data are based on the questionnaire response of one firm – Honeywell – accounting for all known U.S. production of R-125 in 2019.[7] U.S. import data are based on questionnaire responses from 15 U.S. importers, accounting for approximately *** percent of U.S. imports from China in 2019 under subheading 2903.39.20 of the Harmonized Tariff Schedule of the United States ("HTS").[8] The Commission did not receive any questionnaire responses from Chinese producers of R-125.[9]

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

[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] *See* Letter from Daniel Cannistra, Crowell & Moring LLP, to Lisa R. Barton, Secretary, *Re: R-125 (Pentafluoroethane) from the People's Republic of China: Honeywell International, Inc.'s Post-Conference Brief* (Feb. 5, 2021) ("Petitioner's Postconference Brief").

[5] *See* Letter from Jonathan M. Freed, Trade Pacific PLLC, to Lisa R. Barton, Secretary, *Re: R-125 (Pentafluoroethane) from the People's Republic of China: Witness Testimony* (Feb. 1, 2021) ("Respondent's Testimony").

[6] *See* Letter from Jarrod M. Goldfeder, Trade Pacific PLLC, to Lisa R. Barton, Secretary, *Re: R-125 (Pentafluoroethane) from the People's Republic of China: Post-Conference Brief* (Feb. 5, 2021) ("Respondent's Postconference Brief").

[7] Confidential Report ("CR"), INV-TT-025 (Feb. 19, 2021), and Public Report ("PR") at I-4.

[8] CR/PR at IV-1. HTS subheading 2903.39.20 is a "basket" category that also contains out-of-scope merchandise. *Id.*

[9] CR/PR at VII-3.

subject merchandise, the Commission first defines the "domestic like product" and the "industry."[10] 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."[11] 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."[12]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[13] 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."[14] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[15] The decision regarding the

[10] 19 U.S.C. § 1677(4)(A).

[11] 19 U.S.C. § 1677(4)(A).

[12] 19 U.S.C. § 1677(10).

[13] 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).

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

[15] *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).

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.[16] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[17] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[18] The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[19]

A. Product Description

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

> The merchandise covered by this investigation is pentafluoroethane (R–125), or its chemical equivalent, regardless of form, type or purity level. R–125 has the Chemical Abstracts Service (CAS) registry number of 354–33–6 and the chemical formula C_2HF_5. R–125 is also referred to as Pentafluoroethane, Genetron HFC 125, Khladon 125, Suva 125, Freon 125, and Fc- 125. Subject merchandise

[16] *See, e.g., Cleo*, 501 F.3d at 1299; *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington 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).

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

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

[19] *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).

> includes R–125, whether or not incorporated into a blend. When R–125 is blended with other products, only the R–125 component of the mixture is covered by the scope of this investigation. Subject merchandise also includes R–125 and unpurified R–125 that is processed in a third country or otherwise outside the customs territory of the United States, including, but not limited to, purifying, blending, or any other processing that would not otherwise remove the merchandise from the scope of this investigation if performed in the country of manufacture of the in-scope R–125. The scope also includes R–125 that is commingled with R–125 from sources not subject to this investigation. Only the subject component of such commingled products is covered by the scope of this investigation.
>
> Excluded from the current scope is merchandise covered by the scope of the antidumping order on *Hydrofluorocarbon Blends from the People's Republic of China. See Hydrofluorocarbon Blends from the People's Republic of China: Antidumping Duty Order,* 81 FR 55436 (August 19, 2016) (the *Blends Order*).
>
> R–125 is classified under Harmonized Tariff Schedule of the United States (HTSUS) subheading 2903.39.2035. Merchandise subject to the scope may also be entered under HTSUS subheadings 2903.39.2045 and 3824.78.0020. The HTSUS subheadings and CAS registry number are provided for convenience and customs purposes. The written description of the scope of the investigation is dispositive.[20]

R-125 is a hydrofluorocarbon ("HFC"), a class of man-made chemicals that contain fluorine, carbon, and hydrogen atoms.[21] R-125 is a colorless, odorless gas that is used primarily as a component in HFC blends, which are used in refrigerant applications.[22] Primarily because it is nonflammable, it is included in numerous refrigerant blends.[23] Notably, it does not have

[20] *Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 86 Fed. Reg. 8583, 8588 (Feb. 8, 2021); *Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Countervailing Duty Investigation*, 86 Fed. Reg. 8589, 8593 (Feb. 8, 2021).

[21] CR/PR at I-9.

[22] CR/PR at I-9.

[23] CR/PR at I-10.

sufficient heat transfer capacity or other thermal properties to be used as a standalone refrigerant.[24] R-125 is also used as a fire extinguishing agent.[25]

When R-125 is blended with other products, only the R-125 component of the blend is covered by the scope. Excluded from the scope is R-125 contained in HFC blends that are already covered by the scope of the antidumping duty order on *Hydrofluorocarbon Blends from the People's Republic of China* (the "*Blends* Order").[26]

B. Arguments of the Parties

Petitioner's Arguments. Petitioner proposes the Commission define a single domestic like product that is coextensive with the scope.[27] Petitioner argues that the Commission should define the R-125 component that has been mixed with other components as within the same like product definition as standalone R-125.[28] It claims that the scope of these investigations, by covering only the R-125 component of imported blends and not the entire blend, is consistent with the scope of the recently completed final investigation on another HFC component, R-32, which is also used in refrigerant blends.[29] Petitioner further argues that the

[24] CR/PR at I-10.

[25] CR/PR at I-9.

[26] The scope of the *Blends* Order covers five HFC blends from China – R-404A, R-407A, R-407C, R-410A, and R-507A. *See Hydrofluorocarbon Blends from the People's Republic of China: Antidumping Duty Order,* 81 Fed. Reg. 55436 (Aug. 19, 2016).

[27] Petitioner's Postconference Brief at 29.

[28] Petitioner's Postconference Brief at 31. According to Petitioner, the five HFC blends that are subject to the *Blends* Order comprise approximately *** percent of the U.S. market for HFC blends, while other HFC blends containing R-125 and other HFC components make up *** percent. Petitioner's Postconference Brief at 31-32, Exhibit 8.

[29] Petitioner's Postconference Brief at 32, *citing Difluoromethane (R-32) from China*, Inv. No. 731-TA-1472 (Preliminary), USITC Pub. 5036 (Mar. 2020).

Respondent's like product analysis is premised on a flawed framework, because it analyzed HFC blends, which are outside of the scope of these investigations, relative to R-125.[30]

Respondent's Arguments. Respondent urges the Commission to define two separate domestic like products: (1) standalone R-125, and (2) R-125 contained in blends not covered by the existing *Blends* Order.[31] Respondent argues that, when it comes to administering any potential orders, there is no practical difference between R-125 as a component in blends and the entire blend.[32] It claims that when a blend enters the United States, U.S. Customs and Border Protection ("Customs") will suspend liquidation for the entire blend.[33] Although it may collect antidumping and countervailing duties only on the R-125 component of the blend, the entries of blends will still be subject to antidumping and countervailing duty requirements solely because R-125 is one of the components.[34] Respondent posits that the only reason to include the R-125 component of blends in the scope of these investigations is to impose antidumping and countervailing duties on imports of blends (containing R-125) that are excluded from the existing *Blends* Order.[35]

[30] Petitioner's Postconference Brief at 33-34.

[31] Respondent's Postconference Brief at 2.

[32] Respondent's Postconference Brief at 3.

[33] Respondent's Postconference Brief at 3.

[34] Respondent's Postconference Brief at 3. According to the Respondent, Commerce does not measure antidumping duties on partial values or portions of imported subject merchandise. Respondent's Postconference Brief at 18, *citing SunEdison, Inc. v. United States*, 179 F.Supp.3d 1309, 1325 (Ct. Int'l Trade 2016).

[35] Respondent's Postconference Brief at 5-6. Respondent contends that the scope of these investigations would potentially extend to 38 known refrigerant blends that are not covered by the *Blends* Order. Respondent's Postconference Brief at 15, Exhibit 6.

C. Analysis

We note at the outset that Respondent's proposed like product analysis appears to be premised on considering certain downstream blends containing R-125 as within the scope of these investigations; Respondent therefore compares these blends with standalone R-125. The scope, however, clearly consists of standalone R-125 and only the R-125 component in a downstream blend; the blend itself is not included in the scope.[36] [37] Given this scope, the appropriate analysis is whether R-125 already in blends should be included in the same domestic like product as standalone R-125. Based on an analysis of the traditional domestic like

[36] The scope of these investigations as initiated by Commerce states in relevant part: "Subject merchandise includes R-125, whether or not incorporated into a blend. When R-125 is blended with other products, only the R-125 component of the mixture is covered by the scope of this investigation." *See Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 86 Fed. Reg. 8583, 8588 (Feb. 8, 2021); *Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Countervailing Duty Investigation*, 86 Fed. Reg. 8589, 8593 (Feb. 8, 2021).

[37] The scope as originally submitted in the petitions stated only that: "Subject merchandise includes R-125, whether or not incorporated into a blend." Petition, Volume I at 8. Because there was some ambiguity in the original scope language contained in the petitions, the Commission's preliminary phase questionnaires requested that market participants compare "pure 125" with "in-scope blends containing R-125." *See* U.S. Importer's Questionnaire at IV-1; U.S. Producer's Questionnaire at V-1. Petitioner, however, amended the scope after the Commission's questionnaires were sent out to add the language clarifying that: "When R–125 is blended with other products, only the R-125 component of the mixture is covered by the scope of this investigation." *See* Letter from Daniel Cannistra, Crowell & Moring LLP, to Wilbur L. Ross Jr., Secretary, *Re: R-125 (Pentafluoroethane) from the People's Republic of China: Honeywell International Inc.'s Third Supplemental Questionnaire Response* (Jan. 28, 2021), EDIS Doc. #731166. Commerce initiated its investigations based on the amended scope language, which explicitly includes only the R-125 component in a blend. *See Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 86 Fed. Reg. 8583, 8588 (Feb. 8, 2021); *Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Countervailing Duty Investigation*, 86 Fed. Reg. 8589, 8593 (Feb. 8, 2021). Thus, it is clear that the amended scope language does not include the blends themselves. The Commission typically does not expand the domestic like product to include domestically produced downstream articles when there is no corresponding downstream imported article within the scope, and no party has argued that the Commission should expand the domestic like product in such a manner in the present investigations. *See Low Enriched Uranium from France, Germany, the Netherlands, and the United Kingdom*, Inv. Nos. 701-TA-409-412, 731-TA-909-912 (Preliminary), USITC Pub. 3388 (Jan. 2001) at 6. Therefore, for the purposes of the preliminary phase of these investigations, we decline to expand the domestic like product to include downstream blends containing R-125.

product factors, we define a single domestic like product consisting of all R-125, coextensive with the scope of these investigations.

Physical Characteristics and Uses. Standalone R-125 and R-125 in blends have the same physical characteristics in that they are both HFCs, with the same chemical and molecular make-up.[38] Although more readily observable in standalone R-125, both standalone R-125 and R-125 as a component in a blend also have the same attributes – they do not have sufficient heat transfer capacity or other thermal properties as a standalone or single component to be used as a refrigerant, and must be mixed with other components to form a blend used for refrigeration.[39] Standalone R-125 is most commonly blended with other HFC components to form an HFC blend used for refrigeration; however, it has some other limited end uses, such as a fire extinguishing agent or in the fabrication of semiconductor materials.[40] R-125 as a component in blends is simply standalone R-125 that has already been mixed with other components to form a blend.

Manufacturing Facilities, Production Processes, and Employees. Initially, both standalone R-125 and R-125 as a component in a blend are manufactured by the reaction of a chlorinated starting compound with hydrofluoric acid, which is known as hydrofluorination and yields a carbon-hydrogen-fluorine compound and hydrochloric acid.[41] R-125 as a component in blends undergoes the additional processing step of being mixed with other components to form

[38] *See* CR/PR at I-9.

[39] *See* CR/PR at I-10, II-2. Respondent contends that standalone R-125 has poor refrigeration performance as a single component refrigerant and thus it and R-125 in blends have very different physical characteristics and end uses. Respondent's Testimony at 2-3. Respondent's argument, however, appears to focus on the downstream blend rather than the R-125 component.

[40] *See* CR/PR at I-9, II-1 to II-2.

[41] CR/PR at I-12.

a blend; however, its physical characteristics are not altered by this additional processing step.[42]

Channels of Distribution. Standalone R-125 is most commonly either internally consumed or sold to third-party blenders to be used as a component in the production of HFC blends.[43] While the downstream blend containing R-125 is most commonly sold to original equipment manufacturers ("OEMs") and end users, this is a difference in the channels of distribution for the downstream blend as compared to standalone R-125. However, most standalone R-125 is ultimately incorporated into a downstream blend.

Interchangeability. All R-125 is interchangeable in the sense that it has the same physical characteristics, whether standalone or already mixed with blends.[44] Standards set by the Air Conditioning, Heating, and Refrigeration Institute ("AHRI") establish maximum levels of contaminants for R-125.[45] Once R-125 has been blended with other components, it would not be economically feasible (although it is technically possible) to extract it from blends to return it to being standalone R-125.[46]

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[42] *See* CR/PR at I-12 to I-13. Focusing on the downstream blend, Respondent argues that a company could not retrofit a blending facility to produce standalone R-125, nor could a standalone R-125 manufacturer produce blends without the required equipment and know-how to do so efficiently and with necessary safety controls. Respondent's Testimony at 3.

[43] *See* CR/PR at II-1. According to Honeywell, "R-125 is directly sold to end-users to a much higher degree" than other refrigerant components. *Id.* at n.8. Respondent argues that standalone R-125 is sold predominately to companies that blend the R-125 with other components, while blends containing R-125 typically are sold through the wholesale distribution channel to refrigeration or air-conditioning contractors and sometimes sold directly to equipment owners. Respondent's Testimony at 3.

[44] *See* CR/PR at II-1 n.6.

[45] CR/PR at II-1.

[46] CR/PR at I-12. Respondent contends that once blended, R-125 cannot be separated from the other components without significant engineering capabilities, and doing so would not be economically feasible. Respondent's Testimony at 3.

Producer and Customer Perceptions. Standalone R-125 is most commonly perceived by producers and customers as a component for an HFC blend. We recognize that producers and customers also perceive some standalone uses for R-125 as well.[47]

Price. There are no separate prices for R-125 as a component in a blend, there are only prices for standalone R-125 and the blends containing R-125. This is because R-125 as a component already in blends is not commercially available. However, its price when sold to a blender is that of standalone R-125.[48]

Conclusion. The physical characteristics of R-125 and R-125 as a component in a blend are exactly the same and there are overlapping end uses, as most standalone R-125 is produced to be a component in a blend. The production processes also mostly overlap, with R-125 as a component in blends undergoing the additional production step of being blended with other components; however, the physical characteristics of the R-125 component are unaltered by this additional production step.[49] The producer and customer perceptions mostly overlap as well, since most standalone R-125 is perceived as a component for a blend. We acknowledge that there are some limited end uses for standalone R-125 other than being incorporated into a blend, that standalone R-125 is typically internally consumed or sold to third-party blenders

[47] *See* CR/PR at I-9, II-1 to II-2. According to the Respondent, an R-125 producer would not market or sell standalone R-125 to refrigeration or air-conditioning contractors, and producers of blends with R-125 would not market or sell R-125 already in blends to companies that blend R-125. Respondent's Testimony at 3-4.

[48] According to the Respondent, the price of standalone R-125 is not comparable to the downstream products that are made from it. Respondent's Testimony at 4. This argument incorrectly focuses on the finished downstream product that is not included in the scope rather than the R-125 component of the blend.

[49] We note that there is only a single domestic producer of R-125, which produces both the standalone R-125 and, by extension, the R-125 used as a component in blends; there are not separate domestic producers making standalone R-125 and R-125 used as a component in blends.

rather than sold to OEMs and end users, and that R-125 that has been incorporated into a blend cannot be easily, or economically, separated from the blend and returned to being standalone R-125. Nevertheless, all R-125 is interchangeable in the sense that it has the same physical characteristics, whether standalone or mixed with a blend, and must meet the same industry standard. Based on the foregoing, we find, for the purposes of the preliminary phase of these investigations, that there is not a clear dividing line between standalone R-125 and R-125 that is a component in a blend.

Therefore, for purposes of the preliminary phase of these investigations, we define a single domestic like product coextensive with the scope, including standalone R-125 and R-125 as a component within a blend.[50]

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[51] 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.

[50] As noted above, Respondent raises concerns about the scope and the possible effects of these investigations on imports of downstream blends. If parties intend to raise any domestic like product arguments in any final phase of these investigations, including regarding downstream blends, they should provide arguments with specificity for data collection in their comments on the Commission's draft questionnaires.

[51] 19 U.S.C. § 1677(4)(A).

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to Section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[52] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[53]

Petitioner Honeywell is subject to the related party provision because it directly imported subject merchandise during the period of investigation ("POI").[54] Honeywell *** imported *** short tons of R-125 from China in *** (the equivalent of *** percent of its domestic production in ***), and *** short tons of R-125 from China in *** (the equivalent of *** percent of its domestic production in ***).[55] Honeywell accounts for all domestic production of R-125.[56] Honeywell's low level of subject imports relative to its domestic

[52] *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).

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

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

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

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

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

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

[54] CR/PR at III-2, III-9.

[55] CR/PR at Table III-6.

[56] CR/PR at III-1, Table III-1.

production and its status as Petitioner indicate that its primary concern lies in domestic production, not importation. Accordingly, we find that appropriate circumstances do not exist to exclude Honeywell from the domestic industry.

We consequently define the domestic industry to include all domestic producers of the domestic like product, namely Honeywell.

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

Based on the record in the preliminary phase of these investigations, we find that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of dumped and subsidized R-125 from China.

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.[57] 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.[58] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[59] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant

[57] 19 U.S.C. §§ 1671b(a), 1673b(a).

[58] 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).

[59] 19 U.S.C. § 1677(7)(A).

economic factors that bear on the state of the industry in the United States.[60] 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."[61]

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,[62] 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.[63] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[64]

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[60] 19 U.S.C. § 1677(7)(C)(iii).

[61] 19 U.S.C. § 1677(7)(C)(iii).

[62] 19 U.S.C. §§ 1671b(a), 1673b(a).

[63] *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).

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

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.[65] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[66] Nor does the

[65] 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.

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

"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.[67] It is clear that the existence of injury caused by other factors does not compel a negative determination.[68]

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."[69] 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."[70] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[71]

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

[68] *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.").

[69] *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*.

[70] *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.

[71] *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.").

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[72] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[73]

B. Conditions of Competition and the Business Cycle[74]

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

1. Captive Production Provision

We first consider the applicability of the statutory captive production provision.[75] Petitioner argues that the Commission should find that the captive production provision does

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

[73] *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.").

[74] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). Negligibility is not an issue in these investigations. From January to December 2020, the twelve-month period preceding the filing of the petitions, subject imports from China accounted for *** percent of total U.S. imports of R-125 by quantity. CR/PR at Table at IV-4.

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

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

(I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product, and

(II) the domestic like product is the predominant material input in the production of that

not apply because R-125 is not the predominant material input in the production of the various HFC blends produced by Honeywell or the larger HFC market.[76] Respondent takes no position on the applicability of the captive production provision.[77]

Threshold Criterion. The captive production provision can be applied only if, as a threshold matter, significant production of the domestic like product is internally transferred and significant production is sold in the merchant market. In these investigations, internal consumption accounted for between *** and *** percent of the domestic industry's total shipments of R-125 during the POI.[78] The merchant market (including swaps[79]) accounted for between *** percent and *** percent of the domestic industry's total shipments in this period.[80] We find that both the internal transfer and merchant market segments (including swaps) constitute significant portions of the market, and that the threshold criterion is therefore satisfied.

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downstream article,

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

[76] Petitioner's Postconference Brief at 9. According to the Petitioner, R-125 represented, on average, less than *** percent of the raw material cost of the downstream blends that Honeywell produced from 2018 to 2020. *Id*. In terms of material composition, it maintains that R-125 makes up *** percent, on average, of the blends produced and sold by Honeywell. *Id.* n.19.

[77] Respondent's Postconference Brief at 13-14.

[78] CR/PR at Table III-4.

[79] As explained further below, some of Honeywell's shipments of R-125 consist of *** with other domestic HFC component producers, in which ***. *See* CR/PR at VI-8 n.5.

[80] *Derived from* CR/PR at Table III-4. Commercial U.S. shipments accounted for between *** percent and *** percent of the domestic industry's total shipments during the POI. *Id.* Swaps accounted for between *** and *** percent of the domestic industry's total shipments during this period. *Id.* Export shipments of R-125 by the domestic industry, which only occurred in ***, accounted for *** percent of its total shipments that year. *Id.* The record indicates that the swaps meet the criteria for "sales." *See* CR/PR at VI-8 n.5; *Bethlehem Steel Corp. v. United States*, 294 F.Supp.2d 1359, 1365 (Ct. Int'l Trade 2003) (to be considered a "sale" in the merchant market, there must be transfer of title, payment of consideration, and transfer of title to an unrelated party).

First Statutory Criterion. The first criterion focuses on whether any of the domestic like product that is internally transferred for processing is in fact sold on the merchant market.[81] Honeywell reported internal consumption of R-125 for the production of downstream HFC products and did not report any production of R-125 that was to be internally consumed but was diverted to the merchant market.[82] Therefore, this criterion is satisfied.

Second Statutory Criterion. In applying the second criterion, we generally consider whether the domestic like product is the predominant material input into a downstream product by referring to its share of the raw material cost of the downstream product.[83] In these investigations, R-125 reportedly comprised between *** percent and *** percent of the value of material inputs for the downstream blends, and between *** percent and *** percent of the quantity of material inputs for the downstream blends. On average, R-125 comprised about *** percent of the value of material inputs for the downstream HFC products produced with R-125, and it reportedly accounts for no more than *** percent of the quantity of material inputs.[84]

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

[82] CR/PR at III-11. Honeywell reported that from 2018 to 2020, it used R-125 to make blends including R-410A, R-407C, R-422D, R-404A, R-507A, R-438A, R-407A, R-407F, R-407H, R-448A, and R-449A. *Id.* at n.7.

[83] We have construed "predominant" to mean the main or strongest element, and not necessarily a majority, of the inputs by value. *See Polyvinyl Alcohol from Germany and Japan*, Inv. Nos. 731-TA-1015-16 (Final) (June 2003), USITC Pub. 3604 (June 2003), at 15 n.69.

[84] CR/PR at Table III-8. Responding importers reported that R-125 accounts for a varying share of the cost of the HFC blends in which it is used, but generally reported a small-to-moderate share for the reported end use in HFC blends. *Id.* at II-8.

