Alkyl Phosphate Esters from China

Investigation Nos. 701-TA-721 and 731-TA-1689 (Preliminary)

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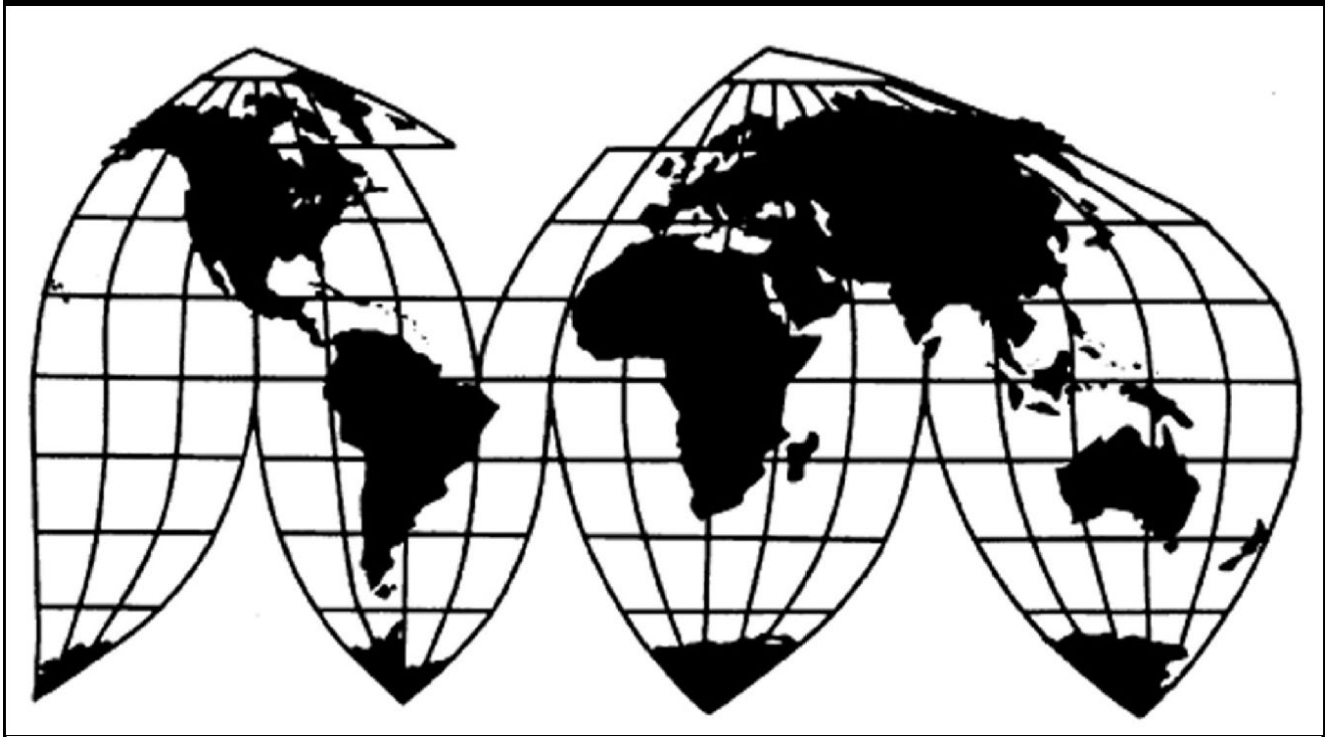
U.S. International Trade Commission



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U.S. International Trade Commission

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Appendixes

Note.—Information that would reveal confidential operations of individual concerns may not be published.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-721 and 731-TA-1689 (Preliminary)

Alkyl Phosphate Esters 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 alkyl phosphate esters from China, provided for in subheading 2919.90.50 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 imports of the subject merchandise from China that are alleged 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. Any other party may file an entry of appearance for the final phase of the investigations after publication of the final phase notice of scheduling. 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

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

[2] 89 FR 43801 and 89 FR 43821 (May 20, 2024).

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. As provided in section 207.20 of the Commission's rules, the Director of the Office of Investigations will circulate draft questionnaires for the final phase of the investigations to parties to the investigations, placing copies on the Commission's Electronic Document Information System (EDIS, https://edis.usitc.gov), for comment.

BACKGROUND

On April 23, 2024, ICL-IP America, Inc., St. Louis, Missouri 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 alkyl phosphate esters from China and LTFV imports of alkyl phosphate esters from China. Accordingly, effective April 23, 2024, the Commission instituted countervailing duty investigation No. 701-TA-721 and antidumping duty investigation No. 731-TA-1689 (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 April 30, 2024 (89 FR 34270). The Commission conducted its conference on May 14, 2024. 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 certain alkyl phosphate esters ("CAPEs") from China that are allegedly sold in the United States at less than fair value and 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

ICL-IP America, Inc. ("ICL" or "petitioner"), a domestic producer of CAPEs, filed the petitions in these investigations on April 23, 2024.[3] ICL appeared at the staff conference accompanied by counsel and filed a postconference brief.[4]

Two respondent entities participated in these investigations. FCI USA Inc. ("FCI"), a U.S. importer of subject merchandise, appeared at the staff conference and filed a postconference brief.[5] Eastman Chemical Co. ("Eastman"), a U.S. importer of subject merchandise, did not participate in the staff conference but filed a postconference brief.[6]

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[1] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001–04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States*, 20 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*, 785 F.2d at 1001; *see also Texas Crushed Stone Co. v. United States*, 35 F.3d 1535, 1543 (Fed. Cir. 1994).

[3] Confidential Staff Report, Memorandum INV-WW-054 (May 31, 2024) ("CR") at I-1; Public Report, *Alkyl Phosphate Esters from China*, Inv. Nos. 701-TA-721 and 731-TA-1689 (Preliminary), USITC Pub. 5516 (June 2024) ("PR") at I-1. As used in these Views, "CAPEs" refers collectively to the products covered by the scope of these investigations, as set out below in section III.

[4] ICL Corrected Post-conference Brief (May 17, 2024) ("ICL Postconf. Br.").

[5] FCI Post Hearing Brief (May 17, 2024) ("FCI Postconf. Br.").

[6] Eastman Post-conference Brief (May 17, 2024) ("Eastman Postconf. Br.").

Data Coverage. U.S. industry data are based on the questionnaire responses of two producers, ICL and Lanxess Corporation ("Lanxess"), which accounted for *** U.S. production of CAPEs in 2023.[7] U.S. imports are based on official U.S. import statistics of the U.S. Department of Commerce ("Commerce") Census Bureau for primary statistical reporting number 2919.90.5050 of the Harmonized Tariff Schedule of the United States ("HTS") and adjusted to include imports entered under other HTS numbers as reported in Commission questionnaire responses from 12 U.S. importers, which accounted for an estimated *** percent of subject imports.[8] The Commission received responses to its questionnaires from three producers of subject merchandise in China, who estimated that they accounted for *** percent of the production of subject merchandise in China in 2023.[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 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]

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[7] CR/PR at I-4, III-1.

[8] CR/PR at I-4, IV-1, Table IV-2. These statistics may include out-of-scope products. As noted in the scope of these investigations, CAPEs are classifiable in HTS subheading 2919.90.5050 and may also be classifiable in subheadings 2919.90.5010 and 3824.99.5000. *Certain Alkyl Phosphate Esters From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*, 89 Fed. Reg. 43801, 43806 (May 20, 2024); *Certain Alkyl Phosphate Esters from the People's Republic of China: Initiation of Countervailing Duty Investigation*, 89 Fed. Reg. 43821, 43825 (May 20, 2024).