Conclusion. Based on the above analysis and absent any contrary arguments, we conclude that the second criterion for application of the captive production provision is not met.[85] Accordingly, for the purposes of the preliminary phase of these investigations, we will focus on the overall R-125 market in analyzing the market share and financial performance of the domestic industry. We do, however, consider the industry's significant captive consumption of R-125 as a relevant condition of competition.

2. Other HFC Components Proceedings, Including Alleged Circumvention of the Antidumping Duty Order on HFC Blends from China

On August 5, 2016, the Commission determined that an industry in the United States was materially injured by reason of dumped imports of HFC blends from China. The Commission also determined that an industry in the United States was not materially injured or threatened with material injury by reason of dumped imports of HFC components (specifically, R-32, R-125, and R-143a) from China.[86] Commerce subsequently issued an antidumping duty

[85] In any final phase of these investigations, we intend to collect data from the domestic producer in order to calculate the weighted average cost of R-125 as a percentage of total raw material costs for its production of downstream HFC products.

[86] *Hydrofluorocarbon Blends and Components From China; Determination*, 81 Fed. Reg. 53157 (Aug. 11, 2016); *Hydrofluorocarbon Blends and Components From China*, Inv. No. 731-TA-1279, USITC Pub. 4629 (Aug. 2016). In the final phase of the investigation, the Commission found two domestic like products, one consisting of HFC blends and one consisting of HFC components. USITC Pub. 4629 at 10-13. The Commission ultimately made an affirmative present material injury determination with respect to HFC blends, and negative present material injury and threat of material injury determinations with respect to HFC components. USITC Pub. 4629 at 28, 42, 45. Petitioners challenged the Commission's determination that HFC components constituted a separate domestic like product in the U.S. Court of International Trade ("CIT"). *See Arkema, Inc. v. United States*, Ct. No. 16-00179. The CIT subsequently affirmed on second remand the Commission's determination that there were two domestic like products, one consisting of HFC blends and one of HFC components, and the Commission's negative present material injury and threat of material injury determinations with respect to HFC components. *See Arkema, Inc. v. United States*, 81 CIT ____, 393 F.Supp.3d 1177 (Ct. Int'l Trade 2019).

order on imports of HFC blends from China on August 15, 2016, but did not issue an order on HFC components.[87]

On June 18, 2019, Commerce initiated an anticircumvention inquiry to determine whether imports of certain HFC components (*i.e.,* R-32, R-125, and R-143a) from China that are further processed into finished HFC blends in the United States were circumventing the antidumping duty order on HFC blends from China within the meaning of section 781(a) of the Act.[88] On April 6, 2020, Commerce preliminarily determined that HFC components from China were circumventing the antidumping duty order on HFC blends from China.[89] As a result of its preliminary determination, Commerce directed Customs to suspend liquidation and to require a cash deposit of estimated duties at the rate applicable for an exporter of subject imports from China, on all unliquidated entries of HFC components from China that were entered, or withdrawn from warehouse, for consumption on or after June 18, 2019, the date of initiation of Commerce's anticircumvention inquiry.[90]

On August 19, 2020, Commerce made a final negative determination and concluded that imports of HFC components (R-32, R-125, and R-143a) from China were not circumventing the

[87] *Hydrofluorocarbon Blends From the People's Republic of China: Antidumping Duty Order*, 81 Fed. Reg. 55436 (Aug. 19, 2016).

[88] *Hydrofluorocarbon Blends from the People's Republic of China: Initiation of Anti-Circumvention Inquiry on Antidumping Duty Order; Components*, 84 Fed. Reg. 28273 (June 18, 2019).

[89] *Hydrofluorocarbon Blends from the People's Republic of China: Affirmative Preliminary Determination of Circumvention of the Antidumping Duty Order for HFC Components; and Extension of Time Limit for Final Determination*, 85 Fed. Reg. 20248 (Apr. 10, 2020) and accompanying *Decision Memorandum* (Apr. 3, 2020); and *Hydrofluorocarbon Blends and Components From China*, Inv. No. 731-TA-1279, USITC Pub. 4629 (Aug. 2016). Commerce's affirmative preliminary determination in its anticircumvention inquiry concerning imports of HFC components from China did not consider as part of its analysis the Commission's 2016 negative final injury determination on HFC components from China. *Id.*

[90] 85 Fed. Reg. at 20248-49.

antidumping duty order on HFC blends from China.[91] Given its negative circumvention finding that the scope of the antidumping duty order on HFC blends should not include HFC components (including R-125), Commerce directed Customs to refund any cash deposits made for these entries and to discontinue the suspension of liquidation of HFC components.[92]

On January 23, 2020, the Commission instituted an antidumping duty investigation concerning imports of R-32 from China, an HFC component commonly blended with R-125 to produce refrigerant blends.[93] On March 2, 2021, the Commission determined that an industry in the United States was materially injured by reason of dumped imports of R-32 from China.[94] An antidumping duty order on imports of R-32 from China is forthcoming.

3. Demand Conditions

U.S. demand for R-125 depends on the demand for U.S.-produced downstream products, such as HFC blends, which in turn depends on the demand for refrigeration and air conditioning.[95] There is also some demand for R-125 based on other uses, such as a standalone fire suppressant agent or use in the fabrication of semiconductor materials.[96]

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[91] *See Anti-Circumvention Inquiry of Antidumping Duty Order on Hydrofluorocarbon Blends From the People's Republic of China—HFC Components: Final Determination Not To Include Within the Scope of the Order*, 85 Fed. Reg. 51018, 51019 (Aug. 19, 2020), and accompanying *Decision Memorandum*. In its final anticircumvention determination on imports of HFC components (including R-125) from China, Commerce considered the Commission's negative injury determination on HFC components from China as part of its analysis in reaching a negative circumvention decision. *Id., citing* 19 U.S.C. § 1677j(e)(3) (under the process established by the statute, the Commission had notified Commerce that an affirmative circumvention determination on HFC components would raise a significant injury issue).

[92] 85 Fed. Reg. at 51019.

[93] *Difluoromethane (R-32) from China; Institution of Anti-Dumping Duty Investigation and Scheduling of Preliminary Phase Investigation*, 85 Fed. Reg. 5239 (Jan. 29, 2020).

[94] *Difluoromethane (R-32) From China*, 86 Fed. Reg. 13400 (Mar. 8, 2021).

[95] CR/PR at II-7 to II-8.

[96] CR/PR at II-1 to II-2.

Apparent U.S. consumption of R-125 increased each year of the POI, from *** short tons in 2017 to *** short tons in 2018 and *** short tons in 2019.[97] *** and half of responding importers reported no change in U.S. demand for R-125 since January 1, 2017.[98] The other half of responding importers reported an increase in U.S. demand for R-125 since January 1, 2017.[99] Five of 15 responding importers indicated that the U.S. market for R-125 was subject to business cycles, with firms citing increased demand for downstream air conditioning refrigerants during the spring and summer.[100]

In an effort to curb global warming, countries, including the United States, committed in 2016 under the Kigali Amendment to the Montreal Protocol to reduce by more than 80 percent their production and use of HFC components, including R-125, over the next 30 years. The next generation of refrigerant blends replace some HFC components with hydrofluoroolefins ("HFOs"), which have lower global warming potential.[101]

[97] CR/PR at Tables IV-5. Apparent U.S. consumption was lower in interim 2020, at *** short tons, than in interim 2019, at *** short tons. *Id.*

[98] CR/PR at Table II-4. Honeywell reported that it follows several indicators to track demand for R-125, including gross domestic product ("GDP") and residential and nonresidential housing construction. *See* CR/PR at II-9. Seasonally adjusted new residential construction increased from January 2017 to December 2019, then decreased overall from January 2020 to September 2020 (although it increased from May 2020 to September 2020). CR/PR at II-10, Fig. II-1. The Dodge Momentum Index (monthly measure of nonresidential building projects in planning) spiked downward in mid-2017, but increased overall from January 2017 to December 2019; it decreased from January 2020 to September 2020. CR/PR at II-11, Fig. II-2. Seasonally adjusted real GDP as a percent change from the preceding quarter was positive from January 2017 to December 2019, before decreasing during the first half of 2020 and then recovering in the second half of 2020. CR/PR at II-12, Fig. II-3.

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

[100] CR/PR at II-8.

[101] CR/PR at I-10 to I-11. On December 27, 2020, the President signed the American Innovation and Manufacturing ("AIM") Act, which will result in reduced production and use of HFC components, including R-125, in alignment with the Kigali Amendment. *Id.* at I-11.

4. Supply Conditions

The domestic industry supplied the largest share of the U.S. R-125 market throughout the full years of the POI. As noted above, there was a single domestic producer accounting for all domestic production in 2019.[102] The domestic industry's share of the quantity of apparent U.S. consumption decreased continuously from *** percent in 2017 to *** percent in 2018 and *** percent 2019.[103]

Subject imports' share of the quantity of apparent U.S. consumption increased continuously over each year of the POI; it was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[104]

Nonsubject imports were virtually nonexistent as a source of supply to the U.S. market throughout the POI. Nonsubject imports' share of the quantity of apparent U.S. consumption was *** percent in 2017, *** percent in 2018, and *** percent to 2019.[105] India was reported as the only source of nonsubject imports during the full years of the POI.[106]

[102] While *** and all ten responding U.S. importers reported that there were no supply constraints during the POI, as discussed further below, certain firms alleged that there were supply constraints elsewhere in the questionnaire responses and at the staff conference. *See* CR/PR at II-6 to II-7.

[103] CR/PR at Table IV-5. The domestic industry's share of the quantity of apparent U.S. consumption was higher in interim 2020, at *** percent, than in interim 2019, when it was *** percent. *Id.*

[104] CR/PR at Table IV-5. Subject imports' share of the quantity of apparent U.S. consumption was lower in interim 2020, at *** percent, than in interim 2019, when it was *** percent. *Id.*

[105] CR/PR at Tables IV-5. Nonsubject imports' share of apparent U.S. consumption was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[106] CR/PR at II-1.

5. Substitutability and Other Conditions

Based on the record, we find that domestically produced R-125 and subject imports are highly substitutable.[107] As noted above, all R-125 is produced to AHRI standards whether originating in the United States or China.[108] The U.S. producer and all responding importers reported that the domestic like product and subject imports from China were always interchangeable.[109]

The record also indicates that availability of supply, quality, and, to a somewhat lesser extent, price are important factors in purchasing decisions for R-125.[110] *** purchasers responding to the lost sales/lost revenue survey identified availability/supply as their most important purchasing factor, while *** identified quality as their most important purchasing factor.[111] *** purchasers identified price/cost as their most important purchasing factor, although *** purchaser identified price/cost as its second-most important purchasing factor, while *** identified price as their third-most important purchasing factor.[112] Honeywell reported that factors other than price are *** important, but a majority of responding

[107] CR/PR at II-13. The degree of substitution between domestic and imported R-125 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.*). *Id*.

[108] *See* CR/PR at II-1.

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

[110] While we find that price is an important factor in purchasing decisions, in any final phase of these investigations we intend to further examine the extent to which factors other than price affect purchasing decisions.

[111] *See* CR/PR at II-14.

[112] CR/PR at II-14.

importers reported that non-price differences between the domestic like product and subject imports are always important.[113]

R-125 is produced through a chemical reaction of raw materials hydrofluoric acid and perchloroethylene.[114] Raw materials constituted the largest component of the domestic industry's cost of goods sold ("COGS") and accounted for an increasing share of COGS over the full years of the POI, ranging from *** percent to *** percent.[115] Honeywell reported that the share of hydrofluoric acid in COGS increased from *** percent to *** percent from 2017 to 2019, and the share of perchloroethylene in COGS decreased from *** percent to *** percent over the same period.[116]

Questionnaire data indicate that the majority of the domestic producer's U.S. commercial shipments of R-125 in 2019 were made through ***, with the remainder made through ***.[117] Responding importers' U.S. commercial shipments were made almost entirely on the basis of ***, with the remainder made through ***.[118]

HFC blends are produced domestically by two types of domestic refrigerant producers – integrated producers and independent refrigerant blenders. Integrated producers, such as

[113] CR/PR at Table II-6. Importers reported the availability and reliability of subject import suppliers and the importance of multiple sourcing options as key non-price factors. *See* CR/PR at II-15.

[114] CR/PR at V-1.

[115] CR/PR at Table VI-1. As a share of the domestic industry's COGS, raw material costs increased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019; they were lower in interim 2020, at *** percent, than in interim 2019, at *** percent. *Id*.

[116] CR/PR at Table VI-1.

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

[118] CR/PR at Table V-2. Responding importers' U.S. commercial shipments were *** percent spot sales and *** percent long-term contracts. *Id*.

Honeywell,[119] Arkema, and Chemours, produce HFC blends using HFC components that were obtained via internal transfers, from other domestic component producers, and by importation.[120] Independent refrigerant blenders, which produce no HFC components, produce HFC blends using HFC components that are either purchased from domestic producers or imported (primarily from China).[121] Honeywell ***, so that all three HFC component producers can manufacture HFC blends from those HFC components.[122] The record indicates that the *** are determined pursuant to arms-length prices negotiated by the parties or fair market values of the goods involved in the ***.[123]

An additional 15 percent *ad valorem* duty on imports of R-125 under HTS subheading 2903.39.20 produced in China was scheduled to go into effect on December 15, 2019, under Section 301 of the Trade Act of 1974; however, negotiations led to a suspension of the implementation of these additional duties.[124] There are currently no Section 301 duties in effect for R-125 imported under HTS subheading 2903.39.20.[125]

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[119] As noted, Honeywell produces R-125 as well as HFC blends of which R-125 is a component. *See* CR/PR at VI-9 n.8.

[120] Integrated producers manufacture one or more of the components necessary to produce HFC blends and other refrigerants. *See, e.g., Hydrofluorocarbon Blends and Components from China*, Inv. No. 731-TA-1279 (Final), USITC Pub. No. 4629 (Aug. 2016) at 33.

[121] *See Hydrofluorocarbon Blends and Components from China*, Inv. No. 731-TA-1279 (Final), USITC Pub. No. 4629 (Aug. 2016) at 33.

[122] *See* CR/PR at VI-8 n.5.

[123] *See* CR/PR at VI-8 n.5.

[124] CR/PR at I-8. Honeywell reported that ***. CR/PR at V-1.

[125] CR/PR at I-8. HFC blends, containing R-125, produced in China entering under HTS subheading 3824.78.20 are currently subject to an additional 25 percent *ad valorem* duty under Section 301. CR/PR at I-8. An initial tariff of 10 percent *ad valorem* became effective on September 24, 2018, which was increased to 25 percent *ad valorem* on May 10, 2019. Four exclusions exist for this additional duty. *See id.* at I-8 to I-9, n.31.

As noted above, an antidumping duty order was entered in August 2016 against certain HFC blends, the primary downstream product for R-125. *See Hydrofluorocarbon Blends from the People's*

C. Volume of Subject Imports[126]

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."[127]

The volume of subject imports fluctuated from 2017 to 2019, increasing from *** short tons in 2017 to *** short tons in 2018, before decreasing to *** short tons in 2019, for an overall increase of *** percent from 2017 to 2019.[128] During this same period, subject imports' share of the U.S. market steadily increased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019, for an overall increase of *** percentage points.[129]

Republic of China, 81 Fed. Reg. 55436 (Aug. 19, 2016). Petitioner argues that this order affected market conditions during the POI as domestic firms shifted to producing HFC blends that would otherwise be subject to the antidumping duty order on HFC blends if imported. As a result of this shift, Petitioner claims that demand for R-125 increased. *See* Petitioner's Preconference Brief at 7; *see also* CR/PR at II-12.

[126] Because the subject product is entered under basket HTS categories that include out-of-scope articles, the Commission used importer questionnaire responses to measure import volume. *See* CR/PR at VI-1 & n.2.

[127] 19 U.S.C. § 1677(7)(C)(i).

[128] CR/PR at Tables IV-2, C-1. The volume of subject imports was *** percent lower in interim 2020, at *** short tons, than in interim 2019, at *** short tons. *Id.*

U.S. importers' U.S. shipments of subject imports (which include internal consumption and transfers to related firms) exhibited a different trend than subject import volume and increased each year of the POI, from *** short tons in 2017 to *** short tons in 2018 and *** short tons in 2019, for an overall increase of *** percent. They were *** percent lower in interim 2020, at *** short tons, than in interim 2019, at *** short tons. *Id.* The difference between subject import volume and U.S. importers' U.S. shipments of subject imports is at least in part due to the large volume of subject imports placed into U.S. inventory by U.S. importers in 2018. *See* CR/PR at VII-2.

[129] CR/PR at Tables IV-5, C-1. Subject imports' share of the U.S. market was *** percentage points lower in interim 2020, at *** percent, than in interim 2019, at *** percent. *Id*. However, subject imports' share of the U.S. market in interim 2020 was higher than their share in 2017, at the beginning of the POI, and comparable to their share in 2018. *Id.*

The volume of subject imports as a percentage of U.S. production fluctuated from 2017 to 2019. It increased from *** percent in 2017 to *** percent in 2018, before decreasing to *** percent in 2019. It was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent. *Id.*

In light of the foregoing, for the purposes of the preliminary phase of these investigations, we find that the volume of subject imports is significant in absolute terms and relative to consumption in the United States, and that the increase in volume is significant, relative to consumption in the United States.

D. Price Effects of the Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (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.[130]

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

We have examined several sources of data in our underselling analysis, including price data, import purchase cost data, data derived from lost sales/lost revenue survey responses, and other data on the record. The Commission collected quarterly price data for the total quantity and f.o.b. value of one R-125 product shipped by the U.S. producer and importers to unrelated customers between January 2017 and September 2020.[131] Honeywell and five importers provided usable pricing data for the requested product, although not all firms

[130] 19 U.S.C. § 1677(7)(C)(ii).

[131] The pricing product was **Product 1.** – Pentafluoroethane, more commonly referred to as R-125, with a chemical composition of CF_3CHF_2, sold in bulk. CR/PR at V-4.

reported price data for all quarters.[132] Price data reported by these firms accounted for approximately *** percent of the U.S. producer's commercial U.S. shipments of R-125 and 2.0 percent of subject imports in 2019.[133] The limited price comparison data showed subject imports underselling the domestic like product in *** (or *** percent) of quarterly comparisons at an average underselling margin of *** percent.[134] The total quantity of subject imports in quarters with underselling was *** short tons, with margins of underselling ranging from *** to *** percent.[135] The total quantity of subject imports in quarters with overselling was *** short tons, with margins of overselling ranging from *** to *** percent and averaging *** percent.[136]

The Commission also collected import purchase cost data for the same pricing product for firms that imported R-125 for use in the production of their own downstream products.[137] Ten firms that imported R-125 for internal consumption reported usable import purchase cost data.[138] Purchase cost data reported by these firms accounted for 81.6 percent of subject imports from China in 2019.[139] Landed duty-paid costs for subject imports were below the sales

[132] CR/PR at V-4.

[133] CR/PR at V-4.

[134] CR/PR at Table V-5. Petitioner alleges certain outliers in the quarterly price data reported by importers, specifically that per-unit values over $***/short ton are outliers. *See* Petitioner's Postconference Brief at 19-20. The Commission's staff followed up with the relevant importers and confirmed the accuracy of their reported pricing data. *See* CR/PR at V-5 n.20.

[135] CR/PR at Table V-5. We observe that the majority of the quantity of subject imports in quarters of underselling was in the first and second quarters of 2020. CR/PR at Table V-3. Further, all quarterly comparisons with underselling occurred after the third quarter of 2018. *Id.*

[136] CR/PR at Table V-5.

[137] CR/PR at V-4.

[138] CR/PR at V-4.

[139] CR/PR at V-4. We note that the three related importers that comprise *** – reported no imports or U.S. shipments in 2017 or 2018, nor did they report pricing or purchase cost data, stating only that they ***. U.S. Importer Questionnaire Responses of *** at II-5a, II-8, III-2, III-3. ***. *Id.* at III-22. Current limitations on the Commission's access to ***. In any final phase of these investigations, we intend to follow up with ***, as well as the ***, to ensure complete price and purchase cost datasets for

prices for U.S.-produced R-125 in *** (or *** percent) of quarterly comparisons involving *** short tons, with price-cost differences ranging from *** percent to *** percent, compared to *** short tons of subject imports in quarters with higher costs than U.S. sales prices, with reported price-cost differences ranging from *** percent to *** percent.[140] The average price-cost differential between the import purchase costs and prices for the domestic like product was *** percent when import purchase cost data was lower than the U.S. price and *** percent when import purchase cost data was higher than the U.S. price.[141]

We recognize that the import purchase cost data may not reflect the total cost of importing. Therefore, we requested that importers provide additional information regarding the costs and benefits of directly importing R-125. Four of 13 responding importers reported that they incurred additional costs beyond landed duty-paid costs associated with importing R-125.[142] These costs ranged from *** percent compared to landed duty-paid value.[143] These additional costs were significantly less than the average price-cost differential of *** percent between landed duty-paid costs for the subject imports and prices for the domestic like product. We also observe that the subject import purchase costs were lower than domestic R-

imports and purchases by these entities. We also note that importer *** was responsible for *** percent of the quantity of imports in the fourth quarter of 2018, which is the quarter with the largest quantity of subject imports with landed duty-paid costs below the sales prices for U.S. produced R-125. CR/PR at Table V-3.

[140] CR/PR at Table V-6.

[141] CR/PR at Table V-6.

[142] CR/PR at V-8.

[143] CR/PR at V-8. In determining whether to directly import R-125, three of 14 responding importers reported that they compare costs of importing directly to the cost of purchasing from a U.S. producer, three importers compare costs to purchasing from a U.S. importer, and eight do not compare costs. CR/PR at V-8 to V-9.

125 prices in all quarters from the third quarter of 2018 through the end of the POI (third quarter of 2020).[144]

U.S. importers were also asked whether the cost of R-125 that they imported was lower than the price of purchasing R-125 from a U.S. producer or importer. One of eight responding importers reported that imports were priced lower when not including the additional costs, and one of eight responding importers reported that imports were priced lower when including additional costs.[145] One importer reported estimated savings of *** percent by importing directly rather than purchasing from a U.S. producer.[146]

We have also considered purchaser lost sales/lost revenue responses. Two of eight purchasers (***) that responded to the Commission's lost sales/lost revenue survey reported that, since 2017, they had purchased subject imports instead of the domestic like product.[147] *** purchasers reported that subject import prices were lower than the domestically produced

[144] We note that the quantity and price of U.S.-produced R-125 was higher in the second quarter of 2020 compared to the prior quarter and generally 2019, and that this quarter corresponds to Commerce's April 6, 2020 preliminary affirmative determination that HFC components from China were circumventing the antidumping duty order on HFC blends from China. *See* 85 Fed. Reg. 20248 (Apr. 10, 2020); 85 Fed. Reg. 51018, 51019 (Aug. 19, 2020); CR/PR at Table V-3. However, during the same quarter the subject import underselling margin and price-cost differential were at their highest levels of any quarter in the POI. CR/PR at Table V-3.

[145] CR/PR at V-9. Several importers reported turning to subject product because they could not obtain R-125 domestically from Honeywell. *See* CR/PR at V-9.

[146] CR/PR at V-9.

[147] CR/PR at V-14. These two purchasers reported purchasing a total of *** short tons of subject imports of R-125 during the POI. *Derived from* CR/PR at Table V-7.

product, and *** purchasers reported that price was the primary reason for purchasing subject imports.[148] [149]

The record with regard to underselling shows subject import sales prices and landed duty-paid costs lower than the sales prices for the domestic like product for the majority of quarterly comparisons and volume sold, with subject import price and cost consistently less than the price of the domestic like product since the second half of 2018.[150] For the purposes of the preliminary phase of these investigations, we find that the underselling by subject imports is significant, particularly in the latter portion of the POI. Furthermore, we cannot conclude that the significant underselling by subject imports, particularly since the second half of 2018, did not cause the domestic industry to lose sales and market share to subject imports. Specifically, the domestic industry lost *** percentage points of market share, while subject imports gained *** percentage points, from 2017 to 2019.[151]

We have also considered price trends for the domestic like product and subject imports. The pricing data indicate that the domestic industry's prices fluctuated in 2017, increased to their highest level in 2018, declined in 2019, then increased but fluctuated in interim 2020,

[148] CR/PR at V-9, Table V-8. Purchasers identified availability and difficulties obtaining supply from the domestic producer as non-price reasons for purchasing subject imports instead of the domestic like product. *See* CR/PR at V-16.

[149] Honeywell identified lost sales during the POI with respect to ***. *See* CR/PR at V-17. *** provided information in response to the Commission's lost sales/lost revenue survey, but *** did not respond to requests to submit a response and *** reported in its reply ***. *** reported ***. CR/PR at V-14 n.33 & 35. We intend to follow up with these two purchasers in any final phase of these investigations in order to confirm whether they purchased subject imports instead of the domestic like product on the basis of price.

[150] There is one exception – the third quarter of 2019 – when *** short tons of subject imports oversold the domestic like product. CR/PR at Table V-3.

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

resulting in a *** percent increase over the POI.[152] The reported purchase costs of subject imports fluctuated but generally increased in 2017 and the first half of 2018, before steadily decreasing from the second quarter of 2018 to the end of the POI, ending up *** lower over the POI.[153] In any final phase of these investigations, we intend to further investigate what was driving these price trends, including the increased prevalence of undersold subject imports starting in mid-2018 and the price declines experienced by both domestic producers and importers in 2019, which occurred despite an increase in apparent U.S. consumption.

We have also examined whether subject imports prevented price increases which otherwise would have occurred to a significant degree. After declining from *** percent in 2017 to *** percent in 2018, the domestic industry's ratio of COGS to net sales grew by *** percentage points to *** percent in 2019.[154] From 2018 to 2019, the decrease in the domestic industry's unit net sales value of *** percent outpaced the decrease in its unit COGS of *** percent, suggesting the industry experienced price declines in excess of any cost savings.[155] As noted above, these price declines occurred while apparent U.S. consumption increased, but subject imports also increased their share of the U.S. market.[156] While the ratio of COGS to net sales was substantially higher (by *** percentage points) in interim 2020 than in interim 2019,

[152] CR/PR at Fig. V-3, Table V-4.

[153] CR/PR at Fig. V-4, Table V-4. The average unit value ("AUVs") of U.S. importers' U.S. shipments of subject imports followed a similar trend, increasing from *** per short ton in 2017 to $*** per short ton in 2018 before decreasing to $*** per short to in 2019; it was lower in interim 2020, at $*** per short ton, than in interim 2019, at $*** per short ton. CR/PR at C-1. Several importers reported that the threats of Section 301 tariffs caused R-125 prices from Chinese manufacturers to decrease. CR/PR at V-10.

[154] CR/PR at Tables VI-1, C-1.

[155] CR/PR at Tables VI-1, C-1.

[156] CR/PR at Tables IV-5, C-1.

we recognize that both apparent U.S. consumption and subject imports' market share were lower.[157]

In light of the foregoing, for the purposes of the preliminary phase of these investigations, we cannot conclude that subject imports have not had significant effects on prices for the domestic like product, particularly since the second half of 2018. In any final phase investigations, we will further examine the price effects of subject imports, as well as other factors that may have affected prices.

E. Impact of the Subject Imports[158]

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."[159]

The domestic industry's output-related indicia generally fluctuated between years and, although they were higher in 2019 than in 2017, those increases lagged the greater increases in

[157] *See* CR/PR at Tables IV-5, VI-1, C-1.

[158] In its notice initiating the antidumping duty investigation on R-125 from China, Commerce estimated dumping margins ranging from 149.09 to 238.83 percent. *Pentafluoroethane (R-125) from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 86 Fed. Reg. 8583, 8586 (Feb. 8, 2021).

[159] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act ("TPEA") of 2015, Pub. L. 114-27.

apparent U.S. consumption. The domestic industry's capacity remained steady during the period at *** short tons.[160] Its production increased by *** percent from 2017 to 2019, declining from *** short tons in 2017 to *** short tons in 2018, then increasing to *** short tons in 2019.[161] Its capacity utilization increased *** percentage points overall from 2017 to 2019, decreasing from *** percent in 2017 to *** percent in 2018, then increasing to *** percent in 2019.[162]

The domestic industry's U.S. shipments (including internal consumption and swaps) fluctuated between years, but increased overall by *** percent between 2017 and 2019, decreasing from *** short tons in 2017 to *** short tons in 2018, then increasing to *** short tons in 2019.[163] The industry's end-of-period inventories rose overall by *** percent from 2017 to 2019, increasing from *** short tons in 2017 to *** short tons in 2018 and *** short tons in 2019.[164] The domestic industry's share of apparent U.S. consumption declined by *** percentage points from 2017 to 2019, falling from *** percent in 2017 to *** percent in 2018 and *** percent in 2019.[165]

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[160] CR/PR at Table III-3. The domestic industry's production capacity was *** short tons in interim 2019 and interim 2020. *Id*.

[161] CR/PR at Tables III-3, C-1. The domestic industry's production was *** short tons in interim 2019 and *** short tons in interim 2020. *Id.*

[162] CR/PR at Tables III-3, C-1. The industry's capacity utilization was *** percent in interim 2019 and *** percent in interim 2020. *Id*.

[163] CR/PR at Tables III-4, C-1. The industry's U.S. shipments were *** short tons in interim 2019 and *** short tons in interim 2020. The domestic industry's U.S. commercial shipments fluctuated between years, but decreased overall by *** percent between 2017 and 2019, increasing from *** short tons in 2017 to *** short tons in 2018, then decreasing to *** short tons in 2019; they were *** short tons in interim 2019 and *** short tons in interim 2020. *Id*.

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

[165] CR/PR at Tables IV-5, C-1. The industry's share of apparent U.S. consumption in interim 2020 was higher, at *** percent, than in interim 2019, at *** percent. *Id*.

The domestic industry's employment-related performance indicia were mixed. Employment,[166] total hours worked,[167] and wages paid[168] decreased each year from 2017 to 2019, while hourly wages[169] and productivity[170] increased each year from 2017 to 2019.

With the exception of its net sales revenue, the domestic industry's financial performance improved from 2017 to 2018, before deteriorating from 2018 to 2019. The domestic industry's net sales revenues declined from $*** in 2017 to $*** in 2018, and increased to $*** in 2019, for an overall decline of *** percent.[171] The industry's gross profit increased from $*** in 2017 to $*** in 2018, then declined to $*** in 2019.[172] The industry's operating income and net income, which were reported the same, increased from $*** in 2017 to $*** in 2018, then declined to $*** in 2019.[173] Similarly, as a ratio to net sales, the domestic industry's operating income and net income margins increased from *** percent in 2017 to ***

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

[167] Total hours worked decreased by *** percent from 2017 to 2019, from *** hours in 2017 to *** hours in 2018 and *** hours in 2019; they were *** hours in interim 2019 and interim 2020. CR/PR at Tables III-7, C-1. Hours worked per PRW fluctuated but decreased overall by *** percent from 2017 to 2019, increasing from *** hours in 2017 to *** hours in 2018, then decreasing to *** hours in 2019; they were *** hours in interim 2019 and interim 2020. CR/PR at Table III-7.

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

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

[170] Productivity increased by *** percent from 2017 to 2019, from *** short tons per 1,000 hours in 2017 to *** short tons per 1,000 hours in 2018 and *** short tons per 1,000 hours in 2019; it was *** short tons per 1,000 hours in interim 2019 and *** short tons per 1,000 hours in interim 2020. CR/PR at Tables III-7, C-1.

[171] CR/PR at Table C-1. The domestic industry's net sales revenues were $*** in interim 2019 and lower, at $***, in interim 2020. *Id*.

[172] CR/PR at Tables VI-1, C-1. Gross profit was $*** in interim 2019 and *** in interim 2020. *Id*.

[173] CR/PR at Tables VI-1, C-1. The industry's operating income and net income were $*** in interim 2019 and *** in interim 2020. *Id*.

percent in 2018, then declined to *** percent in 2019, for an overall increase of *** percentage points.[174] Capital expenditures increased from $*** in 2017 to $*** in 2018, then declined to $*** in 2019, for an overall increase of *** percent.[175] Net assets were *** in 2017 and 2018, then increased by *** percent in 2019.[176] Return on assets increased from *** percent in 2017 to *** percent in 2018, then declined to *** percent in 2019.[177] Honeywell reported actual negative effects on investment and growth and development.[178]

As apparent U.S. consumption increased over the full years of the POI, the volume of subject imports relative to U.S. consumption increased significantly, and subject imports undersold domestic prices to a significant degree in the later portion of the POI. The *** percentage point increase in subject imports' market share from 2017 to 2019 came almost entirely at the expense of the domestic industry.[179] As a result, we cannot conclude that the significantly increasing U.S. shipments of lower priced subject imports, particularly since the second half of 2018, did not prevent the domestic industry from increasing production and U.S. shipments by more than it did in an increasing U.S. market, and did not contribute to the deterioration of the domestic industry's financial performance from 2018 to 2019.[180]

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[174] CR/PR at Tables VI-1, C-1. As a ratio to net sales, the industry's operating income and net income margins were *** percent in interim 2019 and *** percent in interim 2020. *Id*.

[175] CR/PR at Tables VI-7, C-1. Capital expenditures were $*** in interim 2019 and $*** in interim 2020. *Id*.

[176] CR/PR at Table VI-7. Net assets were $*** in 2017 and 2018, and $*** in 2019. *Id.*

[177] CR/PR at Table VI-7.

[178] CR/PR at Table VI-9.

[179] *See* CR/PR at IV-5, C-1. The domestic industry's market share decreased by *** percentage points, while nonsubject imports' market share decreased by *** percentage points from 2017 to 2019. *Id.*

[180] Petitioner contends that there was a temporary decline in R-125 imports between April and August 2020, due to Commerce's April 10, 2020 preliminary anticircumvention determination with respect to HFC components, including R-125. It contends that, after Commerce's final determination

We note, however, that multiple importers/purchasers of R-125 reported that Honeywell, the sole domestic producer of R-125, was unable to meet their supply requirements or demand in the U.S. market.[181] Indeed, Honeywell's reported average production capacity quantity of *** short tons in 2019 was about *** percent of apparent U.S. consumption that year,[182] which raises questions regarding the degree to which Honeywell could have supplied the increases in consumption during the POI.[183] In any final phase of these investigations, we intend to investigate these issues further, including Honeywell's ability to increase its capacity and production, as well as the availability of domestic supply of R-125 for Honeywell's downstream competitors.

We also have considered the role of other factors so as not to attribute injury from other factors to the subject imports. Nonsubject imports maintained a very small presence in the U.S. market throughout the POI.[184] Thus, the presence of limited quantities of nonsubject

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not to include R-125 in the scope of the *Blends* Order, imports of R-125 surged from September through November 2020. *See* Petitioner's Postconference Brief at 8. We recognize that the domestic industry's U.S. shipments and market shares were higher in interim 2020 than in interim 2019, as U.S. shipments of subject imports and subject imports' market shares were lower. *See id.* On the other hand, the financial performance of the domestic industry was *** lower in interim 2020 than in interim 2019. *See* CR/PR at VI-1. In any final phase of these investigations, we intend to further investigate recent market conditions for R-125, including the effect of factors such as Commerce's anticircumvention investigation and the COVID-19 pandemic. To that end, we intend to seek monthly data for the volume of subject imports and the quantity and value of U.S. shipments (for both domestic product and imports) for 2019 and 2020.

[181] *See, e.g.,* CR/PR at V-9. Furthermore, *** of importers/purchasers reported that Honeywell ***. CR/PR at II-6 to II-7.

[182] *See* CR/PR at Tables III-3, IV-5.

[183] We also acknowledge that Honeywell reported ***. CR/PR at II-7.

[184] CR/PR at Table C-1. Nonsubject imports' share of apparent U.S. consumption was *** percent in 2017, *** percent in 2018, *** percent to 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at Table IV-5.

imports cannot explain the domestic industry's injury during the POI that may be attributable to subject imports from China.

We therefore cannot conclude, for purposes of the preliminary phase of these investigations, that subject imports did not have a significant impact on the domestic industry.

VI. 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 pentafluoroethane (R-125) from China that are allegedly sold in the United States at less than fair value and subsidized by the government of China.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Honeywell International, Inc. ("Honeywell"), Charlotte, North Carolina, on January 12, 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 R-125 (Pentafluoroethane) ("R-125")[1] from China. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
January 12, 2021	Petitions filed with Commerce and the Commission; institution of Commission investigations (86 FR 5247, January 19, 2021)
February 1, 2021	Commerce's notice of initiation of the antidumping duty investigation (86 FR 8583, February 8, 2021) and countervailing duty investigation (86 FR 8589, February 8, 2021)
February 2, 2021	Commission's conference
February 25, 2021	Commission's vote
February 26, 2021	Commission's determinations
March 5, 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*

[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.

merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

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

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

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

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the 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

R-125 generally is used to produce downstream blends such as R-410A, R-404A, R-407C, and R-507A. Honeywell is the sole producer of R-125 in the United States,[6] while leading producers of R-125 in China include ***. The leading U.S. importers of R-125 from China include ***. U.S. purchasers of R-125 are firms that incorporate R-125 into hydrofluorocarbon ("HFC") blends for refrigeration applications, including air conditioners; leading purchasers include ***.

Apparent U.S. consumption of R-125 totaled approximately *** short tons ($***) in 2019. The sole U.S. producer's U.S. shipments of R-125 totaled *** short tons ($***) 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 *** short tons ($***) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources, namely India, totaled *** short tons ($***) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of one firm that accounted for all known U.S. production of R-125 during 2019. U.S. imports are based on questionnaire data of 15 firms that accounted for approximately *** percent of U.S. imports from China in 2019 under HTS subheading 2903.39.20.[7] The Commission did not receive any questionnaire responses from foreign producers of R-125.

[6] Petition, p. 1.

[7] See Part IV for an explanation on the calculation of data coverage.

Previous and related investigations

As a result of a petition filed on June 25, 2015, on behalf of the American HFC Coalition, and its members,[8] the Commission conducted an antidumping investigation concerning HFC blends and components from China.[9] Included in the components subject to investigation was R-125.[10] On July 22, 2016, the Commission determined that an industry in the United States was materially injured by imports of HFC blends from China, but determined that an industry in the United States producing HFC components, including R-125, was neither materially injured nor threatened with material injury.[11] Commerce published the antidumping duty order on HFC blends from China ("Blends Order") on August 19, 2016.[12]

On June 18, 2019, Commerce initiated four anti-circumvention inquiries of the antidumping duty order on HFC blends from China to address: (1) whether imports of HFC components R-32, R-125, and R-143a from China that are further processed into HFC blends in the United States were circumventing the antidumping duty order on HFC blends from China; (2) whether certain HFC blends containing HFC components from India and China were circumventing the antidumping duty order on HFC blends from China; (3) whether imports of unfinished blends of HFC components R-32 and R-125 from China that are further processed into finished HFC blends in the United States are circumventing the antidumping duty order on HFC blends from China, and; (4) whether imports of non-patented R-421A (a blend of HFC components R-125 and R-134a) from China that are further processed into finished HFC blends in the United States are circumventing the antidumping duty order on HFC blends from China.[13] On March 18, 2020, Commerce determined that imports of unfinished blends of HFC components R-32 and R-125 from China that are further processed into finished HFC blends in the United States were circumventing the antidumping duty order on HFC blends from China.[14] On June 4, 2020, Commerce determined that imports of unpatented R-421A from China were

[8] Members included Amtrol, Inc., West Warwick, Rhode Island; Arkema, Inc., King of Prussia, Pennsylvania; The Chemours Company FC, LLC, Wilmington, Delaware; Honeywell International, Inc., Morristown, New Jersey; Hudson Technologies, Pearl River, NY; Mexichem Fluor, Inc., St. Gabriel, Louisiana; and Worthington Industries, Inc., Columbus, Ohio.

[9] Hydrofluorocarbon Blends and Components from China, Investigation No. 731-TA-1279 (Final), USITC Publication 4629, August 2016 ("HFC Publication") at p. I-1.

[10] HFC Publication at pp. I-7 and I-8. See also 81 FR 42314, June 29, 2016.

[11] HFC Publication at p. 1.

[12] 81 FR 55436, August 19, 2016. The antidumping duty margins ranged from 101.82 percent to 216.37 percent. HFC Publication at I-6.

[13] 84 FR 28273, 84 FR 28276, 84 FR 28269, and 84 FR 28281, June 18, 2019.

[14] 85 FR 15428, March 18, 2020.

circumventing the antidumping duty order on HFC blends from China.[15] On August 19, 2020, following notification from the Commission that an affirmative final determination would raise a significant injury issue, Commerce issued its final determination not to include R-32, R-125, and R-143a from China that are further processed in the United States to produce subject HFC blends within the scope of the HFC order.[16] [17] On October 1, 2020, Commerce determined that imports of certain HFC blends containing HFC components from India and China were circumventing the antidumping duty order on HFC blends from China.[18]

As a result of a petition filed on March 3, 2016 by the American HFC Coalition and its members,[19] the Commission conducted an antidumping investigation concerning imports of 1,1,1,2-tetrafluoroethane (R-134a) ("R-134a"), a single HFC component refrigerant typically used in automotive and commercial air conditioning systems among other applications, from China.[20] On April 18, 2016, the Commission determined that an industry in the United States was materially injured by imports of R-134a from China.[21]

As a result of a petition filed on January 23, 2020, on behalf of Arkema Inc., King of Prussia, Pennsylvania, the Commission conducted an antidumping investigation concerning imports of R-32, an HFC component commonly blended with R-125 to produce refrigerant blend R-410A, from China.[22] The Commission is scheduled to publish its determination with respect to this proceeding on March 2, 2020.

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[15] 85 FR 34416, June 4, 2020.

[16] As a result of its preliminary determination, Commerce directed U.S. Customs and Border Protection ("Customs") to suspend liquidation and to require a cash deposit of estimated duties at the rate applicable for an exporter of the subject imports from China, on all unliquidated entries of HFC components from China that were entered, or withdrawn from warehouse, for consumption on or after June 18, 2019, the date of initiation of Commerce's anticircumvention inquiry. 85 FR 20248, April 10, 2020. Given its negative circumvention finding that HFC components (including R-125) were not within the scope of the antidumping duty order on HFC blends, Commerce directed Customs to refund any cash deposits made for these entries and to discontinue the suspension of liquidation of HFC components. 85 FR 51018, August 19, 2020.

[17] 85 FR 51018, August 19, 2020.

[18] 85 FR 61930, October 1, 2020.

[19] Members included Amtrol, Inc., West Warwick, Rhode Island; Arkema, Inc., King of Prussia, Pennsylvania; The Chemours Company FC, LLC, Wilmington, Delaware; Honeywell International, Inc., Morristown, New Jersey; Hudson Technologies, Pearl River, NY; Mexichem Fluor, Inc., St. Gabriel, Louisiana; and Worthington Industries, Inc., Columbus, Ohio.

[20] 1,1,1,2-Tetrafluoroethane from China, Investigation No. 731-TA-1313 (Final), USITC Publication 4679, April 2016 ("R-134a Publication") at p. 1.

[21] 81 FR 23750, April 22, 2016.

[22] 85 FR 5239, January 29, 2020.

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On February 8, 2021, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on R-125 from China.[23] Commerce identified the following government programs in China:[24]

- Policy Loans to the Chemicals Industry
- Export Loans from Chinese State-Owned Banks (Government Directed Lending)
- Provision of Land Use Rights for Less Than Adequate Remuneration ("LTAR")
- Provision of Electricity for LTAR
- Currency Undervaluation

Alleged sales at LTFV

On February 8, 2021, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigation on R-125 from China.[25] Commerce has initiated an antidumping duty investigation based on estimated dumping margins ranging from 149.09 percent to 238.83 percent for R-125 from China.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[26]

> *The merchandise covered by this investigation is pentafluoroethane (R-125), or its chemical equivalent, regardless of form, type or purity level. R-125 has the Chemical Abstracts Service (CAS) registry number of 354-33-6 and the chemical formula C_2 HF_5. R-125 is also referred to as Pentafluoroethane, Genetron HFC 125, Khladon 125, Suva 125, Freon 125, and Fc-125. Subject merchandise includes R-125, whether or not incorporated into a blend. When R-125 is blended with other products, only the R-125 component of the mixture is covered by the scope of this investigation. Subject merchandise also includes R-125 and unpurified R-125 that is processed in a third country or otherwise outside the customs*

[23] 86 FR 8589, February 8, 2021.

[24] Pentafluoroethane (R-125) from the People's Republic of China, Countervailing Duty Investigation Initiation Checklist, February 1, 2021, pp. 7-13.

[25] 86 FR 8583, February 8, 2021.

[26] 86 FR 8583 and 86 FR 8589, February 8, 2021.

territory of the United States, including, but not limited to, purifying, blending, or any other processing that would not otherwise remove the merchandise from the scope of this investigation if performed in the country of manufacture of the in-scope R-125. The scope also includes R-125 that is commingled with R-125 from sources not subject to this investigation. Only the subject component of such commingled products is covered by the scope of this investigation.

Excluded from the current scope is merchandise covered by the scope of the antidumping order on Hydrofluorocarbon Blends from the People's Republic of China. See Hydrofluorocarbon Blends from the People's Republic of China: Antidumping Duty Order, 81 FR 55436 (August 19, 2016) (the Blends Order).