[9] CR/PR at VII-3.

[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).

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 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]

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

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[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).

[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*, 747 F. Supp. at 749 n.3 ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon Steel*, 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 Steel*, 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-895–896 (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).

{A}lkyl phosphate esters, which are halogenated and non-halogenated phosphorus-based esters with a phosphorus content of at least 6.5 percent (per weight) and a viscosity between 1 and 2000 mPa.s (at 20–25 °C).

Merchandise subject to this investigation primarily includes Tris (2-chloroisopropyl) phosphate (TCPP), Tris (1,3-dichloroisopropyl) phosphate (TDCP), and Triethyl Phosphate (TEP).

TCPP is also known as Tris (1-chloro-2-propyl) phosphate, Tris (1-chloropropan-2-yl) phosphate, Tris (monochloroisopropyl) phosphate (TMCP), and Tris (2-chloroisopropyl) phosphate (TCIP). TCPP has the chemical formula $C_9H_{18}Cl_3O_4P$ and the Chemical Abstracts Service (CAS) Nos. 1244733-77-4 and 13674-84-5. It may also be identified as CAS No. 6145-73-9.

TDCP is also known as Tris (1,3-dichloroisopropyl) phosphate, Tris (1,3-dichloro-2-propyl) phosphate, Chlorinated tris, tris {2-chloro-1-(chloromethyl ethyl)} phosphate, TDCPP, and TDCIPP. TDCP has the chemical formula $C_9H_{15}Cl_6O_4P$ and the CAS No. 13674-87-8.

TEP is also known as Phosphoric acid triethyl ester, phosphoric ester, flame retardant TEP, Tris(ethyl) phosphate, Triethoxyphosphine oxide, and Ethyl phosphate (neutral). TEP has the chemical formula $(C_2H_5O)_3PO$ and the CAS No. 78-40-0.

Imported alkyl phosphate esters are not excluded from the scope of this investigation even if the imported alkyl phosphate ester consists of a single isomer or combination of isomers in proportions different from the isomers ordinarily provided in the market.

Also included in this investigation are blends including one or more alkyl phosphate esters, with or without other substances, where the alkyl phosphate esters account for 20 percent or more of the blend by weight.

Alkyl phosphate esters are classified under subheading 2919.90.5050, Harmonized Tariff Schedule of the United States (HTSUS). Imports may also be classified under subheadings 2919.90.5010 and 3824.99.5000, HTSUS. The HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes. The written description of the scope is dispositive.[20]

CAPEs are clear, colorless liquids that are chemically similar and primarily used as flame retardants in rigid and flexible polyurethane foam applications.[21] At the chemical core of each is a phosphate ion; TCPP and TDCP also contain chlorine, while TEP does not.[22] TDCP has the highest viscosity of the three, and as a result, TCPP and TEP are more easily blended with other materials.[23]

[20] 89 Fed. Reg. at 43806; 89 Fed. Reg. at 43825.

[21] Conference transcript ("Tr.") at 5 (Alves) 9 (Symes), 20 (Laufer).

[22] Tr. at 20 (Laufer).

[23] Petition at 8, 9; Eastman Postconf. Br. at 1.

CAPEs have several end uses, including as flame retardants in a variety of resins and chemicals, as additives in home furnishings for textile waterproofing and finishing, in various rubber products, in emulsifiers and lubricants and anti-wear additives, as plasticizers, and as solvents.[24] They may either be used as standalone components or blended to achieve the properties required.[25] The most frequent use of CAPEs is in foam insulation in commercial and residential construction, which is manufactured from flammable petrochemicals and, accordingly, requires flame retardants.[26]

CAPEs retard fire by two mechanisms. One mechanism, common to all three named CAPEs, is the formation of a protective char layer that prevents further spread of the flame.[27] The other is the scavenging of oxygen by the chlorine in TCPP and TDCP.[28] Because TEP does not contain chlorine, this second mechanism of flame retardation is not available to materials that contain only TEP. As a result, more TEP is required to achieve an equivalent level of flame retardancy.[29] TCPP is the most widely used of the three named CAPEs in the U.S. market, largely due to its cost effectiveness.[30]

A. Arguments of the Parties

Petitioner's Arguments. ICL argues that the Commission should define a single domestic like product coextensive with the scope of these investigations.[31] It contends that the three named CAPEs have similar characteristics and uses, and are interchangeable "for some applications."[32] ICL also maintains that all domestically produced CAPEs are sold primarily to end users; are perceived by some market participants as flame-retardant alkyl phosphate esters belonging to the "same HTS family"; share common production equipment, employees, and processes; and are priced within the same range.[33]

[24] Petition at 12.

[25] Tr. at 21 (Laufer), 64 (Symes). FCI contends that TEP cannot be used as a standalone flame retardant. FCI Postconf. Br. at 3.

[26] Tr. at 10, 12 (Symes).

[27] Petition at 8.

[28] Tr. at 49 (Symes).

[29] Tr. at 11 (Symes).

[30] Tr. at 11 (Symes).

[31] ICL Postconf. Br. at 4.

[32] ICL Postconf. Br. at 8–10, 11–13.

[33] ICL Postconf. Br. at 6–7, 11, 13–15.

Respondents' Arguments. Eastman argues that TEP should be defined as a separate like product from TCPP and TDCP.[34] It maintains that the absence of chlorine and greater content of phosphorus in TEP's molecular structure makes TEP more expensive and less effective as a flame retardant than TCPP and TDCP.[35] Eastman states there is "no evidence of end users moving between TEP and TCPP or TDCP" and "no support for the proposition that TEP is functionally viewed as an interchangeable alternative to TCPP and TDCP."[36] Eastman argues that TEP is not used in automotive applications, and that there are accordingly "clear customer and producer perceptions with respect to differences between TEP and TCPP/TDCP."[37] It asserts that TEP production results in an acid by-product that necessitates the use of equipment and manufacturing processes different from TCPP and TDCP.[38] Eastman maintains that the price for TEP is "substantially higher" than for TCPP or TDCP.[39]

B. Analysis

As an initial matter, we do not define a separate domestic like product corresponding to TEP, as advocated by Eastman. Only those articles domestically produced may be defined as a separate domestic like product.[40] Eastman and the petitioner agree that there is no domestic

[34] FCI argues for each of the three named CAPEs to be defined as separate like products based on physical characteristics and uses. FCI Postconf. Answers at 1, 2–3. It comments further on TCPP and TDCP with regard to interchangeability, customer perceptions, and common production processes. *Id.* at 1–2. It does not offer arguments on channels of distribution, common manufacturing facilities and production employees, or price. ***. FCI Importer Q. at II-5a, II-5c.

[35] Eastman's Postconf. Br. at 3. Eastman states that ***. *Id.* at 3–4.

[36] Eastman's Postconf. Br. at 4–5. Eastman's discussion of channels of distribution focuses on ***. *Id.* at 5.

[37] Eastman's Postconf. Br. at 5–6.

[38] Eastman's Postconf. Br. at 6–7, exh. 1 para. 4.

[39] Eastman's Postconf. Br. at 7.