Tariff treatment

The merchandise subject to these investigations is currently imported under statistical reporting number 2903.39.2035 of the Harmonized Tariff Schedule of the United States ("HTS").[27] Other merchandise within the scope of these investigations, including HFC blends that are outside the scope of the Blends Order, may be imported under statistical reporting numbers 2903.39.2045 and 3824.78.0020. The 2021 general rate of duty is 3.7 percent ad valorem for both HTS subheadings 2903.39.20 and 3824.78.00.[28]

An additional 15 percent ad valorem duty on imports of R-125 produced in China was scheduled to go into effect on December 15, 2019, under Section 301 of the Trade Act of 1974; however, negotiations led to a suspension of the implementation of these additional duties. There are currently no Section 301 duties in effect for subheading 2903.39.20.[29] Hydrofluorocarbon refrigerant blends[30] produced in China entering under subheading 3824.78.20 are subject to an additional 25 percent ad valorem duty under Section 301.[31]

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[27] Statistical reporting number 2903.39.2035 also covers two other products that are outside the scope of these investigations: difluoromethane (R-32) and 1,1,1-trifluoroethane (R-143a). These are individual HFCs, not blends.

[28] Harmonized Tariff Schedule of the United States (2021), Preliminary Revision 3, Chapters 29 and 38.

[29] Harmonized Tariff Schedule of the United States (2021), Preliminary Revision 3, Chapter 99, Subchapter III, U.S. Notes 20(t) and 20(u). Duties under 9903.88.16 were suspended pursuant to the Federal Register Notice of December 18, 2019 (84 FR 69447), "Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation."

[30] For the purposes of statistical reporting number 3824.78.0020, the term "hydrofluorocarbon refrigerant blends" consists of hydrofluorocarbon mixtures containing at least pentafluoroethane (R125) or difluoromethane (R32) or 1,1,1-trifluoroethane (R143a), mixed, with or without other ingredients. Harmonized Tariff Schedule of the United States (2021), Preliminary Revision 3, Chapter 38, Statistical Note 2.

[31] A Section 301 tariff of 10 percent ad valorem became effective on September 24, 2018. 83 FR 47974, "Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation," September 21, 2018. The Section 301 tariff was increased to 25 percent ad valorem effective May 10, 2019. 84 FR 20459, "Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation," May 9, 2019. Harmonized Tariff Schedule of the United States (2021), Preliminary Revision 3, Chapter 99, Subchapter III, U.S. Notes 20(e) and 20(f). Exclusions to the additional duty are the following: 1) Mixtures of hydrofluorocarbons, containing 40 to 44 percent by weight of 1,1,1,2-tetrafluoroethane (CAS No. 811-97-2), 56 to 60 percent by weight of pentafluoroethane (CAS No. 354-33-6) and up to 2 percent by weight of lubricating oil (described in statistical reporting number 3824.78.0020) (subchapter III, footnote 20(xx)(12)); 2) Refrigerant gas R-421B, comprising mixtures containing at least 83 percent but not more than 87 percent by weight of

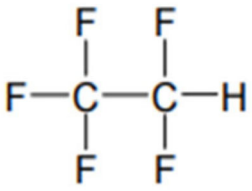
(continued...)

The product

Description and applications

These petitions cover pentafluoroethane, more commonly referred to as R-125.[32] R-125 is a hydrofluorocarbon ("HFC"), a class of man-made chemicals that contain fluorine, carbon, and hydrogen atoms. The chemical formula for R-125 is C_2HF_5 (also written as CF_3CHF_2).[33] It is typically sold in bulk.[34]

Pentafluoroethane



R-125 is a colorless, odorless gas that is used primarily as a component in HFC blends, which are used in refrigerant applications.[35] R-125 is also used as a fire extinguishing agent.[36] R-125 is classified as an A-1 refrigerant: non-flammable and non-toxic.[37] It does not deplete the ozone. [38] R-125 is either internally consumed to produce HFC blends or sold to third-party

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pentafluoroethane, at least 13 percent but not more than 17 percent by weight of 1,1,2,2-tetrafluoroethane, and at least 0.5 percent but not more than 2 percent by weight of lubricant (described in statistical reporting number 3824.78.0020) (subchapter III, footnote 20(aaa)(32), p. 99-III-172); 3) Mixtures of hydrofluorocarbons, containing 40 to 44 percent by weight of 1,1,1,2-tetrafluoroethane (CAS No. 811-97-2), 56 to 60 percent by weight of pentafluoroethane (CAS No. 354-33-6) and up to 2 percent by weight of lubricating oil (described in statistical reporting number 3824.78.0020) (subchapter III, footnote 20(iii)(55)); 4) Refrigerant gas R-421B, comprising mixtures containing at least 83 percent but not more than 87 percent by weight of pentafluoroethane, at least 13 percent but not more than 17 percent by weight of 1,1,2,2-tetrafluoroethane, and at least 0.5 percent but not more than 2 percent by weight of lubricant (described in statistical reporting number 3824.78.0020) (subchapter III, footnote 20(iii)(56)).

[32] Petition, p. 6.

[33] Petition, pp. 7-8.

[34] Petition, p. 6.

[35] R-125 is also referred to as Genetron HFC 125, Khladon 125, Suva 125, Freon 125, and Fc-125. Petition, p. 6.

[36] Petition, p. 12.

[37] Conference transcript, p. 13 (LaPietra).

[38] Petition, p. 6.

blenders as a component used to produce HFC blends, which are refrigerants for various applications. [39]

R-125 is the most common component used in refrigerant blends, primarily because it is nonflammable.[40] It has satisfactory heat transfer properties, but it does not have sufficient heat transfer capacity or other thermal properties for it to be used as a standalone refrigerant.[41] Five of the most commonly used refrigerant blends, all of which contain R-125, are included in the Blends Order.[42] Those five blends account for approximately *** percent of the U.S. refrigerant blend market.[43] Most of the blends that constitute the rest of the U.S. refrigerant blends market also contain R-125. Many of the most common next-generation blends also contain R-125.[44]HFCs were developed to replace both chlorofluorocarbons ("CFCs") and hydrochlorofluorocarbons ("HCFCs") as components in refrigerant blends in residential and commercial applications.[45] CFCs and HCFCs, which cause ozone depletion, have been phased out of production pursuant to the Montreal Protocol.[46] After the refrigerant threat to the ozone layer was addressed, HFCs were determined to be greenhouse gases ("GHGs") that contribute to global warming. In an effort to curb global warming, countries, including the United States, committed under the Kigali Amendment in 2016 to reduce by more than 80 percent their production and use of HFCs over the next 30 years.[47] R-125, with a global warming potential ("GWP") 3,170 times that of carbon dioxide,[48] is among the GHGs targeted for phase-out/reduction under the Kigali Amendment. The next generation of refrigerant blends replace some HFCs in refrigerant blends with hydrofluoroolefins (HFOs), which have GWPs that are less than one.[49]

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[39] Petition, pp. 6-7.

[40] Conference transcript, pp. 13, 84 (LaPietra).

[41] Conference transcript, p. 83 (LaPietra).

[42] The blends covered under the Blends Order are R-404A, R-407A, R-407C, R-410A, and R-507A.

[43] Petitioner Post-conference brief, p. 31.

[44] ASHRAE Refrigerant designations, https://www.ashrae.org/technical-resources/standards-and-guidelines/ashrae-refrigerant-designations (accessed January 28,2021).

[45] Petition, p. 7.

[46] Petition, p. 7.

[47] Amendment to Address HFCs under the Montreal Protocol, U.S. Environmental Protection Agency (EPA), https://www.epa.gov/ozone-layer-protection/recent-international-developments-under-montreal-protocol (accessed January 25, 2021).

[48] Intergovernmental Panel on Climate Change (IPCC), IPCC's Fifth Assessment Report (AR5). https://www.ipcc.ch/report/ar5/wg3/ (accessed January 28, 2021). Carbon dioxide was set as the reference substance with a GWP of 1.

[49] Intergovernmental Panel on Climate Change (IPCC), IPCC's Fifth Assessment Report (AR5). https://www.ipcc.ch/report/ar5/wg3/ (accessed January 28, 2021).

On December 27, 2020, the President signed the American Innovation and Manufacturing (AIM) Act, which will result in reduced production and use of HFCs[50] in alignment with the Kigali Amendment to the Montreal Protocol.[51] Specifically, the sum of all regulated substances on the list of the AIM Act will decrease in production and consumption in phases from a baseline determined as the average of the levels in 2011, 2012 and 2013: 10 percent reduction by 2023, 40 percent by 2028, 70 percent by 2033, 80 percent by 2035, and 85 percent by 2036 and later.[52]

The AIM Act permits allowances and trading.[53] Each chemical substance on the list has a specific GWP value.[54] This value is a common measure that allows for comparison of the Earth warming effects of the different gases and for comparison of emissions reduction opportunities across sectors and gases.[55] In a trading and allowance system in which all the individual GWPs are added together and the lowering of total GWPs is the goal, those individual chemical substances with a lower GWP number may fare better in the market than those with a higher

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[50] Doniger, David and Alex Hillbrand, "HFC Phasedown Marks Top Climate Win of 116th Congress," NRDC, December 20, 2020 and updated December 27, 2020 https://www.nrdc.org/experts/david-doniger/hfc-phasedown-marks-top-climate-win-116th-congress; Garry, Michael, "U.S. enacts HFC Phase-down Law as Part of COVID Relief Bill," Hydrocarbon 21, January 4, 2021 https://hydrocarbons21.com/articles/9879/u_s_enacts_hfc_phase_down_law_as_part_of_covid_relief_bill; S. 2754, 116th Congress, §6(b)(3), available at https://www.congress.gov/bill/116th-congress/senate-bill/2754/text.

[51] United Nations Environment Economy Division, "The Kigali Amendment to the Montreal Protocol: HFC Phasedown," retrieved January 31, 2021, https://multimedia.3m.com/mws/media/1365924O/unep-fact-sheet-kigali-amendment-to-mp.pdf; S. 2754, 116th Congress, §6(b)(3), available at https://www.congress.gov/bill/116th-congress/senate-bill/2754/text.

[52] As the Act stipulates that *all* chemical substances on the regulated list will in total be decreased by 85 percent by 2036, the individual chemical substances themselves may have different percentages of decrease. Recycled product is excluded. S. 2754, 116th Congress, §6(b)(3), available at https://www.congress.gov/bill/116th-congress/senate-bill/2754/text.

[53] An allowance is a limited authorization for the production or consumption of a regulated substance under the Act and does not constitute a property right. S. 2754, 116th Congress, §6(b)(3), available at https://www.congress.gov/bill/116th-congress/senate-bill/2754/text; In one example of a trading program, a company may be permitted one ton of sulfur dioxide emissions into the air. It can trade that allowance amount in an allowance market for its benefit. Environmental Protection Agency, "How Do Emissions Trading Programs Work?" retrieved January 31, 2021, https://www.epa.gov/emissions-trading-resources/how-do-emissions-trading-programs-work.

[54] The GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The standard time period used is 100 years. GWP is a common unit of measure across gases can be added to get a national inventory. EPA, "Understanding Global Warming Potentials," (accessed January 31, 2021), https://www.epa.gov/ghgemissions/understanding-global-warming-potentials.

[55] In the AIM Act, the GWP over 100 years is called the exchange value.

GWP number.[56] However, the details of allowance and trading programs will be written by the Environmental Protection Agency (EPA) in the future.[57]

Manufacturing processes

R-125 is manufactured by the reaction of a chlorinated starting compound with hydrofluoric acid. This reaction, known as hydrofluorination, yields a carbon-hydrogen-fluorine compound, and hydrochloric acid.

Specifically, one method of producing R-125 involves the reaction of perchloroethylene (PCE) and hydrofluoric acid (HF). The result of the reaction is R-125 and gaseous wastes that are destroyed in a thermal oxidizer. The chemical formula summarizing the reaction is:

$$CCl_2{=}CCl_2 \; + \; 5HF \; \rightarrow \; CF_3CHF_2 \; + \; 4HCl$$

Individual refrigerant components, such as R-125, could technically be extracted from blends (such as a domestically produced or imported blend), whether before use or after reclamation from a refrigeration unit.[58] However, this process would not be an economically feasible means of acquiring standalone R-125.[59] Additionally, since R-125 has few uses as a standalone product,[60] separating it from a blend would be a costly exercise only to mix the R-125 again with other components into a refrigerant blend. It would be more economically viable to "balance" a new/reclaimed blend by adding components as necessary to bring it in line with Air-Conditioning, Heating and Refrigeration Institute ("AHRI") blend specifications.[61]

The production of blends is a much less capital-intensive operation and requires less expertise than producing R-125. A state-of-the-art facility to blend up to five different components can be built for approximately $4 million,[62] whereas a plant to manufacture R-125 costs more than $100 million.[63] A blending facility does not have the toxic acids and wastes that

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[56] The GWP range of all individual chemical substances listed in the Act is 53 to 14,800 GWP (100 years) (AIM Act terms it "exchange rate"). R-32 has a GWP, 100 Years value of 675 and is thus lower than some of the other chemical substances on the list. S. 2754, 116th Congress, §6(b)(3), available at https://www.congress.gov/bill/116th-congress/senate-bill/2754/text.

[57] S. 2754, 116th Congress, §6(b)(3), available at https://www.congress.gov/bill/116th-congress/senate-bill/2754/text.

[58] Conference transcript, pp. 89-90 (LaPietra).

[59] Conference transcript, p. 129 (Goldfeder).

[60] Conference transcript, pp. 83-84 (LaPietra) and pp. 128-129 (Goldfeder).

[61] Conference transcript, pp. 89-90 (LaPietra).

[62] Conference transcript, p. 85 (Wood).

[63] Conference transcript, p. 16 (LaPietra).

are part of a R-125 production plant and which require additional equipment, infrastructure, and expertise. The blending operation itself involves connecting tanks, whether storage tanks or the isocontainers generally used for transportation of refrigerants, and allowing the component to flow from that tank to a blending tank. The operator adds the components one at a time and then draws a sample of the blend to ensure that the components are at the prescribed ratio for the desired blend. If the component ratios are not within specification, the operator adds more of the underrepresented component until the proper specifications are reached.

Domestic like product issues

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

The petitioner states that R-125 constitutes a single domestic like product, co-extensive with the scope.[64] The petitioner argues that all R-125 sold in the domestic market is interchangeable, as the chemical composition is identical, and that there are no meaningful differences in the production process of domestically-produced R-125 and subject R-125.[65] With respect to blends containing R-125, the petitioner points out that the R-125 like product is limited to the R-125 component within the mixture, not the mixture itself.[66]

Respondent National argues that the Commission should find two separate like products: standalone R-125 as a component, and R-125 contained in covered blends (e.g., blends that are not covered by the existing antidumping duty order on HFC blends).[67] National argues that component R-125 have different physical characteristics: R-125 as a standalone component has poor refrigeration properties, and is predominantly sold to blenders for downstream manufacturing, while covered blends containing R-125 are recognized as distinct products in the refrigeration market. National further contends that R-125 as a standalone component is not interchangeable with R-125 contained in covered blends, and that R-125 as a standalone component and R-125 contained in covered blends have different channels of distribution.[68] National argues that the manufacturing facilities, production processes, and production employees, customer and producer perceptions, and price of standalone R-125 and R-125 contained in covered blends differ greatly.[69]

[64] Petitioner's post-conference brief, p. 29.

[65] Petitioner's post-conference brief, p. 30.

[66] Petitioner's post-conference brief, p. 32. See also conference transcript, pp. 54 and 58-59 (Cannistra).

[67] National's post-conference brief pp. 4-8, and conference transcript, pp. 109-117 (Goldfeder).

[68] Conference transcript, pp. 109-117 (Goldfeder).

[69] Conference transcript, pp. 109-117 (Goldfeder).

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

U.S. market characteristics

Pentafluoroethane ("R-125") is a non-ozone-depleting[1] hydrofluorocarbon ("HFC") gas used in HFC blends for residential and commercial refrigerant applications, such as air-conditioning.[2] [3] Newer generations of HFCs, such as R-125, were developed to replace the previous generation of hydrochlorofluorocarbon ("HCFC") refrigerants and HFCs that caused ozone depletion.[4]

Standards set by the Air Conditioning, Heating, and Refrigeration Institute ("AHRI") establish maximum levels of contaminants for R-125.[5] Chinese-produced and U.S.-produced product have the same chemical formula.[6] R-125 is not flammable and has a lower global warming potential than other HFC compounds.[7] Most R-125 is either internally consumed to produce HFC blends or sold to third-party blenders as a component to produce HFC blends,[8] including R-404A, R-407A, R-407C, R-407F, R-407H, R-410A, R-422B, R-422D, R-438A, R-448A, R-449A, R-453A, and R-507A.[9] [10] Modern air conditioning units use HFC blend R-410A, which is composed of 50 percent R-32 and 50 percent R-125.[11] R-125 comprises a varying share of other HFC blends.[12] R-125's primary end use in refrigeration applications is as a component for HFC blends; however, R-125 has other downstream applications, such as use as a fire-extinguishing

[1] Petition, p. 12.

[2] Petition, p. 6, and Petition exh. I-3, p. 18.

[3] R-125 is sold under various names including Genetron HFC 125, Khladon 125, Suva 125, Freon 125, and Fc-125. Petition, p. 6.

[4] Petition, p. 6.

[5] Petition, p. 7.

[6] All R-125 "sold in the domestic market is interchangeable regardless of location of manufacture because the chemical composition is identical." Petition, p. 11.

[7] Petition, p. 12. In contrast, R-32 is a flammable gas and has been designated by the Occupational Safety and Health Administration as a hazardous material. Petition, p. 12.

[8] Honeywell reported ***. Petition, p. 13.

[9] Petition exh. I-5, pp. 12-23.

[10] Other blends containing R-125 include R-402A, R-407B, R-407D, R-407E, R-407G, R-407I, R-408A, R-410B, R-417A, R-417B, R-419A, R-419B ,R-421A, R-421B, R-422A, R-422C, R-422E, R-424A, R-426A, R-427A, R-428A, R-437A, R-439A, R-442A, R-447A, R-447B, R-449B, R-449C, R0452A, R-452B, R-452C, R-460B, R-460C, R-461A, R-462A, R-463A, and R-464A. Petition exh. I-5, pp. 12-23.

[11] Petition exh. I-5, p. 14.

[12] Petition exh. I-5, pp. 12-23, and Petition exh. I-14, p. 1.

agent,[13] although the size of the market for R-125 as a fire suppressant is a "very, very small percentage of the end use of {…} R-125."[14] For example, importer *** reported that *** percent of its R-125 sales are to the fire-extinguishing market. R-125 is not used as a stand-alone refrigerant, due to performance-related issues when used on a stand-alone basis.[15] For example, importers *** reported that R-125 must be blended with other HFC components to achieve desired physical characteristics for end-use applications. R-125 can also be used in the fabrication of semiconducting materials,[16] such as integrated circuits used in electronics,[17] via semiconductor plasma etching.[18]

R-125 is typically sold in bulk[19] and is transported in cylinders or specialized tank containers ("STCs").[20] R-125 is also transported in bulk via ISO[21] tanks or via rail.[22] ISO tanks are usually leased and are returned to the manufacturer to be refilled.[23] Railcars are considered to be "more efficient from a pricing standpoint."[24]

There is one U.S. producer of R-125, Honeywell;[25] R-125 is also produced in China, [26] and nonsubject countries Russia[27] and India,[28] Most responding importers (10 of 15) internally

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[13] Petition, p. 13.

[14] Conference transcript, pp. 62-63 (LaPietra).

[15] Conference transcript, p. 73 (LaPietra). See also Arkema importers' questionnaire response at question V-1.

[16] Philip D. Rack, University of Tennessee and Purdue University, "Plasma Etching Outline," (accessed February 15, 2021), https://wiki.itap.purdue.edu/download/attachments/74680195/Plasma%20Etching%20Outline%20-%20P.D.%20Rack%20U%20of%20Tennessee%20PPT.pdf?version=1&modificationDate=1575403889000&api=v2.

[17] R. G. Poulsen, *Plasma Etching in Integrated Circuit Manufacture—A Review*, 14 JOURNAL OF VACUUM SCIENCE & TECHNOLOGY 266 (1977), (accessed February 15, 2021), https://avs.scitation.org/doi/10.1116/1.569137.

[18] National importers' questionnaire response at question V-1.

[19] Petition, p. 6.

[20] Petition exh. II-3b, p. 3.

[21] "ISO" stands for International Organization of Standardization.

[22] Conference transcript, p. 46 (LaPietra).

[23] Petition Volume II, p. 6.

[24] Conference transcript, p. 66 (Wood).

[25] Petition, p. 1. *** reported ***. ***.

[26] Petition, p. 9.

[27] *See generally* petition exh. II-3b.

[28] National importers' questionnaire response at question III-21.

consume R-125 for their own use or for domestic blending operations. Petitioners argued that the antidumping duty order on HFC blends, effective August 2016, [29] led to an increase in imports of R-125.[30]

Apparent U.S. consumption of R-125 increased by *** percent during 2017-19 and was *** percent lower in January-September 2020 than in January-September 2019.

Channels of distribution

*** sold mainly to *** while importers sold mainly to ***, as shown in table II-1.[31] [32] [33]

[29] The Commission found a separate like product for blends and components in its investigations of HFC Blends from China and found that the U.S. industry was not materially injured or threatened by injury by reason of HFC components from China. The Department of Commerce found dumping margins applicable to blends of 101.82 percent for the investigated producer/exporter combinations and dumping margins of 216.37 percent for the PRC-Wide entity. Hydrofluorocarbon Blends and Components from China, Investigation No. 731-TA-1279 (Final), USITC Publication 4629, August 2016 (the "HFC Publication") at pp. 3, 13, and 25. See also 81 FR 55436, August 19, 2016 (the "Blends Order").

[30] Petition, pp. 15-16.

[31] Importers *** were the only importers to report that none of their imports were internally consumed. *** shipped all their R-125 imports to blenders ***.

[32] ***.

[33] Honeywell ***. For more information on these topics, see the section titled Net Sales in part VI and the section titled U.S. Producer's U.S. Shipments and Exports in part III.

Table II-1
R-125: 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

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Share of U.S. shipments (percent)				
U.S. producers: to Distributors	***	***	***	***	***
to Blenders	***	***	***	***	***
to OEM and End users	***	***	***	***	***
U.S. importers: China to Distributors	***	***	***	***	***
to Blenders	***	***	***	***	***
to OEM and End users	***	***	***	***	***
U.S. importers: Nonsubject sources to Distributors	***	***	***	***	***
to Blenders	***	***	***	***	***
to OEM and End users	***	***	***	***	***
U.S. importers: All import sources: to Distributors	***	***	***	***	***
to Blenders	***	***	***	***	***
to OEM and End users	***	***	***	***	***

Note.-- Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.
Note.-- U.S. importers' sales to nonsubject sources during January to September 2020 were driven by the response of ***.

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

Geographic distribution

Honeywell reported selling R-125 to *** United States (table II-2). Importers reported selling to all regions in the United States. Honeywell had *** percent of its sales within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table II-2
R-125: Geographic market areas in the United States served by U.S. producers and U.S. importers

Region	U.S. producer	Subject U.S. importers
Northeast	***	4
Midwest	***	4
Southeast	***	8
Central Southwest	***	3
Mountains	***	2
Pacific Coast	***	4
Other	***	2
All regions (except Other)	***	2
Reporting firms	***	9

Note.-- "Other" consists of 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 R-125 from Honeywell. No foreign producer of R-125 produced in China submitted a response to the Commission's questionnaire.

Table II-3
R-125: U.S. and foreign industry factors that affect ability to increase shipments to the United States

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

Note.-- Honeywell accounted for ***. No Chinese producers responded to the Commission's questionnaire. 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, Honeywell has the ability to respond to changes in demand with moderate changes in the quantity of shipments of U.S.-produced R-125 to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the availability of unused capacity and inventories. Factors mitigating responsiveness of supply include no reported ability to shift production to or from alternate products.

From 2017-19, Honeywell's capacity was stable and production increased, leading to increased capacity utilization. Inventories increased from 2017-19,[34] and home market shipments comprised *** of Honeywell's shipments in 2018-19.

There are no reported barriers to exporting. Honeywell reported that other HFC components do not share common manufacturing facilities, and that the R-125 equipment at its Geismar, Louisiana, plant cannot be used to produce other components.[35]

Subject imports from China

No foreign producers responded to the Commission's questionnaire. Honeywell reported that China is the major global supplier of R-125 and "compris{es} the highest percent share of global capacity."[36]

Imports from nonsubject sources

Nonsubject imports fluctuated during 2017-19, accounting for *** percent of total U.S. import quantity in 2017, *** percent in 2018, and *** percent in 2019. The largest source of nonsubject imports during this period was India.[37]

Supply constraints

*** responding U.S. importers reported that there were no supply constraints.[38] However, elsewhere in the questionnaire responses and at the staff conference, firms reported supply constraints. For example, importer *** reported ***. ***, reported ***.

[34] Honeywell's end-of-period inventories were ***.
[35] Conference transcript, p. 71 (Wood).
[36] Petition, pp. 6, 28.
[37] No other countries were reported as nonsubject sources by importers and purchasers.
[38] An eleventh importer, ***, replied ***.

Honeywell reported ***.[39] Three importers *** reported supply chain and importation and shipment impacts due to the COVID-19 pandemic. Those importers reported *** as supply constraints due to COVID-19.[40] Producer Honeywell reported that COVID-19 ***. [41] Honeywell also reported ***.[42]

Although no importers explicitly reported refusing to, declining, or being unable to supply R-125, *** importers, ***, reported that plant and mining shutdowns in China in Q2 2017 created a shortage of raw materials for R-125, which resulted in price spikes in R-125 due to a shortage of supply. Those importers reported that prices eventually normalized but "continued to decline each time there was a threat of section 301 tariffs on R-125."[43]

U.S. demand

Based on available information, the overall demand for R-125 is likely to experience small changes in response to changes in price. The main contributing factors are the lack of substitute products and the moderate cost share of R-125 in its ultimate end-use products of refrigeration and air conditioning system blends.

End uses and cost share

U.S. demand for R-125 depends on the demand for U.S.-produced downstream products, such as HFC blends, which in turn depends on the demand for refrigeration and air

[39] Conference transcript (LaPietra), p. 64.

[40] ***, which reported that ***, ***. *** U.S. importers' questionnaire, response to II-4. *** reported by *** is ***. *** U.S. importers' questionnaire, response to II-8.

[41] Conference transcript (LaPietra), p. 45.

[42] Conference transcript (Wood), p. 61.

[43] *** U.S. importers' questionnaire, response to II-8.

conditioning. Importers' reported end uses include various HFC refrigerant blends.[44] R-125 accounts for a varying share of the cost of the HFC blends in which it is used, but is generally a small-to-moderate share of the reported end-use in HFC blends.[45] Reported cost shares for HFC blends were as follows:

- R-410A (eight firms): 26-56 percent
- R-404A (eight firms): 24-44 percent
- R-407C (six firms): 13-22 percent
- R-407A (two firms): *** percent
- R-422B (one firm): *** percent
- R-453A (one firm): *** percent
- R-507 (one firm): *** percent
- Refrigerant blends, generally (one firm): *** percent[46]

Business cycles

Most importers reported that the market was not subject to business cycles or distinct conditions of competition, though 5 of 15 responding importers indicated that the market was subject to business cycles and 3 reported distinct conditions of competition. U.S. producer Honeywell indicated ***. Among the importers that reported R-125 was subject to business cycles, firms cited increased demand for downstream air conditioning refrigerants during spring and summer. Importer National reported that while demand for R-410A is higher in spring and summer, it does not have seasonal demand for R-125 because it "requires R-125 throughout the year to keep its manufacturing facility running."[47] Importer *** reported that U.S. demand for R-125 has increased following the antidumping duty order on HFC blends. Of the three importers that reported R-125 is subject to distinct conditions of competition, firms cited competition among Chinese manufactures and "apparent global over{}supply {versus} demand."

[44] Standalone R-125 is also used as a fire-extinguishing agent. Petition, p. 13. See also Conference transcript, p. 113 (Goldfelder).

[45] The petitioner reported that "R-125 is a very small cost share of its ultimate end-use application," which "is in air conditioning units." Conference transcript, p. 29 (Cannistra).

[46] One firm, ***, with an R-125 cost share of *** percent, while three firms, ***, and reported an R-125 cost share of *** percent.

[47] Conference transcript, p. 26.

Five importers also reported that the R-125 market had changed, *** reported that China is incentivized to generate HFCs due to China's production and consumption baselines being set in 2020-22 under the Kigali Amendment to the Montreal Protocol (***); *** reported that the HFC blends anticircumvention inquiry and lawsuits over Environmental Protection Agency regulations have changed the conditions of competition (***); and one reported that China is growing its capacity to produce pure R-125 (***).

Demand trends

Honeywell reported that it follows several indicators to track demand for R-125, including GDP, housing starts,[48] and the Dodge Momentum Index.[49] [50]

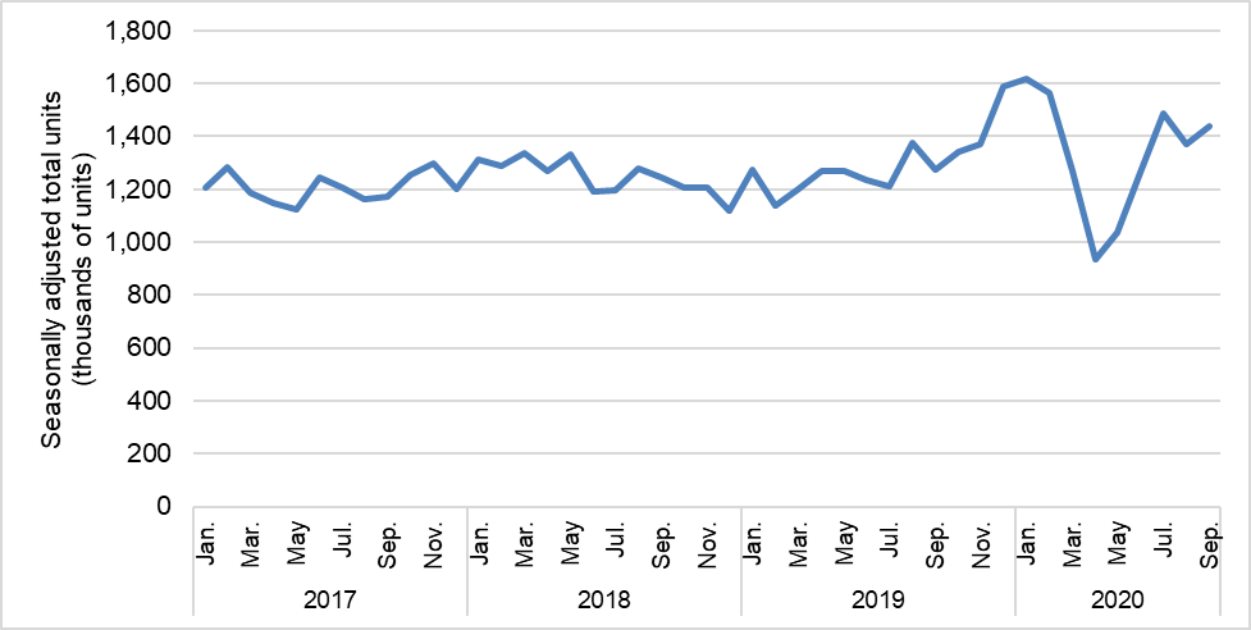
[48] "Housing starts" is a key economic indicator that measures new residential construction. U.S. Census Bureau, "New Residential Construction," retrieved February 4, 2021, https://www.census.gov/construction/nrc/index.html. See also New York University Stern School of Business, "Housing Starts/Building Permits," retrieved February 4, 2021, http://pages.stern.nyu.edu/~nroubini/bci/HousingStarts.htm.

[49] Conference transcript, p. 63 (LaPietra). The Dodge Momentum Index is a monthly measure "of the first (or initial) report for nonresidential building products in planning, which have been shown to lead construction spending for nonresidential buildings for a full year."

[50] See conference transcript, p. 89 (Cannistra) (explaining that increases in demand for air conditioners are "driven by GDP growth primarily"). See also petitioner's postconference brief, p. 6.

With regard to housing starts, seasonally adjusted new residential construction increased from 1,206,000 units in January 2017 to 1,587,000 units in December 2019. However, units dropped from 1,617,000 units in January 2020 to 934,000 units in April 2020. New residential construction increased in September 2020 to 1,437,000 units, but still represented an overall decrease of 11.1 percent from January 2020 to September 2020 (figure II-1).[51]

Figure II-1
Housing starts: Annual rate for housing units started, United States, January 2017-September 2020

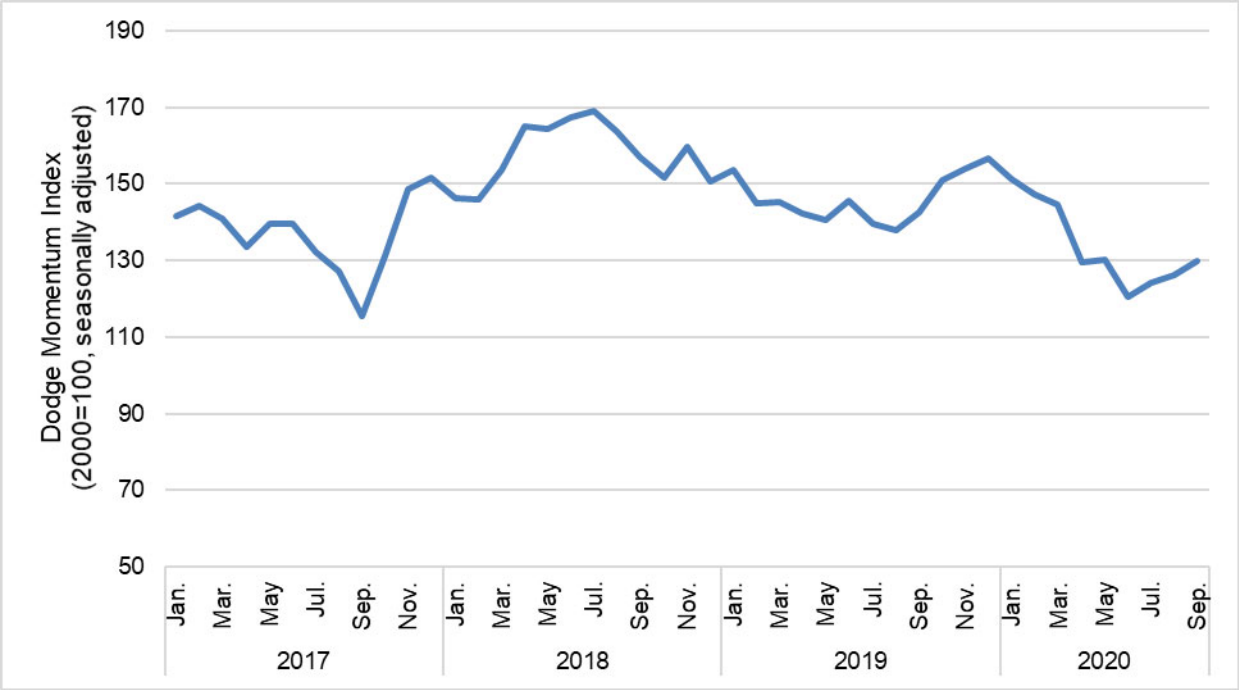


Source: U.S. Census Bureau. https://www.census.gov/econ/currentdata/dbsearch.

[51] See generally U.S. Census Bureau, "Time Series / Trend Charts," retrieved February 15, 2021, https://www.census.gov/econ/currentdata/dbsearch?program=RESCONST&startYear=2017&endYear=2021&categories=ASTARTS&dataType=TOTAL&geoLevel=US&adjusted=1&submit=GET+DATA&releaseScheduleId=, and U.S. Census Bureau, "Monthly New Residential Construction, Release Number CB21-11," retrieved February 15, 2021, https://www.census.gov/construction/nrc/pdf/newresconst.pdf.

The Dodge Momentum Index began to spike downward in mid-2017, but increased overall from January 2017 to December 2019. The Dodge Momentum Index decreased 14.2 percent from January 2020 to September 2020 (figure II-2).[52]

Figure II-2
Dodge Momentum Index, January 2017-September 2020



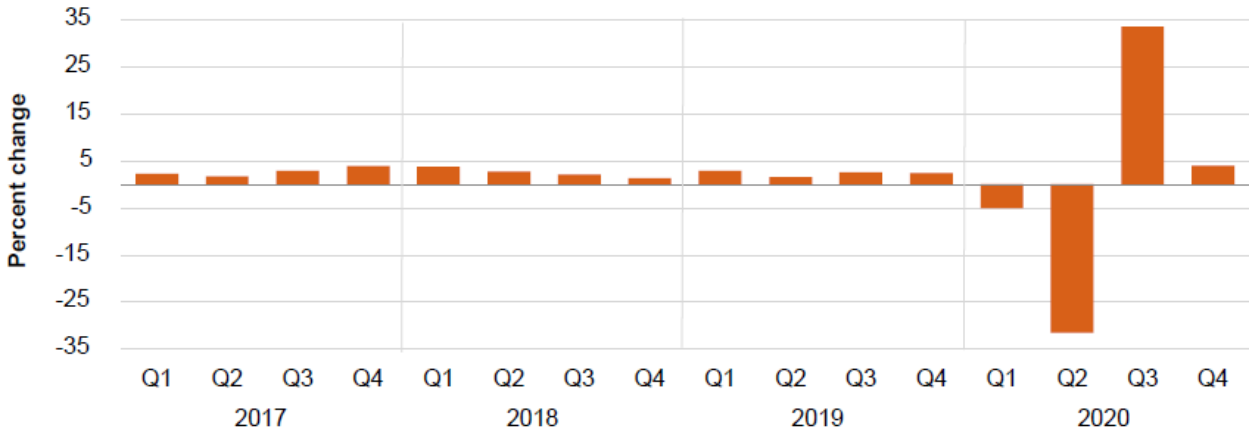
Source: Dodge Data & Analytics. https://www.construction.com/news.

[52] Cf. Dodge Data & Analytics "Dodge Momentum Index Ends 2020 on a High Note" retrieved February 15, 2021, https://www.construction.com/news/dodge-momentum-index-ends-2020-high-note, and Dodge Data & Analytics, "Dodge Momentum Index Starts 2020 on the Downside," retrieved February 15, 2021, https://www.construction.com/news/dodge-momentum-index-starts-2020-downside (analyzing the Dodge Momentum Index for January 2020), and Dodge Data & Analytics, "Dodge Momentum Index Increases in September" retrieved February 15, 2021, https://www.construction.com/news/dodge-momentum-index-increases-september-2020 (analyzing the Dodge Momentum Index for September 2020).

From January 2017 through December 2019, seasonally adjusted real GDP as a percent change from the preceding quarter was positive before decreasing during the first half of 2020 and recovering in the second half of 2020 (figure II-3).

Figure II-3

GDP: Real gross domestic product, percent change from preceding quarter, seasonally adjusted at annual rates, January 2017-December 2020 (advanced estimate)



Note.-- Data for the fourth quarter of 2020 is an advanced estimate.

Source: U.S. Bureau of Economic Analysis. https://www.bea.gov/data/gdp/gross-domestic-product.

*** 6 of 12 reporting importers reported no change in U.S. demand for R-125 since January 1, 2017 (table II-4). Six importers reported an increase in U.S. demand for R-125 since January 1, 2017.[53] Honeywell reported that the "2016 AD order on HFC blends {…} should have led to massive increases in domestic demand," but the domestic demand was met by Chinese producers, who "flood{ed} the U.S. market."[54] Importers *** reported that demand for R-125 increased as air conditioners become more energy efficient, as a result of the shift away from air conditioning systems that use R-22 to systems that use R-125.

[53] Three importers, ***, reported ***.

[54] Petition, pp. 15-16.

Table II-4
R-125: Firms' perceptions regarding demand in the United States and outside of the United States

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Demand inside the United States: U.S. producers	***	***	***	***
Importers	6	6	---	3
Demand outside the United States: U.S. producers	***	***	***	***
Importers	2	6	2	3

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

Substitute products

All 12 responding importers reported that there were no substitutes for R-125. ***. Honeywell reported that R-125 is not "interchangeable with other components of HFC blends because each compound has a distinct chemical composition and must be used in precise quantities to produce the particular HFC blends."[55] Honeywell reported that there are no substitutes for R-125 in the production of R-410A.[56] Chlorofluorocarbons ("CFCs") and HCFCs are not substitutes for R-125, as those ozone-depleting components are being phased out of production under the Montreal Protocol.[57]

Substitutability issues

The degree of substitution between domestic and imported R-125 depends upon such factors as relative prices, quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, reliability of supply, product services, etc.). Based on available data, staff believes that there is high degree of substitutability between domestically produced R-125 and R-125 imported from China.

Lead times

R-125 is primarily ***. Honeywell reported that *** of its commercial U.S. shipments ***. Most importers internally consume their R-125. Importers that commercially sell their imported R-125 reported that *** percent of their commercial U.S. shipments came from U.S. inventories

[55] Petition, p. 13.
[56] Petition, p. 13.
[57] Petition, p. 7.

and *** percent were produced-to-order.[58] Honeywell reported an average lead time of ***. Importer lead times ranged from *** days from U.S. inventories to *** days when produced-to-order.

Factors affecting purchasing decisions

Purchasers responding to lost sales and lost revenue allegations[59] were asked to identify the main purchasing factors their firm considered in its purchasing decisions for R-125.[60] [61] The major purchasing factors identified by firms included availability/supply (***) and quality (***). Other factors identified include lead times (***, range of product line (***), and payment terms and shipping terms (***). *** purchasers identified price ***, while ***. *** purchasers identified price ***.

Comparison of U.S.-produced and imported R-125

In order to determine whether U.S.-produced R-125 can generally be used in the same applications as imports from China, Honeywell and U.S. importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-5, petitioner Honeywell reported that U.S.- and Chinese-produced R-125 are *** interchangeable, while all importers reported that U.S.- and Chinese-produced R-125 are always interchangeable.

[58] *** importers reported that their commercial U.S. shipments came from foreign inventories.

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

[60] Purchasers *** were listed on Honeywell's lost sales lost revenue allegations. Purchasers *** were not listed on Honeywell's lost sales lost revenue allegations but submitted responses to the lost sales lost revenue survey. ***.

[61] Honeywell ***. For more information, see the section titled Net Sales in part VI.

Table II-5
R-125: 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. China	***	***	***	***	12	---	---	---
United States vs. Other	***	***	***	***	10	---	---	---
China vs. Other	***	***	***	***	10	---	---	---

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

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

In addition, the U.S. producer and importers were asked to assess how often differences other than price were significant in sales of R-125 from the U.S., China, or nonsubject countries. As seen in table II-6, Honeywell reported that factors other than price are *** important, and a majority of importers reported that non-price differences between U.S. and Chinese product are always important. Importers reported that the availability of Chinese R-125 and the reliability of vendors in China were key non-price factors. Importer *** reported several key non-price factors, including ***. Importer *** also reported that ***. Importer *** reported *** reported ***.[62]

Table II-6
R-125: Perceived importance of factors 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. China	***	***	***	***	7	---	1	2
United States vs. Other	***	***	***	***	1	---	1	2
China vs. Other	***	***	***	***	1	---	3	2

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

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

[62] *** to report that ***. *** reported that ***.

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 one firm that accounted for all known U.S. production of R-125 during 2019.

U.S. producers

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petition, and other industry sources. One firm, Honeywell, the only known producer of R-125 in the United States during 2017-19, provided usable data on their operations.[1]

Table III-1 lists Honeywell's production locations, position on the petition, and share of total production.

[1] ***.

Table III-1
R-125: U.S. producer Honeywell's position on the petition, production locations, and shares of reported production, 2019

Firm	Position on petition	Production location(s)	Share of production (percent)
Honeywell	Petitioner	Carville, LA	100.0
Total			100.0

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

Honeywell is ***. As discussed in greater detail below, ***.

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

Table III-2
R-125: U.S. producer Honeywell's reported changes in operations, since January 1, 2017

Item / Firm	Reported changes in operations
Expansions:	
***	***
Revised labor agreements:	
***	***

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

U.S. production, capacity, and capacity utilization

Table III-3 and figure III-1 present the sole U.S. producer Honeywell's production, capacity, and capacity utilization. While capacity remained steady during 2017-19 and in both interim periods (January-September 2019 and January-September 2020), production decreased by *** percent between 2017 and 2018, thus decreasing capacity utilization by *** percentage points. Honeywell's production then increased by *** percent between 2018 and 2019, with capacity utilization ending *** percentage points higher in 2019 than in 2017. Honeywell's production and capacity utilization were *** percent and *** percentage points lower, respectively, in January-September 2020 than in January-September 2019.

Table III-3
R-125: U.S. producer Honeywell's production, capacity, 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
	Quantity (short tons)				
Capacity	***	***	***	***	***
Production	***	***	***	***	***
	Ratio (percent)				
Capacity utilization	***	***	***	***	***

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

Figure III-1
R-125: U.S. producer Honeywell's production, capacity, and capacity utilization, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Alternative products

Honeywell reported *** on the same equipment as R-125.[2]

[2] Honeywell stated that other products could not be produced on the same machinery as R-125 without significant capital investment. Petitioner's post-conference brief, pp. 5 and 30.