[40] *See, e.g., Cold-Drawn Mechanical Tubing from China and India*, Inv. Nos. 701-TA-576–577 (Final), USITC Pub. 4755 (Jan. 2018) at 13–15; *Certain Lined Paper School Supplies from China, India, and Indonesia*, Inv. Nos. 701-TA-442–443 and 731-TA-1095–1097 (Preliminary), USITC Pub. 3811 (Oct. 2005) at 12 n.50; *Extruded Rubber Thread from Malaysia*, Inv. No. 753-TA-34, USITC Pub. 3112 (June 1998) at 5 n.14; *Certain Cold-Rolled Steel Products from Australia, India, Japan, Sweden, and Thailand*, Inv. Nos. 731-TA-965, 971 to 972, 979, and 981 (Final), USITC Pub. 3536 (Sept. 2001) at 10 n.30; *see also Large Residential Washers from China*, Inv. No. 731-TA-1306 (Preliminary), USITC Pub. 4591 (Feb. 2016) at 10. When emphasizing the statute's mandate to identify a domestic item that is like or most similar to subject imports, 19 U.S.C. § 1677(10), the Commission has reasoned that defining a domestic like product that is not produced domestically would ignore this mandate and contradict the statute. *Certain Aluminum Extrusions from China*, Inv. Nos. 701-TA-475 and 731-TA-1177 (Review), USITC Pub. 4677 (March 2017) at 12–14.

production of TEP.[41] In the absence of domestic production of TEP, the product is not capable of examination under the Commission's domestic like product analysis, which entails comparison of products that are in fact domestically produced.[42] Instead, where the scope includes an article not produced domestically, the Commission must define a domestic like product to include the domestically produced article "most similar" to the imported TEP within the scope of the investigations.[43]

The domestically produced article most similar to imported TEP would be domestically produced CAPEs—TCPP and TDCP. TCPP and TDCP possess characteristics and uses most similar to those of imported TEP in that at the core of each compound is a phosphate ion and all possess flame-retardant properties, and are used as flame retardants, by virtue of their phosphorus content.[44] No party has alleged that there are any other products more like imported TEP.

Based on the following analysis, we define a single domestic like product consisting of TCPP and TDCP.

Physical Characteristics and Uses. As noted above, TCPP and TDCP share similar physical characteristics in that they both contain phosphorus and chlorine.[45] They also have overlapping end uses, including as standalone flame retardants.[46] Petitioners and importers agree that TCPP and TDCP are alike insofar as they both have flame-retardant properties involving the formation of a protective char layer that prevents further spread of the flame and the scavenging of oxygen by the chlorine each contains.[47] They further agree, however, that chemical differences between them impart somewhat different physical characteristics, particularly with regard to viscosity, that can restrict their use in specific applications.[48] Both domestic producers and a majority of U.S. importers reported that, when comparing their physical characteristics and uses, TCPP and TDCP are mostly or somewhat comparable.[49]

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[41] Tr. at 22 (Laufer); Eastman Postconf. Br. at 1, 4, 7; *see also* CR/PR at I-7. TCPP and TDCP are manufactured domestically. CR/PR at III-8. *See also* ICL Postconf. Br. at 16.

[42] 19 U.S.C. § 1677(4); *see also Mattresses from Cambodia, China, Indonesia, Malaysia, Serbia, Thailand, Turkey, and Vietnam*, Inv. Nos. 701-TA-645 and 731-TA-1495–1501 (Final), USITC Pub. 5191 (May 2021) at 12; *Large Residential Washers from China*, Inv. No. 731-TA-1306 (Preliminary), USITC Pub. 4591 (Feb. 2016) at 10.

[43] 19 U.S.C. § 1677(10).

[44] CR/PR at I-6, I-8.

[45] CR/PR at I-6, I-8.

[46] CR/PR at I-6, I-8.

[47] CR/PR at I-8, Tables D-1, D-2.

[48] CR/PR at Tables D-1, D-2. *See also id.* at I-6–I-7.

[49] CR/PR at Table I-2.

Manufacturing Facilities, Production Processes, and Employees. Both TCPP and TDCP are produced through chemical reactions and then are washed and dehydrated to remove impurities and any residual catalyst.[50] Petitioner reported that it has two reactor vessels that can be used to produce either TCPP or TDCP.[51] Both domestic producers and the majority of U.S. importers reported that TCPP and TDCP are fully or mostly comparable with respect to their manufacturing facilities, production processes, and employees.[52]

Channels of Distribution. The record indicates that nearly all domestically produced and imported CAPEs are sold to end users.[53] *** and the vast majority of U.S. importers reported that TCPP and TDCP are fully, mostly, or somewhat comparable with regard to their channels of distribution.[54]

Interchangeability. Both domestic producers stated that ***.[55] Importer St. Louis Group stated that ***.[56] Importer M Chemical stated that ***.[57] Both domestic producers and one-half of importers reported that TCPP and TDCP are mostly or somewhat interchangeable.[58]

Producer and Customer Perceptions. The domestic producers stated that TCPP and TDCP are ***.[59] Importer FCI stated that *** and that ***.[60] Both domestic producers and the majority of U.S. importers reported that TCPP and TDCP are fully, mostly, or somewhat comparable with respect to customer and producer perceptions.[61]

Price. The pricing data indicate that TCPP (Pricing Product 1) was priced lower than TDCP (Pricing Product 2) at the beginning of the period of investigation (POI), then increased steadily in price through the first quarter of 2022, when TCPP was priced higher than TDCP.[62] TCPP then declined steadily in price and was priced lower than TDCP during the remainder of the POI.[63] U.S. shipment data for U.S. producers show higher average unit values ("AUVs") for

[50] CR/PR at I-10.

[51] CR/PR at I-10.

[52] CR/PR at Table I-2. Importer *** stated that ***. *Id.* at Table D-2.

[53] CR/PR at Table II-1 (indicating that CAPEs have been sold to end users in excess of *** percent in each year of the POI).

[54] CR/PR at Table I-2.

[55] CR/PR at Table D-1.

[56] CR/PR at Table D-2.

[57] CR/PR at Table D-2.

[58] CR/PR at Table I-2. The other half of U.S. importers reported that TCPP and TDCP are never interchangeable. *Id.*

[59] CR/PR at Table D-1.

[60] CR/PR at Table D-2.

[61] CR/PR at Table I-2.

[62] CR/PR at Tables V-4, V-5. Comparisons based on U.S. prices. *Id.*

[63] CR/PR at Tables V-4, V-5.

TDCP than TCPP throughout the POI.[64] One domestic producer and a majority of U.S. importers reported that TCPP and TDCP are mostly or somewhat comparable with regard to price.[65]

Conclusion. The record in the preliminary phase of these investigations indicates that the different chemical compositions of TCPP and TDCP impart somewhat different physical characteristics that may limit their interchangeability in particular applications. There also appear to be some differences between TCPP and TDCP with regard to price. However, these differences appear to be outweighed by their similar flame-retardant properties, common use in flame-retardant foams, and overlapping manufacturing facilities and production processes, channels of distribution, and producer and customer perceptions. Based on the preponderance of similarities between TCPP and TDCP in terms of the six like product factors, we define a single domestic like product consisting of all TCPP and TDCP within the scope of the investigations.[66]

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."[67] 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.

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

[64] CR/PR at Table III-9.

[65] CR/PR at Table I-2. One domestic producer ***. *Id.*

[66] Parties wishing to propose a different definition of the domestic like product in any final phase of these investigations should do so in their comments on the draft questionnaires for the final phase. We remind parties to identify in their comments any arguments that would implicate data collection, such as requests to define the domestic like product(s) in a different manner. *See, e.g.,* 19 C.F.R. § 207.20(b). Parties should clearly identify such products and explain the basis for the proposed separate domestic like product.

[67] 19 U.S.C. § 1677(4)(A).

or which are themselves importers.[68] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[69]

As explained further below, both domestic producers, ICL and Lanxess, are subject to possible exclusion under the related parties provision because each firm imported subject merchandise during the POI.[70] ICL argues that appropriate circumstances do not exist to exclude itself or Lanxess from the domestic industry.[71] FCI and Eastman make no arguments regarding the definition of the domestic industry. We examine below for each of the producers whether appropriate circumstances exist to exclude it from the domestic industry.

ICL. ICL accounted for *** percent of U.S. production of CAPEs in 2023 and is the petitioner in these investigations.[72] ICL imported subject merchandise ***.[73] The ratio of ICL's subject imports to its domestic production was ***.[74] ICL indicates that it imports CAPEs because it ***.

Given that ICL's ratio of subject imports to domestic production remained low throughout the POI, as well as its status as ***, its primary interest appears to be in domestic production. Further, the record does not indicate that ICL's domestic production operations

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[68] *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).

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

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

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

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

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

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

[70] CR/PR at Tables III-11, III-12. ***. *Id.* at III-11. ***. *See* Statement of Administrative Action for the Uruguay Round Agreements Act ("SAA"), H.R. Doc. 316, Vol. 1, 103 Cong., 2d Sess., at 858 (1994). ***. S*ee*, *e.g.*, *Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-248, 731-TA-262–263, 265 (Fourth Review), USITC Pub. 4655 (Dec. 2016) at ***; *Chlorinated Isocyanurates from China and Spain*, Inv. Nos. 731-TA-1082–1083 (Second Review), USITC Pub. 4646 (Nov. 2016) at ***. ***. CR/PR at III-11, Table IV-2.

[71] ICL Postconf. Br. at 16 & n.61.

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

[73] CR/PR at Table III-11.

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

benefited from its imports of subject merchandise such that its inclusion in the domestic industry may mask injury. In light of this, and in the absence of any contrary argument, we find that appropriate circumstances do not exist to exclude ICL from the domestic industry.

Lanxess. Lanxess accounted for *** percent of U.S. production of CAPEs in 2023.[75] It ***.[76] Lanxess imported subject merchandise ***.[77] The ratio of Lanxess's subject imports to its domestic production was ***.[78] Lanxess indicates that it imports CAPEs because it ***.[79]

Given that Lanxess's ratio of subject imports to domestic production remained low throughout the POI, its primary interest appears to be in domestic production. Further, the record does not indicate that Lanxess's domestic production operations benefited from its imports of subject merchandise such that its inclusion in the domestic industry may mask injury. In light of this, and in the absence of any contrary argument, we find that appropriate circumstances do not exist to exclude Lanxess from the domestic industry.

Accordingly, consistent with our definition of the domestic like product, we define the domestic industry to include all domestic producers of TCPP and TDCP.

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible.[80]

During the 12-month period preceding the filing of the petitions (April 2023 through March 2024), imports of CAPEs from China subject to both the antidumping and countervailing duty investigations accounted for *** percent of total imports.[81] As subject imports from China are above negligible levels, we find that imports of CAPEs from China subject to the antidumping and countervailing duty investigations are not negligible.

[75] CR/PR at Table III-1.
[76] CR/PR at Table III-1.
[77] CR/PR at Table III-12.
[78] CR/PR at Table III-12.
[79] CR/PR at Table III-13.
[80] 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)).
[81] CR/PR at Table IV-3. Import data are compiled from official U.S. import statistics using HTS statistical reporting number 2919.90.5050, adjusted based on data compiled from Commission questionnaire responses to account for CAPEs imported under other HTS statistical reporting numbers.

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

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[82] 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.[83] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[84] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[85] 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."[86]

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,[87] 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.[88] 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

[82] 19 U.S.C. §§ 1671b(a), 1673b(a).

[83] 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).

[84] 19 U.S.C. § 1677(7)(A).

[85] 19 U.S.C. § 1677(7)(C)(iii).

[86] 19 U.S.C. § 1677(7)(C)(iii).

[87] 19 U.S.C. §§ 1671b(a), 1673b(a).

[88] *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).

cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[89]

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.[90] In performing its examination, however, the Commission need not isolate

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

[90] 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.

the injury caused by other factors from injury caused by unfairly traded imports.[91] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[92] It is clear that the existence of injury caused by other factors does not compel a negative determination.[93]

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."[94] 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

[91] SAA at 851–52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor,* 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.").

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

[93] *See Nippon Steel*, 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.").

[94] *Mittal Steel*, 542 F.3d at 876, 878; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.") *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal Steel*.

sources to the subject imports." [95] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[96]

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.[97] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[98]

B. Conditions of Competition and the Business Cycle

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

1. Demand Conditions

Demand for CAPEs is driven by the demand for domestically produced downstream products incorporating CAPEs, which are primarily insulation products for use in construction applications.[99] As such, weather and the rate of new construction can affect demand.[100] Real value-added in the construction industry declined overall during the first two years of the POI, then recovered somewhat in 2023.[101] Both domestic producers and most importers reported that U.S. demand for CAPEs either increased or remained unchanged during the POI.[102]

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[95] *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.

[96] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* {*Bratsk Aluminum Smelter v. United States*, 444 F.3d 1369 (Fed. Cir. 2006)} did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

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

[98] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel*, 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.").

[99] CR/PR at I-8, II-1, II-5.

[100] CR/PR at II-5. The automotive and other sectors account for a small share of demand. *Id.*

[101] CR/PR at Figure II-1. In terms of 2017 chain dollars, real value-added declined from $892.0 billion in the first quarter of 2021 to $802.9 billion in the fourth quarter of 2022, then increased to $863.4 billion in the fourth quarter of 2023. *Id.* at Table II-4.

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

Apparent U.S. consumption decreased by *** percent over the POI, from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023.[103]

2. Supply Conditions

The domestic industry was the second-largest supplier of the U.S. market during the POI.[104] Its production capacity ***, but its production and capacity utilization declined from 2021 to 2023.[105] The domestic industry's share of apparent U.S. consumption declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[106]

Subject imports were the largest source of supply to the U.S. market during the POI, and their share of apparent U.S. consumption increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[107] Nonsubject imports consistently accounted for the smallest share of the U.S. market during the POI, increasing from *** percent of apparent U.S. consumption in 2021 to *** percent in 2022 before declining to *** percent in 2023.[108] The largest sources of nonsubject imports during the POI were Germany, India, and Switzerland.[109]

*** and five importers (***) reported that they had experienced supply constraints during the POI.[110] Importers reported difficulty in obtaining CAPEs from China during the COVID-19 pandemic due to logistics problems and the closure of Chinese production facilities.[111] When subject import supplies were limited from 2021 through the first quarter of 2022 due to the COVID-19 pandemic and supply chain disruptions, the domestic industry was operating at its highest rate of utilization of the POI and ***.[112] ICL reported that when subject imports began to increase in the second quarter of 2022, it experienced reduced orders.[113]

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[103] CR/PR at Tables IV-6, C-1.