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

Table III-4 presents Honeywell's U.S. shipments, export shipments, and total shipments. The quantity of Honeywell's total shipments, inclusive of U.S. and export shipments, increased by *** percent during 2017-19, was lowest in 2018, and was *** percent higher in January-September 2020 than in January-September 2019. Honeywell reported ***. ***. The value of Honeywell's total shipments increased during 2017-19 by *** percent, and was lower in January-September 2020 than in January-September 2019 by *** percent. While the quantity and value of Honeywell's commercial U.S. shipments and internal consumption decreased during 2017-19, the firm's swaps increased during 2017-19.[3] Generally, the unit values of Honeywell's U.S. shipments were lower in 2019 than in 2017.

The quantity of Honeywell's commercial shipments decreased overall during 2017-19 by *** percent, though was *** percent higher in January-September 2020 than in January-September 2019. By quantity, Honeywell's internal consumption of R-125, typically used to produce downstream blends such as R-410A and R-404A, decreased overall during 2017-19 by *** percent, though was *** percent higher in January-September 2020 than in January-September 2019. In contrast, the quantity of Honeywell's swaps increased each year during 2017-19 for an overall increase of *** percent, and was *** percent higher in January-September 2020 than in January-September 2019. As a share of quantity, Honeywell's commercial shipments accounted for between *** percent and *** percent of the firm's total shipments during 2017-19, and were lowest in 2019. Honeywell's internal consumption accounted for between *** percent and *** percent as a share of quantity, and generally ***. In contrast, Honeywell's swaps accounted for between *** percent and *** percent of Honeywell's total shipments during 2017-19, and *** in 2019.

The trends shown in the value of Honeywell's shipments were similar to its trends shown by quantity, but to a greater degree. The value of Honeywell's commercial shipments decreased overall during 2017-19 by *** percent, and was *** percent lower in January-September 2020 than in January-September 2019. By value, Honeywell's internal consumption of R-125 decreased overall during 2017-19 by *** percent, and was *** percent lower in January-September 2020 than in January-September 2019. In contrast, the value of Honeywell's swaps increased each year during 2017-19 for an overall increase of *** percent, and was *** percent higher in January-September 2020 than in January-September 2019. As a share of

[3] Honeywell reported that the firm ***. Email from ***. See Part VI for additional information on the valuation of swap transactions.

value, Honeywell's commercial shipments during 2017-19 accounted for between *** percent and *** percent of the firm's total shipments during 2017-19, though were lowest in January-September 2020 at *** percent. Honeywell's internal consumption accounted for between *** percent and *** percent as a share of value, and generally ***. In contrast, Honeywell's swaps accounted for between *** percent and *** percent of Honeywell's total shipments during 2017-19, and *** in 2019, though ***, accounting for *** percent of the value of Honeywell's total shipments.

The unit value of Honeywell's commercial shipments ranged from $*** per short ton to $*** per short ton, and decreased overall during 2017-19, though was highest in 2018. Honeywell's commercial shipment unit values were *** percent lower in January-September 2020 than in January-September 2019. The unit value of Honeywell's internal consumption ranged from $*** per short ton to $*** per short ton, and decreased each year during 2017-19, for an overall decrease of *** percent. Honeywell's internal consumption unit values were *** percent lower in January-September 2020 than in January-September 2019. The unit value of Honeywell's swaps ranged from $*** per short ton to $*** per short ton, and decreased each year during 2017-19, for an overall decrease of *** percent. Honeywell's swap unit values were *** percent lower in January-September 2020 than in January-September 2019.

Table III-4
R-125: U.S. producer Honeywell's U.S. shipments, exports 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 (short tons)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per short ton)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Table continued on next page.

Table III-4--Continued
R-125: U.S. producer Honeywell's U.S. shipments, exports 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
	Share of quantity (percent)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

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

U.S. producers' inventories

Table III-5 presents Honeywell's end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments. Honeywell's end-of-period inventories increased during 2017-19 by *** percent, and in January-September 2020 were *** what they were in January-September 2019.

Table III-5
R-125: U.S. producer Honeywell's inventories, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
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

Honeywell's imports of R-125 are presented in table III-6. Honeywell ***. Honeywell's imports were higher in January-September 2020 than in January-September 2019. Honeywell also ***.[4]

Table III-6
R-125: U.S. producer Honeywell's U.S. production and imports, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Honeywell's U.S. production	***	***	***	***	***
Honeywell's U.S. imports from ***	***	***	***	***	***
	Ratio (percent)				
Honeywell's ratio to U.S. production of imports from ***	***	***	***	***	***

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

[4] Honeywell's U.S. producer questionnaire response at question II-11.

U.S. employment, wages, and productivity

Table III-7 shows U.S. producers' employment-related data. The number of production and related workers (PRWs), total hours worked, hours worked per PRW, and wages paid decreased during 2017-19 by *** percent, *** percent, *** percent, and *** percent respectively. These indicators remained steady in both interim periods with the exception of wages paid, which was slightly higher in January-September 2020 than in January-September 2019. Honeywell's hourly wages increased during 2017-19, from $*** per hour in 2017 to $*** per hour in 2019, for an overall increase of *** percent. Fluctuating production coupled with a steady decline in total hours worked and PRWs resulted in an increase in Honeywell's productivity during 2017-19 by *** percent, though it was lower by *** percent in January-September 2020 than in January-September 2019.[5] Unit labor costs decreased each year during 2017-19, though were higher in January-September 2020 than in January-September 2019.

Table III-7
R-125: U.S. producer Honeywell's employment related data, 2017-19, January to September 2019, and January to September 2020

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

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

[5] Honeywell explained that the decrease in PRWs consisted ***. ***.

Captive consumption

Section 771(7)(C)(iv) of the Act states that–[6]

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

Transfers and sales

As reported in table III-4 above, internal consumption accounted for between *** percent and *** percent of the quantity of U.S. producers' U.S. shipments of R-125 during 2017-19.

First statutory criterion in captive consumption

The first requirement for application of the captive consumption provision is that the domestic like product that is internally transferred for processing into that downstream article not enter the merchant market for the domestic like product. Honeywell reported internal consumption of R-125 for the production of downstream blends.[7] Honeywell reported *** diverting R-125 intended for internal consumption to the merchant market.

Second statutory criterion in captive consumption

The second criterion of the captive consumption provision concerns whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. With respect to the downstream articles resulting from

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

[7] Honeywell reported that from 2018 to 2020, it used R-125 to make blends including R-410A, R-407C, R-422D, R-404A, R-507A, R-438A, R-407A, R-407F, R-407H, R-448A, and R-449A. Petitioner's postconference brief, p. 9.

captive production (table III-8), R-125 comprises between *** percent and *** percent of the value of material inputs for the downstream blends, and *** percent and *** percent of the quantity of material inputs for the downstream blends.[8]

Table III-8
R-125: U.S. producer Honeywell's share of materials in production of downstream articles

Item	Share of material inputs	
	Share of value (percent)	Share of quantity (percent)
Production of 410A.--		
R-125's share	***	***
Other inputs' share	***	***
All material inputs	***	***
Production of 404A.--		
R-125's share	***	***
Other inputs' share	***	***
All material inputs	***	***
Production of 407C.--		
R-125's share	***	***
Other inputs' share	***	***
All material inputs	***	***
Production of 507A.--		
R-125's share	***	***
Other inputs' share	***	***
All material inputs	***	***
Production of other downstream products .--		
R-125's share	***	***
Other inputs' share	***	***
All material inputs	***	***

Note: Share of value is the share of raw material costs for the downstream blend. Share of quantity is the quantity of R-125 contained in the downstream blend by weight.
Source: Compiled from data submitted in response to Commission questionnaires.

[8] Honeywell contends that, on average, R-125 accounts for *** percent of the raw material costs of these downstream blends. Petitioner's post-conference brief, p. 9.

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

U.S. importers

The Commission issued importer questionnaires to 20 firms believed to be importers of subject R-125, as well as to all U.S. producers of R-125.[1] Usable questionnaire responses were received from 15 companies, representing approximately *** percent of U.S. imports of R-125 from China in 2019 under HTS subheading 2903.39.20, a "basket" category.[2] Table IV-1 lists all responding U.S. importers of R-125 from China and other sources, their locations, and their shares of U.S. imports, in 2019.[3] [4] [5] [6]

[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 subheading 2903.39.20 in 2019.

[2] R-125 contained in covered blends may also enter under HTS subheading 3824.78.00. See table IV-3 for a discussion on U.S. imports of R-125 by source and type.

[3] Importers *** are related entities who identified ***. ***. ***.

[4] BMP International, BMP USA, Cool Master, and IGas USA, collectively referred to as the "BMP Group", ***.

[5] U.S. importers reported importing from India as the sole nonsubject source of R-125.

[6] Importers FluoroFusion and Kivlan and Co. reported that the firms ***.

Table IV-1
R-125: U.S. importers by source, 2019

Firm	Headquarters	Share of imports by source (percent)		
		China	Nonsubject sources	All import sources
Arkema	King Of Prussia, PA	***	***	***
BMP International	Tampa, FL	***	***	***
BMP USA	Tampa, FL	***	***	***
Chemours	Wilmington, DE	***	***	***
Cool Master	Tampa, FL	***	***	***
First Continental	Glen Rock, NJ	***	***	***
FluoroFusion	Clayton, NC	***	***	***
Golden G	Tampa, FL	***	***	***
Honeywell	Charlotte, NC	***	***	***
IGas	Tampa, FL	***	***	***
Kivlan	Clayton, NC	***	***	***
National	Philadelphia, PA	***	***	***
RAMJ	Tampa, FL	***	***	***
Scales N Stuff	Tampa, FL	***	***	***
Technical Chemical	Cleburne, TX	***	***	***
Total		***	***	***

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

U.S. imports

Table IV-2 presents data for U.S. imports of R-125 from China and all other sources. U.S. imports of R-125 from China accounted for *** of all imports of R-125 during 2017-19. During 2017-19, the quantity of U.S. imports from China increased between 2017 and 2018 by *** percent, then decreased between 2018 and 2019 by ***, for an overall decrease of *** percent. but were *** percent lower in January-September 2020 than in January-September 2019. By quantity, U.S. imports of R-125 from nonsubject sources, which accounted for between *** percent and *** percent of the quantity of U.S. imports, decreased by *** percent during 2017-19, although like subject imports, were highest in 2018. The quantity of U.S. imports of R-125 from nonsubject sources were higher in January-September 2020 (*** short tons) than in January-September 2019 (*** short tons).

The value of U.S. imports of R-125 from China increased between 2017 and 2018 by *** percent, then decreased between 2018 and 2019 by *** percent, for an overall decrease of *** percent between 2017 and 2019. Similar to the trend of the value of subject imports, U.S. imports of R-125 from nonsubject sources increased between 2017 and 2018 by *** percent, then decreased between 2018 and 2019 by *** percent, for an overall decrease of *** percent. In contrast however, the value of U.S. imports of R-125 from nonsubject sources was higher *** in January-September 2020 than in January-September 2019.

The unit value of U.S. imports of R-125 from China decreased during 2017-19 by *** percent, though decreased most dramatically between 2018 and 2019, when the unit value decreased by *** percent. The unit value of U.S. imports of R-125 from China was *** percent lower in January-September 2020 than in January-September 2019, with ***. The unit value of U.S. imports of R-125 from nonsubject sources, which were consistently lower than those from China, decreased by *** percent during 2017-19. The unit value of U.S. imports of R-125 from nonsubject sources was *** percent higher in January-September 2020 than in January-September 2019.[7]

[7] ***. ***. These firms accounted for *** percent of U.S. imports of R-125 in 2017. ***.

Table IV-2
R-125: U.S. imports by source, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of quantity (percent)				
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Ratio to U.S. production				
U.S. imports from.-- China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Figure IV-1
R-125: U.S. import quantities and average unit values, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

As shown in table IV-3, U.S. imports of R-125 from China consisted primarily of pure R-125, with ***. In contrast, imports of R-125 from nonsubject sources consisted primarily of R-125 contained in covered blends, with ***.

Table IV-3
R-125: U.S. imports by source and type, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. imports from China.-- Pure R-125	***	***	***	***	***
R-125 in blends	***	***	***	***	***
All types	***	***	***	***	***
U.S. imports from nonsubject sources.-- Pure R-125	***	***	***	***	***
R-125 in blends	***	***	***	***	***
All types	***	***	***	***	***
U.S. imports from all import sources.-- Pure R-125	***	***	***	***	***
R-125 in blends	***	***	***	***	***
All types	***	***	***	***	***
	Share of quantity (percent)				
U.S. imports from China.-- Pure R-125	***	***	***	***	***
R-125 in blends	***	***	***	***	***
All types	***	***	***	***	***
U.S. imports from nonsubject sources.-- Pure R-125	***	***	***	***	***
R-125 in blends	***	***	***	***	***
All types	***	***	***	***	***
U.S. imports from all import sources.-- Pure R-125	***	***	***	***	***
R-125 in blends	***	***	***	***	***
All types	***	***	***	***	***

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

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[8] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[9] Imports from China accounted for *** percent of total imports of R-125 by quantity during 2019.[10]

Table IV-4
R-125: 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 (short tons)	Share quantity (percent)
U.S. imports from.--		
China	***	***
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)).

[10] The difference in the quantity of imports reported in Table IV-4 and imports reported in Tables IV-2 and IV-3 can be largely attributed to ***.

Apparent U.S. consumption and U.S. market shares

Table IV-5 and figure IV-2 present data on apparent U.S. consumption and U.S. market shares for R-125 in the total market.[11] Apparent U.S. consumption by quantity increased by *** percent during 2017-19, though was *** percent lower in January-September 2020 than in January-September 2019. Similar to the trends shown in the quantity of apparent U.S. consumption, the value of apparent U.S. consumption increased overall during 2017-19 by *** percent, but was *** percent lower in January-September 2020 than in January-September 2019. Honeywell's market share decreased during 2017-19 by *** percentage points by quantity, and *** percentage points by value, though was *** percentage points higher by quantity and *** percentage points higher by value in January-September 2020 than in January-September 2019. Market share held by U.S. shipments of subject imports increased by *** percentage points during 2017-19 by quantity and *** percent by value. Market share held by U.S. shipments of subject imports was *** percentage points lower by quantity and *** percentage points lower by value in January-September 2020 than in January-September 2019. During 2017-19 and both interim periods, U.S. importers' U.S. shipments of R-125 from nonsubject sources accounted for between *** of the quantity of apparent U.S. consumption, and *** of the value of apparent U.S. consumption.

[11] Information on apparent U.S. consumption for the merchant market is discussed below, and available in Appendix C.

Table IV-5
R-125: U.S. shipments of domestic product, U.S. shipments of imports, apparent U.S. consumption, and market shares for the total market, 2017-19, January to September 2019, and January to September 2020

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

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

Figure IV-2
R-125: Apparent U.S. consumption for the total market, 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Table IV-6 and figure IV-2 present data on apparent U.S. consumption and U.S. market shares for R-125 in the merchant market, inclusive of U.S. producers' commercial U.S. shipments and swaps. Apparent consumption increased *** percent by quantity during 2017-19, though was *** percent lower in January-September 2020 than in January-September 2019. The value of apparent U.S. consumption increased overall during 2017-19 by *** percent, and was *** percent lower in January-September 2020 than in January-September 2019. Honeywell's market share decreased during 2017-19 by *** percentage points by quantity, and *** percentage points by value, though it was *** percentage points higher by quantity and *** percentage points by value in January-September 2020 than in January-September 2019. Market share held by U.S. shipments of subject imports increased during 2017-19 by *** percentage points during 2017-19 by quantity and *** percentage points by value overall, although the market share by value was highest in 2018. Market share held by U.S. shipments of subject imports was *** percentage points lower by quantity and *** percentage points by value in January-September 2020 than in January-September 2019. During 2017-19 and both interim periods, U.S. importers' U.S. shipments of R-125 from nonsubject sources accounted for between *** of the quantity of apparent consumption, and between *** percent of the value of apparent consumption in the merchant market.

Table IV-6
R-125: U.S. shipments of domestic product, U.S. shipments of imports, apparent U.S. consumption, and market shares for the merchant market (commercial shipments and swaps), 2017-19, January to September 2019, and January to September 2020

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

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

Figure IV-2
R-125: Apparent U.S. consumption for the merchant market (commercial shipments and swaps), 2017-19, January to September 2019, and January to September 2020

* * * * * * *

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

Part V: Pricing data

Factors affecting prices

Raw material costs

R-125 is produced through a reaction of perchloroethylene ("PCE") and hydrofluoric acid ("HF").[1] During 2017-19, Honeywell's raw materials' share of the cost of goods sold increased, from *** percent to *** percent. Honeywell reported that the share of the cost of goods sold of perchloroethylene decreased from *** percent to *** percent from 2017-19, and the share of cost of goods sold of hydrofluoric acid increased from *** percent to *** percent over the same period. Honeywell reported ***.[2]

Transportation costs to the U.S. market

Transportation costs for R-125 shipped from China to the United States averaged 5.1 percent during 2019. These estimates were derived from official import data and represent the transportation and other charges on imports.[3]

U.S. inland transportation costs

*** six U.S. importers[4] [5] reported that they typically arrange transportation to their customers. Honeywell reported that its U.S. inland transportation costs were *** percent, while most responding importers reported costs of 0.1 to 10.0 percent.

---

[1] Petition, p. 7.

[2] Conference transcript, p. 64 (Wood).

[3] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2019 and then dividing by the customs value based on the HTS subheading 2903.39.2035. HTS subheading 2903.39.2035 is not specific to R-125 and contains out-of-scope product.

[4] Importers *** share common ownership, though each firm submitted a separate importers' questionnaire. Importers *** are also related companies and submitted separate importers' questionnaires. Importers *** are also related companies and submitted separate importers' questionnaires. Each firm's responses are reported separately throughout this section.

[5] Ten of the 15 responding importers internally consumed R-125 or transferred it to related parties for blending R-125 into HFC blends.

Pricing practices

Pricing methods[6]

As presented in table V-1, five responding importers set prices primarily on a transaction-by-transaction basis. Honeywell reported setting prices based on ***. One importer reported setting prices based on contracts.[7]

Table V-1
R-125: U.S. producer's and importers' reported price setting methods, by number of responding firms

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	5
Contract	***	1
Set price list	***	---
Other	***	4
Responding firms	***	9

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.

Honeywell reported making the majority of its sales through ***, with some sales through ***. The six responding importers reported selling a majority of their R-125 ***, with the remainder through ***. Table V-2 shows the U.S. producer's and importers' reported 2019 U.S. commercial shipments of R-125 by type of sale.

[6] Data reported by importers in this section are firms that commercially sell the R-125 they import to unrelated customers. These sales represented approximately 11 percent of all imports in 2019. The remaining portion of these imports were internally consumed.

[7] One importer, ***, selected "other" and reported ***. Three importers, ***, selected "other" and reported ***.

Table V-2
R-125: U.S. producer's and importers' shares of U.S. commercial shipments by type of sale, 2019

Item	U.S. producers	Subject U.S. importers
	Share (percent)	
Share of commercial U.S. shipments.-- Long-term contracts	***	***
Annual contracts	***	***
Short-term contracts	***	***
Spot sales	***	***
Total	100.0	100.0

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

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

Honeywell reported that long-term contracts are negotiated with a different pricing structure than spot sales.[8] Honeywell reported that OEMs tend to utilize long-term contracts, while aftermarket customers contract on a spot basis.[9] Honeywell reported that it will renegotiate contract prices to keep customers.[10] Honeywell reported that its long-term contracts average *** years, and ***. Honeywell reported *** contracts *** indexed to raw material costs.[11]

Sales terms and discounts

*** responding importers quote prices on a delivered basis. *** responding importers do not have discount policies. *** responding importers ***. *** reported ***.[12]

[8] Conference transcript, p. 65 (LaPietra).
[9] Conference transcript, p. 65 (LaPietra).
[10] Conference transcript, p. 91 (LaPietra).
[11] Honeywell ***. For more information, see the section titled Net Sales in part VI.
[12] *** reported ***.

Price and purchase cost 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 R-125 product shipped to unrelated U.S. customers during January 2017-September 2020. In addition, firms that imported this product from China for their own use in the production of downstream products were requested to provide import purchase cost data.

Product 1.—Pentafluoroethane, more commonly referred to as R-125, with a chemical composition of CF_3CHF_2, sold in bulk.

Honeywell and five importers[13] provided usable pricing data for sales of the requested product, although not all firms reported pricing for all products for all quarters.[14] Ten importers[15] provided usable purchase cost data. Pricing data reported by these firms accounted for approximately *** percent of Honeywell's commercial shipments of R-125 and 2.0 percent of subject imports from China from 2017-19. Purchase cost data reported by these firms accounted for 81.6 percent of subject imports from China from 2017-19.[16] [17]

[13] These five importers were: ***.

[14] 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.

[15] These ten importers were: ***.

[16] Three importers, ***, reported ***. See ***. Importer ***. ***.

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

Price data and landed duty-paid ("LDP") purchase cost data[18] for product 1 are presented in table V-3 and figure V-1.[19] [20]

[18] 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.

[19] *** reported purchase cost data for imports that were ***.

[20] The petitioner argued that there is a problem with the pricing and purchase cost data collected. In particular, the petitioner argued that "outlier" data with per-unit values *** should be excluded from overselling/underselling data. Petitioner removed these "outlier" values from the following importers when calculating underselling/overselling in its posthearing brief: ***. Petitioner's posthearing brief, pp. 19-22. Importer *** confirmed ***. ***, email message to USITC staff, January 28, 2021. See also ***, email message to USITC staff, February 9, 2021 ***. Importer *** confirmed ***. ***, email message to USITC staff, January 28, 2021. See also ***, email message to USITC staff, February 9, 2021 ***. Importer *** confirmed ***. ***, email message to USITC staff, February 2, 2021. See also ***, email message to USITC staff, February 9, 2021 ***. ***. ***, email message to USITC staff, January 28, 2021, and ***, email message to USITC staff, January 28, 2021. Importer ***. ***, email message to USITC staff, February 2, 2021.

Table V-3
R-125: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, and margins of underselling/(overselling), and Chinese landed duty paid costs and quantities and price cost differences by quarter, January 2017 through September 2020

Period	United States		China - price			China - costs		
	Price (dollars per short ton)	Quantity (short tons)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Unit LDP value (dollars per short ton)	Quantity (short tons)	Price-cost differential (percent)
2017:								
Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018:								
Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019:								
Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2020:								
Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***

Note.-- Product 1: Pentafluoroethane, more commonly referred to as R-125, with a chemical composition of CF_3CHF_2, sold in bulk.
Note.-- Producer Honeywell ***.
Note.-- Importer ***.
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 V-1
R-125: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by quarter, January 2017-September 2020

* * * * * * *

* * * * * * *

Product 1: Pentafluoroethane, more commonly referred to as R-125, with a chemical composition of CF_3CHF_2, sold in bulk.