[104] CR/PR at Table IV-6. As discussed earlier, the domestic industry did not produce TEP during the POI. *Id.* at Table III-9.

[105] The domestic industry's capacity was ***, but its production declined from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023, and its capacity utilization declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. CR/PR at Table III-6.

[106] CR/PR at Table IV-6.

[107] CR/PR at Tables IV-2, IV-6.

[108] The volume of nonsubject imports increased from *** metric tons in 2021 to *** metric tons in 2022, then decreased to *** metric tons in 2023. CR/PR at Table IV-2.

[109] CR/PR at IV-3 n.6.

[110] CR/PR at II-4.

[111] CR/PR at II-4.

[112] ***.

[113] Tr. at 24 (Laufer).

3. Substitutability and Other Conditions

The record indicates that there is generally a high degree of substitutability between the domestic like product and subject imports, but that COVID-19–related supply constraints in 2021 and the first quarter of 2022 reduced the degree of substitutability to some extent.[114] *** and the vast majority of importers reported that the domestic like product and imports from each subject country are always or frequently interchangeable.[115] There was substantial overlap in the types of CAPEs that both the domestic industry and importers sold in the U.S. market, with sales of TCPP accounting for the *** majority of their shipments during the POI. TCPP's share of the domestic industry's U.S. shipments was *** percent in 2021, *** percent in 2022, and *** percent in 2023, with TDCP accounting for the remainder.[116] Similarly, TCPP's share of U.S. importers' U.S. shipments of subject imports was *** percent in 2021, *** percent in 2022, and *** percent in 2023, with TDCP accounting for *** percent in 2021, *** percent in 2022, and *** percent in 2023 and TEP accounting for *** percent in 2021, *** percent in 2022, and *** percent in 2023.[117]

We find that price is an important factor in purchasing decisions for CAPEs, although other considerations are important as well. The factors most often cited by responding purchasers as among their top three purchasing factors for CAPEs were quality/meeting specifications/consistency (six firms), price (six firms), and availability/supply (five firms).[118] Price was most often cited as the third most important purchasing factor.[119] *** and a plurality of importers (four firms) described differences other than price between the domestic like product and subject imports as never significant, although a majority of importers described such differences as either always (three firms), frequently (two firms), or sometimes (one firm) significant.[120]

U.S. producers reported that *** percent of their commercial shipments were sold from inventory, with lead times averaging *** days.[121] U.S. importers reported that *** percent of their commercial shipments were sold from inventory, with lead times averaging *** days.[122]

[114] CR/PR at II-8–II-11; Tr. at 19–20 (Saunders).
[115] CR/PR at Tables II-7, II-8.
[116] CR/PR at Table III-9.
[117] CR/PR at Table IV-4.
[118] CR/PR at Table II-6.
[119] CR/PR at Table II-6.
[120] CR/PR at Tables II-9, II-10.
[121] CR/PR at II-9.
[122] CR/PR at II-9.

Another *** percent were produced to order, with lead times averaging *** days.[123] The remaining *** percent came from foreign inventories, with lead times averaging *** days.[124]

The principal raw materials used to produce CAPEs are propylene oxide, chloride, and phosphorous.[125] Propylene oxide costs fluctuated during the POI, with an overall increase of *** percent.[126] Chlorine costs more than tripled from mid-2021 to the end of 2022, and then decreased in 2023, for an overall increase of *** percent during the POI.[127] Raw material costs represent the largest component of the domestic industry's overall cost of goods sold ("COGS") during the POI, but declined as a share of total COGS from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[128]

Imports of CAPEs from China are subject to additional duties of 25 percent pursuant to section 301 of the Trade Act of 1974.[129]

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[130]

The volume of subject imports declined by *** percent from 2021 to 2022, decreasing from *** metric tons in 2021 to *** metric tons in 2022, then increased by *** percent in 2023, to *** metric tons; overall, subject import volume rose by *** percent from 2021 to 2023.[131]

Subject imports' market share rose throughout the POI. Subject imports' share of apparent U.S. consumption increased by *** percentage points from 2021 to 2023, from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[132] As a ratio to U.S. production, subject imports increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[133]

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[123] CR/PR at II-9.
[124] CR/PR at II-9.
[125] CR/PR at V-1.
[126] CR/PR at V-1.
[127] CR/PR at V-1.
[128] CR/PR at Table VI-1.
[129] 19 U.S.C. § 2411. *See generally* CR/PR at II-1. Six importers reported various reactions to the section 301 duties, including passing additional costs to customers. *Id.*
[130] 19 U.S.C. § 1677(7)(C)(i).
[131] CR/PR at Table C-1.
[132] CR/PR at IV-8, Table IV-6.
[133] CR/PR at Table IV-2.

Based on the record in the preliminary phase of these investigations, we find that the volume of subject imports and the increase in that volume are significant, in absolute terms and relative to U.S. consumption and production.

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.[134]

As explained above, we have found that there is generally a high degree of substitutability between the domestic like product and subject imports and that price is an important factor in purchasing decisions, among other important factors.[135]

The Commission collected quarterly pricing data from U.S. producers and importers for the total quantity and f.o.b. values of two pricing products shipped to unrelated U.S. customers during the POI.[136] *** and seven importers provided usable pricing data, although not all firms reported pricing data for all products for all quarters.[137] Pricing data reported by these firms accounted for *** percent of U.S. producers' reported U.S. commercial shipments of CAPEs and *** percent of U.S. commercial shipments of subject imports from China in 2023.[138]

Subject imports undersold the domestic like product in 8 of 24 quarterly comparisons (33 percent of comparisons), at margins ranging from *** to *** percent and averaging ***

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[134] 19 U.S.C. § 1677(7)(C)(ii).

[135] *See* section VI.B.3., *supra*.

[136] The two pricing products are as follows:

> **Product 1.**-- Tris (2-chloroisopropyl) phosphate (TCPP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.
> **Product 2.**-- Tris (1,3-dichloroisopropyl) phosphate (TDCP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

CR/PR at V-5.

[137] Although data from importer ***, ***, are included in our pricing product data, we note that it provided data ***. Its prices were ***. CR/PR at V-6 n.6. Thus, the *** did not impact the Commission's finding of predominant underselling in 2022 and 2023.

[138] CR/PR at V-5–V-6.

percent.[139] Subject imports oversold the domestic like product in 16 of 24 quarterly comparisons (67 percent of comparisons), at margins ranging from *** to *** percent and averaging *** percent.[140] There were *** metric tons of subject imports in the quarters with underselling and *** metric tons of subject imports in the quarters with overselling.[141] Thus, subject imports predominantly undersold the domestic like product on a volume basis, with *** percent of reported subject import sales in the quarters with underselling.

We also examined U.S. purchaser responses concerning lost sales. All seven responding purchasers reported purchasing subject imports instead of domestically produced CAPEs since 2021, and all seven also reported that subject import prices were lower than domestically produced CAPEs.[142] Five purchasers reported that price was a primary reason for purchasing *** short tons of subject imports instead of domestically produced CAPEs during the POI.[143]

Given the generally high degree of substitutability between subject imports and the domestic like product, the importance of price in purchasing decisions, the predominant underselling by subject imports in terms of reported sales volume, and the purchaser responses regarding subject import prices, we find that there has been significant underselling by subject imports during the POI. The underselling by subject imports caused a shift in market share from the domestic industry to subject imports and lost sales.[144]

We have considered price trends over the POI. Overall, between the first and last quarters of the POI, domestic producer sales prices increased by *** percent for Pricing Product 1 and *** percent for Pricing Product 2; subject import sales prices decreased by *** percent for Pricing Product 1 and increased *** percent for Pricing Product 2.[145] Although the domestic industry's prices for both products increased overall, the two pricing products experienced different movements over the POI. For Pricing Product 1, which accounted for *** percent of sales of both pricing products, the domestic industry's price increased from the first quarter of 2021 through the first quarter of 2022, when there was predominant subject import overselling, but declined from the second quarter of 2022 through the fourth quarter of 2023,

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

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

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

[142] CR/PR at V-11–V-12. Responding purchasers reported that the share of their total purchases sourced from the domestic industry declined by *** percentage points while the share sourced from China increased by *** percentage points during the POI, consistent with the significant volume of confirmed lost sales. *Id.* at Table V-8.

[143] CR/PR at V-11–V-12, Table V-9.

[144] *See* CR/PR at Table IV-6.

[145] CR/PR at V-10, Table V-6.

as subject imports undersold domestic sales of this product.[146] By contrast, domestic producer sales prices for Pricing Product 2 increased irregularly throughout the POI, as subject imports consistently oversold domestic sales of this product.[147] As discussed below, the domestic industry's per unit COGS increased steadily over the POI, and therefore cannot explain the domestic industry's declining prices on sales of Pricing Product 1. Furthermore, the two largest responding purchasers of domestically produced CAPEs, ***, reported that domestic producers reduced their prices in order to compete with lower-priced subject imports.[148] Based on the foregoing, we find that subject imports depressed prices of the domestic like product to a significant degree. In any final phase of these investigations, we will examine the extent to which other factors, such as demand trends, may have affected prices.

We have also examined whether subject imports prevented price increases which otherwise would have occurred to a significant degree. The record shows that the domestic industry's ratio of COGS to net sales increased irregularly over the POI, decreasing from *** percent in 2021 to *** percent in 2022, then increasing to *** percent in 2023.[149] The industry's net sales value per unit increased from $*** in 2021 to $*** in 2022 and then declined to $*** in 2023, for an overall increase of $*** from 2021 to 2023, while total COGS per unit increased from $*** in 2021 to $*** in 2022 and to $*** in 2023, for an overall increase of $*** over the same period.[150] The increase in the industry's COGS to net sales ratio in 2023 was largely driven by increasing per-unit fixed costs, as domestic producers' shipments declined and there were fewer sales over which to spread their overhead costs, and declining net sales AUVs.[151]

In sum, based on the record of the preliminary phase of these investigations, we find that subject imports significantly undersold the domestic like product, resulting in a shift in market share from the domestic industry to subject imports and depressing prices for the domestic like product in the latter half of the POI to a significant degree. Therefore, we find that subject imports had significant price effects.

[146] CR/PR at Table V-4, Figure V-2.

[147] CR/PR at Table V-5, Figure V-3.

[148] CR/PR at Table V-10. *** estimated that domestic producers reduced their prices *** percent while *** did not provide an estimate. *Id.* Another responding purchaser, ***, reported that domestic producers reduced their prices by *** percent but did not know if the price reduction was in response to low-priced subject imports. *Id.*

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

[150] CR/PR at Table VI-2.

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

E. Impact of the Subject Imports[152]

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."[153]

The domestic industry's production, capacity utilization, and U.S. shipments declined throughout the POI as it lost market share to subject imports and apparent U.S. consumption declined. Although the domestic industry's financial performance improved from 2021 to 2022, as prices increased and costs declined, its performance declined from 2022 to 2023 as the industry continued to lose market share to subject imports, consumption declined, and subject imports depressed domestic prices to a significant degree.

The domestic industry's production capacity remained stable over the POI.[154] The domestic industry's production and capacity utilization, however, declined each year of the POI.[155]

Certain employment-related indicators for the domestic industry declined from 2021 to 2023, including production-related workers ("PRWs"), total hours worked, wages paid, and productivity, while unit labor costs and hourly wages increased.[156]

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[152] Commerce initiated the antidumping duty investigation on CAPEs from China based on estimated dumping margins ranging from 86.45 to 171.61 percent. 89 Fed. Reg. at 43804.

[153] 19 U.S.C. § 1677(7)(C)(iii).

[154] The domestic industry's capacity was ***. CR/PR at Table III-6.

[155] The domestic industry's production declined from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023. CR/PR at Table III-6. The domestic industry's capacity utilization declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.*

[156] The domestic industry's number of PRWs decreased from *** in 2021 to ***. CR/PR at Table III-14. Total hours worked decreased from *** in 2021 to ***. *Id.* Wages paid decreased from $*** in 2021 to $*** in 2022 and $*** in 2023. *Id.* Productivity in metric tons per hour decreased from *** in 2021 to *** in 2022 and *** in 2023. *Id.* Unit labor costs per metric ton increased from $*** in 2021 to $*** in 2022 and $*** in 2023. *Id.* Hourly wages increased from $*** in 2021 to $*** in 2022, then declined to $*** in 2023. *Id.*

The domestic industry's U.S. shipments declined during the POI, as did its share of apparent U.S. consumption.[157] The domestic industry's end-of-period inventories increased overall from 2021 to 2023, and its ratio of end-of-period inventories to total shipments increased each year of the POI.[158]

The domestic industry's financial performance improved from 2021 to 2022 before declining *** in 2023. Gross profit,[159] operating income,[160] the ratio of operating income to net sales,[161] net income,[162] and the ratio of net income to net sales[163] all improved from 2021 to 2022 before declining in 2023 to a level much lower than in 2021, while net sales revenues declined throughout the POI.[164]

The domestic industry's capital expenditures declined during the POI, while its research and development expenses increased *** from 2021 to 2022 before declining in 2023 to a level far lower than in 2021.[165] The industry's operating return on assets increased from 2021 to 2022 but decreased *** in 2023.[166]

Based on the record of the preliminary phase of these investigations, we find that subject imports had an adverse impact on the domestic industry's performance during the POI

[157] The domestic industry's U.S. shipments declined from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023. CR/PR at Table III-8. The domestic industry's share of apparent U.S. consumption declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.* at Table IV-6.

[158] Inventories increased from *** metric tons in 2021 to *** metric tons in 2022, before declining to *** metric tons in 2023. CR/PR at Table III-10. The ratio of end-of-period inventories to total shipments increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.*

[159] The domestic industry's gross profit increased from $*** in 2021 to $*** in 2022, then declined to $*** in 2023. CR/PR at Table VI-1.

[160] The domestic industry's operating income increased from $*** in 2021 to $*** in 2022, then declined to $*** in 2023. CR/PR at Table VI-1.

[161] The domestic industry's ratio of operating income to net sales was *** percent in 2021, *** percent in 2022, and *** percent in 2023. CR/PR at Table VI-1.

[162] The domestic industry's net income increased from $*** in 2021 to $*** in 2022, then declined to $*** in 2023. CR/PR at Table VI-1.

[163] The domestic industry's ratio of net income to net sales was *** percent in 2021, *** percent in 2022, and *** percent in 2023. CR/PR at Table VI-1.

[164] The domestic industry's net sales revenues decreased from $*** in 2021 to $*** in 2022 and $*** in 2023. CR/PR at Table VI-1.