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

Import purchase cost data

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of directly importing R-125.

Four of 13 responding importers reported that they incurred additional costs beyond landed duty-paid costs by importing R-125 directly rather than purchasing from a U.S. producer or U.S. importer. All four of the responding importers estimated the total additional cost incurred; estimates ranged from *** percent of the landed duty-paid value. Firms were also asked to identify specific additional costs they incurred as a result of directly importing R-125 themselves. Reported costs and the estimated additional cost compared to landed duty-paid value included:

- Drayage[21] – 3 percent
- Inland freight – 2 percent (2 firms)
- Terminal transloading[22] – 1 percent
- Inland transit cost from port to blending location[23] – 8 percent
- Chassis rental – 2 percent

Firms were also asked to describe how these additional costs incurred by importing R-125 directly compared with additional costs incurred when purchasing from a U.S. producer or U.S. importer. Firms had varying responses: *** reported that it does not incur inland freight costs when purchasing from the U.S. producer, and *** reported that U.S. importers tend to include freight in the product's cost; *** reported that chassis rentals and drayage aren't required when purchasing from a U.S. importer. *** reported that importing R-125 results in transloading costs from ISO containers to railcars for inland transportation. *** reported that importing R-125 incurs greater costs for railcar freight, due to the length of its railcar route after the product is unloaded from the ISO container.[24] In contrast, *** reported that it incurs lower logistical costs for sourcing domestic R-125 via railcar.

Three of 14 responding importers reported that they compare costs of importing directly to the cost of purchasing from a U.S. producer in determining whether to import R-125,

[21] *** defined drayage as "transportation to and from {the} port of unlading."

[22] *** estimated this cost as ***.

[23] *** defined this cost as the "logistics cost to move ISO tanks for consumption."

[24] The firm did not state what the length of its railcar route is, vis-à-vis the average railcar route length.

three importers compare costs to purchasing from a U.S. importer, and eight importers do not compare costs of purchasing from either U.S. producers or importers.

Ten importers[25] identified benefits from importing R-125 directly instead of purchasing from the U.S. producer or importers, with a plurality of firms reporting that they import R-125 because "U.S. producers of R-125 will not sell {to us} because {they are} a competitor."[26] [27] *** reported ***. *** reported that China has the capacity to meet its demand, while *** reported that the U.S. producer cannot fully meet its supply requirements. *** echoed this statement, reporting that demand in the U.S. HVAC/R industry "exceeds the amount of R-125 that Honeywell produces in the U.S." *** reported that imported R-125 has a lower delivered cost compared to purchasing R-125 domestically. *** reported that it imports to cover periods of increased demand.

Firms were also asked whether the import cost (both excluding and including additional costs of the R-125 they imported) was lower than the price of purchasing R-125 from a U.S. producer or importer. One of eight importers reported that imports were priced lower when not including the additional costs, and one of eight importers reported that imports were priced lower when including additional costs.

*** reported the following estimated savings by importing themselves rather than purchasing from Honeywell: ***.

Price and purchase cost trends

Domestic prices *** overall, and import prices and landed duty-paid costs decreased during January 2017-September 2020. Table V-4 summarizes the price trends by country. As shown in the table, domestic prices increased by *** percent during January 2017-September 2020. Import prices were not available for the whole period, but decreased by *** percent between the second quarter of 2017 and the third quarter of 2020.[28] Landed duty-paid costs decreased by *** percent during January 2017-September 2020. Honeywell's prices *** from the first quarter through the second quarter of 2017 and increased

[25] An eleventh importer, ***, responded to the question prompt, but said, "Unknown."
[26] These responses were ***.
[27] Importer *** reported that ***. *** reported that ***.
[28] These were the first and last quarters in which importers provided price data.

irregularly thereafter (figure V-3). Import purchase costs varied much more than U.S. prices during January 2017-September 2020. Import purchase costs increased between the first and third quarters of 2017 before falling and then spiking again in the second quarter of 2018. Import purchase costs generally decreased from the third quarter of 2018 to the third quarter of 2020 (figure V-4). Several importers reported that threats of section 301 tariffs caused R-125 prices from Chinese manufacturers to decrease. Importers also reported that market prices tend to increase in the first half of each year, due to the lead-up to cooling season.[29] One importer reported that there were temporary price increases due to raw material shortages in China resulting from plant and mining shutdowns in the second quarter of 2017.[30]

Table V-4
R-125: Number of quarters containing observations low price, high price, and change in price over January 2017 through September 2020, by product and source

Item	Number of quarters	Low price (dollars per short ton)	High price (dollars per short ton)	Change in price over period[1] (percent)
Product 1:				
United States	***	***	***	***
China price	***	***	***	***
China cost	***	***	***	***

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

[29] But see ***.
[30] The timing of these shutdowns ***.

Figure V-3
R-125: Indexed U.S. producer prices, January 2017 through September 2020

* * * * * * *

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

Figure V-4
R-125: Indexed subject U.S. importer purchase costs, January 2017 through September 2020

* * * * * * *

Note.-- Pricing data is reported in table V-3, as pricing data cannot be indexed vis-à-vis the purchase cost data. The first quarter in which importers provided price data was the second quarter of 2017.

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

Price and purchase cost comparisons

Price comparisons

As shown in table V-5, prices for product imported from China were below those for U.S.-produced product in 6 of 10 instances (*** short tons); margins of underselling were between *** and *** percent. In the remaining four instances (*** short tons), prices for product from China were between *** percent above prices for the domestic product.[31]

Table V-5
R-125: Instances of underselling/overselling and the range and average of margins, by product and by country, January 2017 through September 2020

	Underselling				
				Margin Range (percent)	
Source	Number of quarters	Quantity (short tons)	Average margin (percent)	Min	Max
Pricing data, underselling	***	***	***	***	***
	(Overselling)				
				Margin Range (percent)	
Source	Number of quarters	Quantity (short tons)	Average margin (percent)	Min	Max
Pricing data, 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.

Price-cost comparisons

As shown in table V-6, landed duty-paid costs for R-125 imported from China were below the sales price for U.S.-produced product in 10 of 15 instances (*** short tons); price-cost differentials ranged from *** percent. In the remaining 5 instances (*** short tons), landed duty-paid costs for R-125 from China were between *** percent above sales prices for the domestic product.[32]

[31] The overselling margin of *** percent occurred in Q2 2017 when, as discussed above, reports of raw material shortages in China due to plant and mining shutdowns in Q2 2017 led to temporary price increases. National reported ***. National's postconference brief, p. 16.

[32] The price-cost differential in Q2 2017 of *** percent occurred during temporary raw material shortages for R-125 which temporarily increased Chinese prices.

Table V-6
R-125: Instances of lower/(higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product and by country, January 2017 through September 2020

Source	Unit purchase cost data lower than U.S. prices				
	Number of quarters	Quantity (short tons)	Average price / cost differential (percent)	Price / cost differential range (percent)	
				Min	Max
Purchase cost, lower	***	***	***	***	***
Source	**(Unit purchase cost data higher than U.S. prices)**				
	Number of quarters	Quantity (short tons)	Average price / cost differential (percent)	Price / cost differential range (percent)	
				Min	Max
Purchase cost, 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 Honeywell report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of R-125 from China during January 2017-September 2020. Honeywell identified *** firms with which it lost sales or revenue (*** consisting of lost sales allegations, *** consisting of lost revenue allegations, and *** consisting of both types of allegations). Honeywell reported that it had lost sales of R-125 to *** in 2020 due to Chinese imports. Honeywell reported that ***. Honeywell reported ***. Honeywell also reported ***.

Staff contacted 4 purchasers and received responses from 8 purchasers.[33] [34] [35] Responding purchasers reported purchasing and importing *** short tons of R-125 during January 2017-September 2020 (table V-7).

Of the 8 responding purchasers, ***, reported that, since 2017, they had purchased or imported R-125 from China instead of U.S.-produced product. *** purchasers reported that subject import prices were lower than U.S.-produced product, and *** purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product (table V-8). ***. Purchasers identified availability and difficulties working with the domestic producer as non-price reasons for purchasing Chinese-produced product, rather than U.S.-produced product. [36]

Of the 8 purchasers, *** reported that the U.S. producer had reduced prices in order to compete with lower-priced imports from China.

[33] One of those purchasers, ***, reported in its reply ***. *** reported ***.

[34] ***.

[35] Purchasers *** were listed on Honeywell's lost sales lost revenue allegations. Purchasers *** were not listed on Honeywell's lost sales lost revenue allegations. ***.

[36] Purchaser *** reported ***. Purchaser *** reported ***. Purchaser *** reported ***.

Table V-7
R-125: U.S. purchasers' U.S. purchases and U.S. imports, 2017-19

Purchaser	Purchases and imports in January 2017 to September 2020 (short tons)			Change in domestic share (pp, 2017-19)	Change in subject country share (pp, 2017-19)
	Domestic	Subject	All other		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	***	***	***	***	***

Note.-- Includes all other sources and unknown sources.
Note.-- Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.
Note.-- Changes of 100 percent indicate that these firms did not purchase from the source in either the first or the last year.

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

Table V-8
R-125: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Purchaser	Subject imports purchased instead of domestic (Y/N)	Imports priced lower (Y/N)	If purchased subject imports instead of domestic, was price a primary reason		
			Y/N	If Yes, quantity (short tons)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes--2; No--6	Yes--0; No--3	Yes--0; No--3	***	

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

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics. *** reported that ***. *** reported that ***. *** reported that ***, while *** reported that ***. *** reported that ***. *** reported that ***.

Honeywell stated that ***.[37] [38] Honeywell reported ***.[39] [40] Honeywell also reported ***.[41] Honeywell reported ***.[42] Respondent National argued that ***.[43] [44]

[37] Petition, p. 19.

[38] Honeywell also reported that ***. For example, Honeywell reported ***. Honeywell ***.

[39] Petition, p. 19.

[40] Assuming petitioner's unit of measurement is ***. Energy Star, "Does the 'M' mean 'Million' or 'Thousand' (Mcf/Mlbs/MWh/MBtu)?," (accessed February 9, 2021), https://energystar-mesa.force.com/PortfolioManager/s/article/Does-the-M-mean-Million-or-Thousand-Mcf-Mlbs-MWh-MBtu-1600088536251. The "M" sometimes stands for 1,000, rather than 1,000,000. See, e.g., "Steam Metering Basics" (accessed February 9, 2021), https://aeenewengland.org/images/downloads/Past_Meeting_Presentations/ron_burke___steam_metering_basics.pdf. Petitioner did not define the ordinal name when using "Mlbs." See petition, pp. 19-20. See also petitioner's postconference brief, pp. 25-26.

[41] Petitioner's postconference brief, p. 26. However, *** reported ***. *** reported ***.

[42] Petitioner's postconference brief, p. 26.

[43] Respondent National's postconference brief, p. 6.

[44] Respondent reported ***. Respondent reported ***. *** postconference brief, p. 19.

Part VI: Financial experience of U.S. producers

Background

The petitioner, Honeywell, is the sole U.S. producer of R-125 and reported its financial results on R-125 operations on a calendar year basis and on the basis of generally accepted accounting principles ("GAAP").[1] [2] Merchant market sales (commercial sales and swaps) accounted for the majority of Honeywell's revenue, while internal consumption accounted for *** percent to *** percent of revenue during the period for which data were requested.[3]

Operations on R-125 (Pentafluoroethane)

Tables VI-1 and VI-2 present overall R-125 financial results and corresponding changes in average per-unit values ("AUVs") from 2017 to 2019, January to September 2019 ("interim 2019"), and January to September 2020 ("interim 2020"). Tables VI-3 and VI-4 present financial results specific to merchant market operations (commercial sales and swaps) and corresponding changes in AUVs.

[1] Honeywell's R-125 operations are in the Advanced Materials division, part of the Honeywell International, Inc.'s Performance Materials and Technologies operating segment. In 2019, net sales of R-125 accounted for *** percent of Performance Materials and Technologies segment net sales of $10.8 billion and *** percent of Honeywell International, Inc.'s 2019 total net sales of $36.7 billion. Email from Counsel for Honeywell, February 9, 2021 and Honeywell's 2019 Form 10-K, pp. 16 and 20 (as filed).

[2] With respect to the operations at the facility (Geismar plant) where R-125 is produced, R-125 accounted for *** percent of sales in 2019. Honeywell's U.S. producer questionnaire, III-5.

[3] ***.

Table VI-1
R-125: Results of overal operations of U.S. producer Honeywell, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Commercial sales	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Commercial sales	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
Total net sales	***	***	***	***	***
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***

Table continued on next page.

Table VI-1—Continued
R-125: Results of overall operations of U.S. producer Honeywell, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
	Unit value (dollars per short ton)				
Commercial sales	***	***	***	***	***
Internal consumption	***	***	***	***	***
Swaps	***	***	***	***	***
Total net sales	***	***	***	***	***
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

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

Table VI-2
R-125: Changes in AUVs of overall operations between calendar years and partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Commercial sales	▼***	▲***	▼***	▼***
Internal consumption	▼***	▼***	▼***	▼***
Swaps	▼***	▼***	▼***	▼***
Total net sales	▼***	▼***	▼***	▼***
Cost of goods sold.-- Hydrofluoric acid	▲***	▼***	▲***	▲***
Perchloroethylene	▼***	▼***	▼***	▼***
Other raw materials	▲***	▲***	▲***	▼***
Total raw materials costs	▲***	▼***	▲***	▲***
Direct labor cost	▼***	▼***	▼***	▲***
Other factory costs	▼***	▼***	▼***	▲***
Total COGS	▼***	▼***	▼***	▲***
	Change in AUVs (dollars per short ton)			
Commercial sales	▼***	▲***	▼***	▼***
Internal consumption	▼***	▼***	▼***	▼***
Swaps	▼***	▼***	▼***	▼***
Total net sales	▼***	▼***	▼***	▼***
Cost of goods sold.-- Hydrofluoric acid	105	▼***	▲***	▲***
Perchloroethylene	▼***	▼***	▼***	▼***
Other raw materials	▲***	▲***	▲***	▼***
Total raw materials costs	▲***	▼***	▲***	▲***
Direct labor cost	▼***	▼***	▼***	▲***
Other factory costs	▼***	▼***	▼***	▲***
Total COGS	▼***	▼***	▼***	▲***
Gross profit	▲***	▲***	▼***	▼***
SG&A expense	▲***	▲***	▼***	▲***
Operating income or (loss)	▲***	▲***	▼***	▼***
Net income or (loss)	▲***	▲***	▼***	▼***

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

Table VI-3
R-125: Results of merchant market operations (commercial sales and swaps combined) of U.S. producer Honeywell, 2017-19, January-Septmeber 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Commercial and swap sales	***	***	***	***	***
	Value (1,000 dollars)				
Commercial and swap sales	***	***	***	***	***
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***

Table continued on next page.

Table VI-3—Continued
R-125: Results of merchant market operations (commercial sales and swaps combined) of U.S. producer Honeywell, 2017-19, January-Septmeber 2019, and January-September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
	Unit value (dollars per short ton)				
Commercial and swap sales	***	***	***	***	***
Cost of goods sold.-- Hydrofluoric acid	***	***	***	***	***
Perchloroethylene	***	***	***	***	***
Other raw materials	***	***	***	***	***
Total raw materials costs	***	***	***	***	***
Direct labor cost	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

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

Table VI-4
R-125: Changes in AUVs of merchant market operations (commercial and swap combined) between calendar years and partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Commercial and swap sales	▼***	▲***	▼***	▼***
Cost of goods sold.--				
Hydrofluoric acid	▲***	▼***	▲***	▲***
Perchloroethylene	▼***	▼***	▼***	▼***
Other raw materials	▲***	▲***	▲***	▼***
Total raw materials costs	▲***	▼***	▲***	▲***
Direct labor cost	▼***	▼***	▼***	▲***
Other factory costs	▼***	▼***	▼***	▲***
Total COGS	▼***	▼***	▼***	▲***
	Change in AUVs (dollars per short ton)			
Commercial and swap sales	▼***	▲***	▼***	▼***
Cost of goods sold.--				
Hydrofluoric acid	100	▼***	▲***	▲***
Perchloroethylene	▼***	▼***	▼***	▼***
Other raw materials	▲***	▲***	▲***	▼***
Total raw materials costs	▲***	▼***	▲***	▲***
Direct labor cost	▼***	▼***	▼***	▲***
Other factory costs	▼***	▼***	▼***	▲***
Total COGS	▼***	▼***	▼***	▲***
Gross profit	▲***	▲***	▼***	▼***
SG&A expense	▲***	▲***	▼***	▲***
Operating income or (loss)	▲***	▲***	▼***	▼***
Net income or (loss)	▲***	▲***	▼***	▼***

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

Net sales

As presented in table VI-1, total net sales include internal consumption and commercial sales (open market commercial sales and swaps).[4] In overall operations, R-125 sales quantity increased by *** percent while value decreased by *** percent from 2017 to 2019; interim 2020 was higher in quantity but lower in value than in interim 2019 (table VI-1). In the merchant market, R-125 sales quantity and value both increased, by *** percent and *** percent, respectively, from 2017 to 2019; interim 2020 was higher in quantity but lower in value than in interim 2019 (table VI-3). The swap subcategory of net sales increased each annual period from 2017 to 2019 and somewhat offset decreases in open market commercial sales and internal consumption in both quantity and value.[5] Physical differences in R-125 product mix are limited to the type of packaging and volume of R-125 sold.[6]

AUVs per short ton in both categories of operations (overall and merchant market) decreased from 2017 to 2019 and were lower in interim 2020 than in interim 2019. The swap subcategory of merchant market sales accounted for the highest AUV in all five periods (***) while open market commercial sales AUVs declined the most of all three subcategories in 2019 (from $*** per-short ton in 2017, $*** per-short ton in 2018, and $*** per-short ton in 2019) and were much lower in interim 2020 than in interim 2019. Internal consumption AUVs

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[4] On a quantity basis, internal consumption accounted for *** percent and merchant market sales accounted for *** percent of total R-125 sales in 2019. Within the merchant market, open market commercial sales accounted for *** percent in quantity basis while *** accounted for *** percent of R-125 sales in 2019.

[5] ***. Honeywell's agreements with both Arkema and Chemours include ***. Honeywell's U.S. producer questionnaire, III-4a, III-4b, III-4c, III-4d, III-4e, III-4f, and III-4g and email from Counsel for Honeywell, February 9, 2021.

With respect to U.S. GAAP accounting treatment, the agreement between Honeywell and Arkema is a financial transaction involving monetary exchanges for goods, with valuation of the goods part of GAAP's revenue recognition principles (provided in FASB's conceptual framework or relevant authoritative accounting standards). The agreement between Honeywell and Chemours is a barter transaction, defined as two parties exchanging goods or services without involving cash payments. The fair market value of the goods involved in nonmonetary exchanges/barters may be recognized using historical fair market value measurements or carrying values of the goods. SEC's Codification of Staff Accounting Bulletin, Topic 13: Revenue Recognition, https://www.sec.gov/interps/account/sabcodet13.htm, retrieved February 11, 2021; http://archives.cpajournal.com/1999/0799/departments/D56799.HTM, retrieved February 11, 2021; and, FASB APB No. 29, Accounting for Nonmonetary Transactions, EITF FASB.

[6] R-125 is a chemical formula and not a differentiated product. It is a highly interchangeable commodity-like product. R-125 is delivered to large bulk customers via railcars or to aftermarket customers as a packaged product (jugs usually sold as 40 jugs per pallet, called a "skid"). Conference transcript, p. 28 (Cannistra) and p. 66 (Wood).

declined from *** per-short ton in 2017 to *** per-short ton in 2019 and were lower in interim 2020 than in interim 2019. The swap subcategory made up the largest share and highest AUV of net sales in 2019 as a result of negotiated volume and prices with two unrelated entities (***). Honeywell attributed the declines in both open market commercial sales and internal consumption to ***.[7] [8]

Cost of goods sold and gross profit or loss

With respect to overall operations (table VI-1), total cost of goods sold ("COGS") decreased overall in absolute value, average per-unit value, and as a ratio to net sales from 2017 to 2019. As a ratio to net sales total COGS decreased from *** percent in 2017 to *** percent in 2018, then increased to *** percent in 2019. Average unit COGS decreased from $*** per-short ton to $*** per-short ton from 2017 to 2019. Total COGS, unit COGS, and COGS as a ratio to net sales were all higher in interim 2020 than in interim 2019. The trends in unit COGS and COGS ratio to net sales were driven mostly by declines in director labor and other factory costs that more than offset increases in raw materials cost. COGS per-unit and as a ratio to net sales had the same directional trend in the merchant market (table VI-3).[9]

Total raw materials cost accounts for the largest share of COGS in overall operations (table VI-1), ranging from *** percent of total COGS to *** from 2017 to interim 2020. As a ratio to net sales total raw materials cost decreased from *** percent in 2017 to *** percent in 2018 before increasing to *** percent in 2019 (table VI-1). Average unit total raw materials decreased from $*** per-short ton in 2017 to $*** per-short ton in 2018 before increasing to $*** in 2019. Total raw materials cost, unit raw materials, and raw materials as a ratio to net sales were all higher in interim 2020 than in interim 2019 for overall operations (table VI-1). Raw materials cost share of total COGS for merchant market operations (table VI-3) were essentially the same as overall operations. Production of R-125 consists primarily of two material inputs, hydrofluoric acid ("HF") and perchloroethylene ("PCE"). In 2019, the share of total raw material cost accounted for by HF and PCE was *** percent and *** percent, respectively.[10] Honeywell explained that the fluctuations in HF and PCE input prices ***.[11]

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[7] ***. As a blender, Honeywell's own internal consumption of R-125 for its own downstream blends operations declined ***. Email from Counsel for Honeywell, February 9, 2021, p. 4.

[8] Honeywell internally consumes R-125 for downstream refrigerant blends production, with ***. Ibid., pp. 3 and 5.

[9] Honeywell reported costs ***. Honeywell's U.S. producer questionnaire, III-9b and III-9c and email from Counsel for Honeywell, February 9, 2021, p. 6.

[10] Honeywell ***. Email from Counsel for Honeywell, February 10, 2021.

[11] Email from Counsel for Honeywell, February 9, 2021, p. 6.

Other factory costs account for the second largest share of total COGS in both overall operations and the merchant market, ranging from *** percent to *** percent from 2017 to interim 2020. As a ratio to net sales, other factory costs decreased from *** percent in 2017 to *** percent in 2019 for overall operations (table VI-1). Average unit other factory costs decreased from $*** per-short ton in 2017 to $*** per-short ton in 2019 for overall operations (table VI-1). Honeywell explained that its R-125 facility was commissioned in 2002 and fully depreciated over 15 years, or in 2017 and 2018, ***.[12] Total other factory costs, unit other factory costs, and other factory costs as a ratio to net sales for overall operations were all higher in interim 2020 than in interim 2019 (table VI-1). For merchant market operations (table VI-3), other factory costs in the aggregate, on a per unit basis, and as a ratio to net sales were essentially the same as overall operations.