[165] Capital expenditures decreased from $*** in 2021 to $*** in 2022 and $*** in 2023. CR/PR at Table VI-5. Research and development expenses were $*** in 2021, $*** in 2022, and $*** in 2023. *Id.* *** was attributable to the effects of subject imports during the POI, as was ***. *Id.* at Table VI-14.

[166] CR/PR at Table VI-11. It was *** percent in 2021, *** percent in 2022, and *** percent in 2023. *Id.*

and particularly from 2022 to 2023.[167] Subject import volume was significant and increased significantly during the POI, driven by significant underselling. The significant and increasing volume of low-priced subject imports caused a shift in market share from the domestic industry to subject imports and depressed domestic prices to a significant degree. As a consequence, the domestic industry's performance was worse in 2023 than in 2021 by nearly every measure.

We have considered whether there are other factors that may have had an impact on the domestic industry during the POI to ensure that we are not attributing injury from other factors to subject imports. As discussed in section VI.B.2, nonsubject imports accounted for a much smaller share of apparent U.S. consumption than subject imports throughout the POI. Nonsubject imports also gained much less market share (*** percentage points) than subject imports (*** percentage points) over the POI and lost market share from 2022 to 2023, when most of the domestic industry's loss of market share to subject imports and declining performance occurred.[168] Thus, nonsubject imports do not explain the domestic industry's loss of market share to subject imports, and do not explain the domestic industry's declining performance during the POI.

We recognize that, based on the record in the preliminary phase of these investigations, apparent U.S. consumption declined steadily by *** percent over the POI.[169] Nevertheless, *** and most importers reported that demand either increased or remained unchanged during the POI.[170] In any event, any decline in apparent U.S. consumption cannot explain the injury caused by the domestic industry's loss of market share to subject imports during the POI. Furthermore, even though apparent U.S. consumption declined throughout the POI, the domestic industry was able to raise prices for both pricing products from 2021 to 2022 when supplies of subject imports were constrained, but experienced declining prices from 2022 to 2023 for the pricing product that accounted for the majority of subject import sales, as subject import underselling intensified in terms of sales volume and underselling margins. Accordingly,

[167] We are unpersuaded by FCI's argument that subject imports increased during the POI to serve demand that domestic producers were unable to satisfy due to their supply constraints. FCI Postconf. Br. at 1–3. As discussed in section VI.B.2 above, the domestic industry's supply constraints during 2021 and the first quarter of 2022 resulted from its response to reduced supplies of subject imports due to the COVID-19 pandemic. Domestic producers reported no supply constraints after the first quarter of 2022 and possessed substantial and increasing excess capacity during the POI, as their capacity utilization declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. CR/PR at Table III-4. Consequently, the industry could have produced and sold substantial additional volumes of the domestic like product in 2022 and 2023 had it not lost market share to subject imports.

[168] Nonsubject imports' share of apparent U.S. consumption increased from *** percent in 2021 to *** percent in 2022, then declined to *** percent in 2023. *Id.* at Table IV-6.

[169] CR/PR at Table IV-6.

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

declining demand cannot fully account for the injury that we have attributed to subject imports.

VII. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of subject imports of CAPEs 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 ICL-IP America, Inc., St. Louis, Missouri, on April 23, 2024, alleging that an industry in the United States is materially injured and threatened with material injury by reason of imports of certain alkyl phosphate esters ("CAPEs")[1] sold at less-than-fair-value ("LTFV") and subsidized by the government of China. Table I-1 presents information relating to the background of these investigations.[2] [3]

Table I-1
CAPEs: Information relating to the background and schedule of this proceeding

Effective date	Action
April 23, 2024	Petitions filed with Commerce and the Commission; institution of the Commission investigations (89 FR 34270, April 30, 2024)
May 14, 2024	Commission's conference
May 13, 2024	Commerce's notice of initiation (89 FR 43801, May 20, 2024 and 89 FR 43821, May 20, 2024)
June 6, 2024	Commission's vote
June 7, 2024	Commission's determinations
June 14, 2024	Commission's views

Statutory criteria

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

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

[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.

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

The majority of CAPEs sold in the United States are used to produce PIR/PUR spray foam applications.[6] CAPES are also used as a flame retardant in resins, PVC, adhesives, coatings, elastomers, cellulose acetate, nitrocellulose, and epoxy resins. CAPEs can also be used as additives in home furnishings, textiles, rubber products, conveyor belts, certain fibers, appliances, leather, wallpaper, and similar applications. In addition, CAPEs are used in emulsifiers, lubricants, as a plasticizer and solvent in certain products.[7]

The leading U.S. producers of CAPEs are ICL-IP America, Inc. ("ICL") and Lanxess Corporation ("Lanxess"), while leading producers of CAPEs outside the United States include ***, ***, and *** of China. The leading U.S. importers of CAPEs from China are ***, ***, and ***. *** is a leading importer of CAPEs from Germany. U.S. purchasers of CAPEs include firms that manufacture construction products. Leading purchasers responding to Commission questionnaires include ***.

Apparent U.S. consumption of CAPEs totaled approximately *** metric tons ($***) in 2023. Currently, two firms are known to produce CAPEs in the United States. U.S. producers' U.S. shipments of CAPEs totaled *** metric tons ($***) in 2023, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** metric tons ($***)

[6] Petition Vol. I, p. 12.
[7] Ibid.

in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** metric tons ($***) in 2023 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 two firms that accounted for *** U.S. production of CAPEs during 2023. U.S. imports are based on official U.S. imports statistics of the U.S. Department of Commerce Census Bureau adjusted to include other HTS numbers as reported in Commission questionnaires.

Previous and related investigations

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

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On May 20, 2024, Commerce published a notice in the Federal Register of the initiation of its countervailing duty investigation on CAPEs from China.[8]

Alleged sales at LTFV

On May 20, 2024 Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on CAPEs from China[9]. Commerce has initiated antidumping duty investigations based on estimated dumping margins of 86.45 to 171.61 percent for CAPEs from China.

[8] For further information on the alleged subsidy programs see Commerce's notice of initiation and related CVD Initiation Checklist. 89 FR 43821, May 20, 2024.

[9] 89 FR 43801, May 20, 2024.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[10]

> *Alkyl phosphate esters, which are halogenated and non-halogenated phosphorus-based esters with a phosphorus content of at least 6.5 percent (per weight) and a viscosity between 1 and 2000 mPa.s (at 20-25 °C).*
>
> *Merchandise subject to this investigation primarily includes Tris (2-chloroisopropyl) phosphate (TCPP), Tris (1,3-dichloroisopropyl) phosphate (TDCP), and Triethyl Phosphate (TEP).*
>
> *TCPP is also known as Tris (1-chloro-2- propyl) phosphate, Tris (1-chloropropan-2-yl) phosphate, Tris (monochloroisopropyl) phosphate (TMCP), and Tris (2-chloroisopropyl) phosphate (TCIP). TCPP has the chemical formula $C_9H_{18}Cl_3O_4P$ and the Chemical Abstracts Service (CAS) Nos. 1244733-77-4 and 13674-84-5. It may also be identified as CAS No. 6145-73-9.*
>
> *TDCP is also known as Tris (1,3-dichloroisopropyl) phosphate, Tris (1,3-dichloro-2-propyl) phosphate, Chlorinated tris, tris {2- chloro-1-(chloromethyl ethyl)} phosphate, TDCPP, and TDCIPP. TDCP has the chemical formula $C_9H_{15}Cl_6O_4P$ and the CAS No. 13674-87-8.*
>
> *TEP is also known as Phosphoric acid triethyl ester, phosphoric ester, flame retardant TEP, Tris(ethyl) phosphate, Triethoxyphosphine oxide, and Ethyl phosphate (neutral). TEP has the chemical formula $(C_2H_5O)_3PO$ and the CAS No. 78-40-0.*
>
> *Imported alkyl phosphate esters are not excluded from the scope of this investigation even if the imported alkyl phosphate ester consists of a single isomer or combination of isomers in proportions different from the isomers ordinarily provided in the market.*
>
> *Also included in this investigation are blends including one or more alkyl phosphate esters, with or without other substances, where the alkyl phosphate esters account for 20 percent or more of the blend by weight.*