In both overall and merchant market operations, direct labor was the smallest component of COGS, ranging from *** percent to *** percent from 2017 to interim 2020. As a ratio to net sales, direct labor decreased from *** percent in 2017 to *** percent in 2019 in overall operations (table VI-1), with the same trend in merchant market at slightly lower ratios to net sales of *** percent to *** percent (table VI-3). Honeywell reduced its labor force during the POI, resulting in the direct labor cost declines.[13] Average unit direct labor costs decreased from $*** per-short ton in 2017 to $*** per-short ton in 2019 in overall operations, with the merchant market operations essentially the same (tables VI-1 and VI-3). Total direct labor cost, unit direct labor cost, and direct labor cost as a ratio to net sales were all higher in interim 2020 than in interim 2019 for both overall and merchant market operations.

Gross profit in both overall and merchant market operations *** from 2017 to 2019, and was *** lower between the comparable interim periods gross profit in overall operations ***. As presented in table VI-1, gross profit ***; gross profit was lower (a loss) in interim 2020 compared to interim 2019. Gross profit reached its highest level in 2018 in both overall and merchant market operations when COGS were at the lowest in both overall and merchant market operations (tables VI-1 and VI-3). Gross margins (total gross profit divided by total net sales) showed similar trends for both overall and merchant market operations during the period examined.

[12] Conference transcript, p. 20 (Wood). Honeywell further explained that ***. Email from Counsel for Honeywell, February 9, 2021, p. 7.

[13] Conference transcript, p. 20 (Wood) and email from counsel for Honeywell, February 9, 2021, p. 6.

SG&A expenses and operating income or loss[14]

As shown in tables VI-1 and VI-3, total selling, general, and administrative ("SG&A") expenses *** increased from 2017 to 2019 in both overall and merchant market operations; SG&A expenses were higher in interim 2020 than in interim 2019 in both overall and merchant market operations. SG&A expenses ratios (i.e., total SG&A expenses divided by net sales) followed the same trend, *** increasing from 2017 to 2019 and were higher in interim 2020 than in interim 2019.

As presented in table VI-1 and VI-3, Honeywell's operating income *** increased from 2017 to 2019 and was much lower in interim 2020 than in interim 2019 in both overall and merchant markets. Operating margins (i.e. operating income divided by net sales) also *** increased, from 1.8 percent in 2017 to 9.0 percent in 2018 and then to 7.1 percent in 2019 in the overall market, with the merchant market showing the same trend but higher operating margins of 4.4 percent in 2017, 14.5 percent in 2018, and 10.6 percent in 2019. Operating margins were lower in interim 2020 than in interim 2019 in both overall and merchant markets. In Honeywell's overall operations, operating profit ***; operating profit was lower (a loss) in interim 2020 compared to interim 2019 (table VI-1). The patterns of operating results primarily reflect the factors impacting financial results at the gross levels (i.e., highest operating profits in 2018 was the result of COGS declining more than net sales) in both overall and merchant market operations. In overall operations, Honeywell's interim 2020 operating *** (table VI-1). Operating margins in Honeywell's merchant market operations during interim 2020 was *** (table VI-3).

All other expenses and net income or loss

Honeywell ***. As a result, net incomes are the same as operating incomes in both overall and merchant markets.

Variance analyses

Variance analyses of overall and merchant market operations are presented in tables VI-5 and VI-6.[15] The information for these variance analyses are derived from tables VI-1 (overall operations) and VI-3 (merchant market).

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[14] ***. Email from Counsel for Honeywell, February 9, 2021, p. 6.

[15] The Commission's variance analysis is calculated in three parts: sales variance, cost of sales variance (COGS variance), and SG&A expense variance. Each part consists of a price variance (in the case

(*continued*...)

Table VI-5
R-125: Variance analysis on the overall operations of U.S. producer Honeywell, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			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 (at the operating income level) as:				
Price variance	***	***	***	***
Net cost/expense variance	***	***	***	***
Net volume variance	***	***	***	***

Note.--Unfavorable variances are shown in parentheses and in red.

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

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of the sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense 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. 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 expense variances. The overall volume component of the variance analysis is generally small. As noted in the *Net Sales* section above, differences in R-125 product mix are primarily limited to the type of packaging based on customer order size and accessibility. Since the shares of total R-125 sales accounted for by the subcategories of revenue varied somewhat during the period, it appears reasonable to assume that effective product mix also varied. While the Commission's variance analysis is generally more meaningful when product mix and/or customer mix remains the same throughout the period, implied changes in R-125 product mix do not appear substantial enough to undermine the utility of the variance analysis.

Table VI-6
R-125: Variance analysis on the merchant market operations (commercial sales and swaps combined) of U.S. producer Honeywell, 2017-19, January-September 2019, and January-September 2020

Item	Calendar year			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 (at the operating income level) as:				
Price variance	***	***	***	***
Net cost/expense variance	***	***	***	***
Net volume variance	***	***	***	***

Note.--Unfavorable variances are shown in parentheses and in red.

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

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

Table VI-7 presents Honeywell's capital expenditures and research and development ("R&D") expenses, assets, and return on assets ("ROA"). Table VI-8 provides the producer's narrative responses regarding the nature and focus of its capital expenditures and substantial changes in assets.

Table VI-7
R-125: Capital expenditures and R&D expenses, total net assets, and operating ROA of U.S. producer Honeywell, 2017-19, January to September 2019, and January to September 2020

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

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

Table VI-8
R-125: Narrative responses of Honeywell's capital expenditures, R&D expenses, and assets since January 1, 2017

Narrative
Nature and focus of capital expenditures
***
Nature and focus of R&D expenses
***
Substantial changes in net assets
***

Source: Compiled from data submitted in response to Commission questionnaire and email from Counsel for Honeywell, February 9, 2021.

Capital and investment

The Commission requested the U.S. producer of R-125 to describe any actual or potential negative effects of imports of R-125 from China on its growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-9 presents Honeywell's reported actual and anticipated negative impact in each category and table VI-10 provides the its narrative responses.

Table VI-9
R-125: Actual and anticipated negative effects of imports on investment, growth, and development of U.S. producer Honeywell, 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 questionnaire.

Table VI-10
R-125: Honeywell's narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2017

Narrative
Cancellation, postponement, or rejection of expansion projects:
***
Return on specific investments negatively impacted:
***
Other effects on growth and development:
***
Anticipated effects of imports:
***

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

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

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

The industry in China

The Commission issued foreign producers' or exporters' questionnaires to 17 firms believed to produce and/or export R-125 from China.[3] The Commission did not receive any questionnaire responses from foreign producers of R-125. An industry source lists *** known R-125 producers in China with a total annual R-125 production capacity of approximately *** short tons as of April 2020.[4] During the same time period, ***, ***, and *** are estimated to be the largest producers of R-125 in China with annual R-125 production capacity estimated at approximately *** short tons, *** short tons, and *** short tons respectively.

In 2019, total production of R-125 in China was approximately *** short tons while net exports were approximately *** short tons in the same year.[5] Consumption of R-125 in mainland China increased from approximately *** short tons in 2017 to *** short tons in 2018, and then decreased to *** short tons in 2019. China's consumption of R-125 is projected to reach approximately *** short tons in 2025, with an average annual growth rate of *** percent during 2019-2025.[6]

Exports

According to Global Trade Atlas ("GTA"), the leading export markets for fluorinated, brominated, or iodinated derivatives of acyclic hydrocarbons from China are the United States, Japan, and the Netherlands (table VII-1). During 2019, the United States was the top export market for fluorinated, brominated, or iodinated derivatives of acyclic hydrocarbons, including R-125, from China, accounting for 25.4 percent of the share of quantity, followed by the Japan, accounting for 7.0 percent.

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

[4] IHS Markit, *Chemical Economics Handbook, Fluorocarbons,* June 17, 2020, p. 111.

[5] IHS Markit, *Chemical Economics Handbook, Fluorocarbons*, June 17, 2020, p. 117.

[6] IHS Markit, *Chemical Economics Handbook, Fluorocarbons,* June 17, 2020, p. 124.

Table VII-1
Fluorinated, brominated, or iodinated derivatives of acyclic hydrocarbons: China exports by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Quantity (short tons)		
United States	65,437	74,571	73,245
Japan	19,169	20,551	20,177
Netherlands	32,063	34,476	16,405
Brazil	8,985	9,719	15,634
Korea	15,006	16,235	15,218
Thailand	9,346	9,686	13,602
India	6,635	9,083	9,180
Turkey	6,833	7,710	9,013
Mexico	7,339	8,333	8,277
All other destination markets	90,375	97,562	108,165
All destination markets	261,188	287,927	288,916
	Value (1,000 dollars)		
United States	300,815	361,196	266,881
Japan	83,037	99,758	92,857
Netherlands	201,946	235,795	104,283
Brazil	30,356	38,412	47,041
Korea	65,682	79,393	86,260
Thailand	26,863	32,611	38,105
India	28,834	39,647	29,845
Turkey	18,317	26,324	28,508
Mexico	18,602	26,653	25,222
All other destination markets	320,368	428,864	401,956
All destination markets	1,094,819	1,368,654	1,120,958
	Unit value (dollars per short ton)		
United States	4,597	4,844	3,644
Japan	4,332	4,854	4,602
Netherlands	6,298	6,839	6,357
Brazil	3,379	3,952	3,009
Korea	4,377	4,890	5,668
Thailand	2,874	3,367	2,802
India	4,346	4,365	3,251
Turkey	2,681	3,414	3,163
Mexico	2,535	3,198	3,047
All other destination markets	3,545	4,396	3,716
All destination markets	4,192	4,753	3,880

Table continued on next page.

Table VII-1—Continued
Fluorinated, brominated, or iodinated derivatives of acyclic hydrocarbons: China exports by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Share of quantity (percent)		
United States	25.1	25.9	25.4
Japan	7.3	7.1	7.0
Netherlands	12.3	12.0	5.7
Brazil	3.4	3.4	5.4
Korea	5.7	5.6	5.3
Thailand	3.6	3.4	4.7
India	2.5	3.2	3.2
Turkey	2.6	2.7	3.1
Mexico	2.8	2.9	2.9
All other destination markets	34.6	33.9	37.4
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. The United States is shown at the top, all remaining top export destinations are shown in descending order of 2019 data. HS subheading 2903.39 contain product outside the scope of this proceeding and therefore may overstate the volume of exports of subject merchandise.

Source: Official exports statistics under HS subheading 2903.39 as reported by China Customs in the Global Trade Atlas database, accessed February 2, 2021.

U.S. inventories of imported merchandise

Table VII-2 presents data on U.S. importers' reported inventories of R-125. Inventories of R-125 increased by 197.7 percent during 2017-18, before decreasing by *** percent during 2018-19, ending *** percent lower in 2019 than 2017. *** out of 15 importers reported end-of-period inventories in at least one year during 2017-19, with the largest reported by ***, which accounted for *** percent of reported inventories in 2018. Inventories were *** percent lower in Jan-Sept 2020 than in Jan-Sept 2019.

Table VII-2
R-125: U.S. importers' end-of-period inventories by import source, 2017-19, January to September 2019, and January to September 2020

Item	Calendar year			January to September	
	2017	2018	2019	2019	2020
	Inventories (short tons); Ratios (percent)				
Imports from China					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources:					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources:					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

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

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

U.S. importers' outstanding orders

The Commission requested U.S. importers to indicate whether they imported or arranged for the importation of R-125 from China after September 30, 2020. *** of twelve responding firms indicated they imported or arranged for the importation of R-125 from China after September 30, 2020.

Table VII-3
R-125: Arranged imports, October 2020 through September 2021

Item	Period				
	Oct-Dec 2020	Jan-Mar 2021	Apr-Jun 2021	Jul-Sept 2021	Total
	Quantity (short tons)				
Arranged U.S. imports from.--					
China	***	***	***	***	***
All other sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Antidumping or countervailing duty orders in third-country markets

There are no known antidumping or countervailing duty orders on R-125 in third-country markets.

Information on nonsubject countries

The global R-125 industry is relatively concentrated. Outside of the United States, there are only a few countries where companies produce R-125: China, India, Japan, Russia, and South Korea. Table VII-4 presents information on nonsubject producers of R-125. Among the nonsubject countries, only *** recently increased capacity. *** began producing R-125 in *** and ***.[7] Halopolymer started producing R-125 in Russia in 2020, although volume information is not available.[8] Of the three producers in Japan, ***. The other *** plants that are capable of making R-125.[9] As a developed country under the Kigali Amendment, Japan was required to start reducing its production and use of HFCs in 2019.[10] There is one identified R-125 producer in South Korea: Foosung Co., Ltd.[11]

[7] The information available is for the product group and does not provide a breakout by product. IHS Markit, *Chemical Economics Handbook, Fluorocarbons,* June 17, 2020, p. 105. SRF Limited, Fluorochemicals, https://www.srf.com/our-businesses/fluorochemicals.html (accessed January 11, 2021).

[8] Halopolymer, HFCs, https://halopolymer.com/product/khladony-i-gazy/refrigerants/hfc/ (accessed February 18, 2021). IHS Markit, *Chemical Economics Handbook, Fluorocarbons,* June 17, 2020, p. 100.

[9] IHS Markit, *Chemical Economics Handbook, Fluorocarbons,* June 17, 2020, pp. 131-134, 136.

[10] United Nations Treaty Collection, Environment, 2. f Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-2-f&chapter=27&clang=_en#3 (accessed February 18, 2021). United Nations Environment Economy Division, "The Kigali Amendment to the Montreal Protocol: HFC Phasedown," https://multimedia.3m.com/mws/media/1365924O/unep-fact-sheet-kigali-amendment-to-mp.pdf (accessed January 25, 2021).

[11] Foosung Co., Ltd., Refrigerants, http://www.foosungchem.com/eng/pro/product_ref_view03_2.asp (accessed February 18, 2021).

Table VII-4
R-125: Nonsubject producers, estimated production capacity in 2020 and production in 2019, by country

	Production capacity (2020)	Production (2019)
	Quantity (short tons)	
India	***	***
Japan	***	***
Russia	***	***
South Korea	***	***

Source: IHS Markit, *Chemical Economics Handbook, Fluorocarbons,* June 17, 2020, pp. 100, 105, 131-136.

Table VII-5 presents data on global exporters of fluorinated, brominated or iodinated derivatives of acyclic hydrocarbons, a basket category including R-125. The largest global exporter is China, with a 60.2 percent share of quantity in 2019, followed by the United States with a share of 12.7 percent, the Netherlands with a share of 7.3, and Japan with a share of 3.6 percent.

Table VII-5
Fluorinated, brominated or iodinated derivatives of acyclic hydrocarbons: Global exports by exporter, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Quantity (short tons)		
United States	95,200	73,178	61,087
China	261,165	287,927	288,916
Netherlands	38,714	38,761	35,160
Japan	16,669	17,053	17,129
United Kingdom	15,310	15,455	12,934
Germany	13,615	12,375	10,307
India	12,530	8,537	9,990
France	13,588	10,111	9,653
Belgium	8,225	7,765	8,944
Italy	4,413	4,031	3,965
United Arab Emirates	3,366	3,079	3,622
Singapore	3,369	2,792	2,880
All other exporters	16,676	24,421	15,041
All reporting exporters	502,840	505,485	479,630

Table continued on next page.

Table VII-5—Continued
Fluorinated, brominated or iodinated derivatives of acyclic hydrocarbons: Global exports by exporter, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	640,054	767,235	796,867
China	1,094,221	1,368,654	1,120,958
Netherlands	712,082	875,570	676,402
Japan	278,261	268,017	264,261
United Kingdom	105,958	133,528	98,322
Germany	110,544	149,526	108,234
India	55,647	54,215	60,443
France	85,189	77,963	76,467
Belgium	50,246	59,309	62,485
Italy	35,647	61,182	55,688
United Arab Emirates	12,628	13,392	14,010
Singapore	18,434	18,200	25,976
All other exporters	128,015	210,375	211,723
All reporting exporters	3,326,926	4,057,165	3,571,838
	Unit value (dollars per short ton)		
United States	6,723	10,484	13,045
China	4,190	4,753	3,880
Netherlands	18,394	22,589	19,238
Japan	16,693	15,717	15,428
United Kingdom	6,921	8,640	7,602
Germany	8,120	12,083	10,501
India	4,441	6,350	6,050
France	6,269	7,711	7,921
Belgium	6,109	7,638	6,987
Italy	8,078	15,178	14,046
United Arab Emirates	3,752	4,349	3,868
Singapore	5,471	6,519	9,018
All other exporters	7,676	8,614	14,076
All reporting exporters	6,616	8,026	7,447

Table continued on next page.

Table VII-5—Continued
Fluorinated, brominated or iodinated derivatives of acyclic hydrocarbons: Global exports by exporter, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Share of quantity (percent)		
United States	18.9	14.5	12.7
China	51.9	57.0	60.2
Netherlands	7.7	7.7	7.3
Japan	3.3	3.4	3.6
United Kingdom	3.0	3.1	2.7
Germany	2.7	2.4	2.1
India	2.5	1.7	2.1
France	2.7	2.0	2.0
Belgium	1.6	1.5	1.9
Italy	0.9	0.8	0.8
United Arab Emirates	0.7	0.6	0.8
Singapore	0.7	0.6	0.6
All other exporters	3.3	4.8	3.1
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. The United States is shown at the top, all remaining top export destinations are shown in descending order of 2019 data. HS subheading 2903.39 contain product outside the scope of this investigation and therefore may overstate the volume of exports of subject merchandise.

Source: Official exports statistics under HS subheading 2903.39 reported by various national statistical authorities in the Global Trade Atlas database, accessed February 2, 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 5247, January 19, 2021	*R-125 (Pentafluoroethane) From China; Institution of Anti-Dumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-01-19/pdf/2021-01055.pdf
86 FR 8583, February 08, 2021	*Pentafluoroethane (R-125) From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2021-02-08/pdf/2021-02529.pdf
86 FR 8589, February 08, 2021	*Pentafluoroethane (R-125) From the People's Republic of China: Initiation of Countervailing Duty Investigation*	https://www.govinfo.gov/content/pkg/FR-2021-02-08/pdf/2021-02530.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: R-125 (Pentafluoroethane) from China

Inv. Nos.: 701-TA-662 and 731-TA-1554 (Preliminary)

Date and Time: February 2, 2021 - 9:30 a.m.

OPENING REMARKS:

In Support of Imposition (**Daniel Cannistra**, Crowell & Moring LLP)
In Opposition to Imposition (**Jarrod Goldfeder**, Trade Pacific PLLC)

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

Crowell & Moring LLP
Washington, DC
on behalf of

Honeywell Inc.

Jessica Wood, General Manager Global Stationary Channel,
Honeywell Inc.

Chris LaPietra, VPGM Honeywell Refrigerants, Honeywell Inc.

Tom Morris, Director of Commercial Development, Honeywell Inc.

Daniel Cannistra) – OF COUNSEL

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

Trade Pacific PLLC
Washington, DC
on behalf of

National Refrigerants, Inc.

Jarrod Goldfeder)
) – OF COUNSEL
Jon Freed)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Daniel Cannistra**, Crowell & Moring LLP)
In Opposition to Imposition (**Jarrod Goldfeder**, Trade Pacific PLLC)

-END-

APPENDIX C

SUMMARY DATA

Table C-1: R-125: Summary data concerning the U.S. total market C-3
Table C-2: R-125: Summary data concerning the U.S. merchant market C-5

Total market

Table C-1

R-125: Summary data concerning the U.S. total market, 2017-19, January to September 2019, and January to September 202(

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

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. total market consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. total market consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. importers' U.S. shipments of imports from:									
China:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
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':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	▲***	▼***	▲***	▼***
Capacity utilization (fn1)	***	***	***	***	***	▲***	▼***	▲***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Value	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	***	***
Value	***	***	***	***	***	▼***	▼***	***	***
Unit value	***	***	***	***	***	▼***	▼***	***	***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Inventories/total shipments (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***
Production workers	***	***	***	***	***	▼***	▼***	▼***	***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▼***	***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▲***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▲***
Productivity (short tons per 1,000 hours)	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit labor costs	***	***	***	***	***	▼***	▼***	▼***	▲***

Table continued on next page.

Table C-1--Continued

R-125: Summary data concerning the U.S. total market, 2017-19, January to September 2019, and January to September 202(

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

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. producers'--Continued:									
Net sales:									
Quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Value	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▲***	▲***
Gross profit or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▲***
Operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Capital expenditures	***	***	***	***	***	▲***	▲***	▼***	▲***
Research and development expenses	***	***	***	***	***	***	***	***	***
Net assets	***	***	***	***	***	▲***	▲***	▲***	***
Unit COGS	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
COGS/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***

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

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

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

Merchant market (commercial and swap sales)

Table C-2

R-125: Summary data concerning the U.S. merchant market, 2017-19, January to September 2019, and January to September 202(

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

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. merchant market consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. merchant market consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. importers' U.S. shipments of imports from:									
China:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
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':									
Commercial U.S. shipments and swaps:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▼***
Commercial and swap sales:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▲***	▼***	▲***	▲***
Gross profit or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▲***
Operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit COGS	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
COGS/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***

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

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

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

APPENDIX D

PURE R-125 VS. IN-SCOPE BLENDS WITH R-125

Table D-1
R-125: U.S. producers' and U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Factor	U.S. producers				U.S. importers			
	F	M	S	N	F	M	S	N
	Count of firms							
Pure R-125 vs in-scope blends with R-125.-- Physical characteristics	***	***	***	***	---	2	2	7
Interchangeability	***	***	***	***	---	---	2	9
Channels	***	***	***	***	---	1	6	2
Manufacturing	***	***	***	***	---	2	---	4
Perceptions	***	***	***	***	---	3	2	4
Price	***	***	***	***	---	2	6	3

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

Table D-2
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Physical characteristics	
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Physical characteristics	
***	***
***	***
***	***
***	***
***	***
***	***
U.S. importers: Interchangeability	
***	***
***	***
***	***

Table continued on next page.

Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Interchangeability	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Channels	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

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Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Manufacturing	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Manufacturing	
***	***
***	***
***	***
***	***
***	***
U.S. importers: Perceptions	
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Perceptions	
***	***
***	***
***	***
***	***
***	***
***	***
U.S. importers: Price	
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2—Continued
R-125: U.S. importers' comparisons of pure R-125 vs. in-scope blends with R-125

Item / Firm	Narrative
U.S. importers: Price	
***	***
***	***
***	***
***	***
***	***
***	***

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

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