[10] 89 FR 43801, May 20, 2024.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is imported under statistical reporting number 2919.90.5050 of the Harmonized Tariff Schedule of the United States ("HTS"). The 2024 general rate of duty is 3.7 percent ad valorem for HTS subheading 2919.90.50 ("Other (than aromatic) phosphoric esters and their salts, including lactophosphates; their halogenated, sulfonated, nitrated or nitrosated derivatives"). The subject product may also be imported, when classified as a plasticizer, under statistical reporting number 2919.90.5010 with a 2024 general rate of duty of 3.7 percent ad valorem. Blends containing the subject product are imported under statistical reporting number 3824.99.5000 with a 2024 general rate of duty of 6.5 percent ad valorem. Subject products of Chinese origin imported under HTS subheadings 2919.90.50 and 3824.99.50 are subject to a Section 301 duty rate of 25 percent ad valorem in addition to the duty rates specified above.[11] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

The product

Description and applications

The product subject to these investigations includes alkyl phosphate esters TCPP, TDCP, and TEP. CAPEs are clear, colorless liquids that are structurally similar and primarily used as flame retardants in rigid and flexible polyurethane foam applications.[12] At the core of each compound is a phosphate ion (PO_4^{3-}) in which three of the oxygen atoms are bonded with either a chlorinated hydrocarbon in the case of TCPP and TDCP or a hydrocarbon in the case of TEP.[13] (Figure I-1) CAPEs can be used in overlapping end uses and used as standalone flame retardants or combined to achieve the properties required.[14]

TCPP is manufactured as a composition of isomers, with the main isomer of tris(1-chloro-2-propyl) phosphate at a level of 75 ± 10 percent. The minor isomers are bis(1-chloro-2-propyl)-2-chloropropyl phosphate (20-30 percent) and bis(2-chloropropyl)-1-chloro-2-propyl phosphate (3-5 percent). It is soluble in most organic solvents but not in water. TCPP is known for its low viscosity, which allows for easy incorporation into different materials without

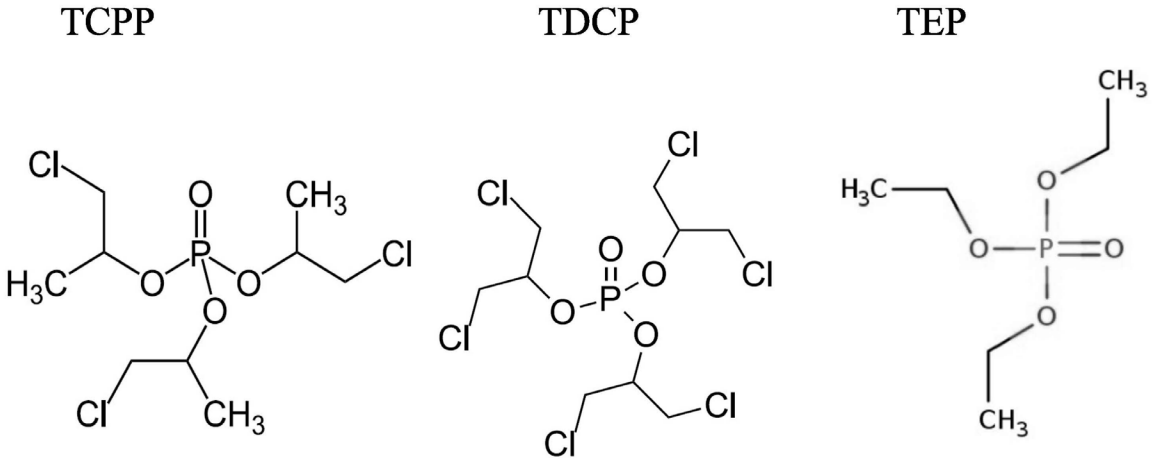
[11] HTS 9903.88.03, USITC, HTSUS (2024), Rev. 1.
[12] Conference transcript, p. 20 (Laufer) and p. 9 (Symes).
[13] Conference transcript, p. 20 (Laufer).
[14] Conference transcript, p. 21 (Laufer) and p. 64 (Symes). Importer FCI contends that TEP cannot be used as a standalone flame retardant. FCI postconference brief, p. 3.

affecting their physical properties. TCPP is sold as a technical grade, where purity is reported as the sum of all TCPP isomers.[15]

TDCP is typically manufactured as a composition of isomers, with the main isomer of tris(1,3-dichloroisopropyl) phosphate at a level of 95 ± 5 percent. The minor isomers are bis(1,3-dichloroisopropyl)-2,3-dichloropropyl phosphate (1-7 percent) and bis(2,3-dichloropropyl)-1,3-dichloroisopropyl phosphate (0-3 percent). TDCP has a higher viscosity than the TCPP and TEP which may make it more difficult to use as a flame retardant when applying rigid polyurethane spray foams at temperatures below 50 °F. Since TDCP may have a pale-yellow color, it may be offered in a stabilized version to reduce discoloration caused by processing flexible polyurethane foams.[16]

TEP fully dissolves in water and easily dissolves in organic solvents such as ethanol, ethyl ether, or benzene. TEP is less viscous but more volatile than TCPP. [17] Imports from China of TEP are typically sold in a technical or industry grade, at a minimum purity level of 96 percent, and in a "Superior" or reagent grade, at a minimum purity of 99.5 percent. TEP is no longer made in the United States. Eastman Chemical Company ("Eastman") was a long-time producer of TEP in the United States but ceased production before the POI.[18]

Figure I-1
CAPEs: Molecular structures of TCPP, TDCP, and TEP



Source: Petitioner's postconference brief, p. 8.

[15] Petition, Vol. I, p. 8.
[16] Petition, Vol. I, p. 9.
[17] Conference transcript, p. 11 (Symes).
[18] Eastman postconference brief, p. 1.

There is no quality difference between CAPEs produced in China and those produced by the domestic industry.[19] While no TEP is produced in the United States, it is produced in China.

CAPEs produced in the United States are packaged in iso-containers for export or in bulk tanker trucks for domestic shipment. Domestic shipments in tanker trucks contain 45,000 lb payloads (the maximum allowed by DOT). Imports from China are likewise packaged in 20,000 – 22,000 kg Iso-containers or in 268 kg and larger cylinders or 1,100 kg intermodal bulk containers.[20]

CAPEs are primarily used as flame retardants in rigid and flexible polyurethane foam applications.[21] CAPEs are a necessary additive in most foam insulation applications because these foams are manufactured from petrochemicals, which are inherently flammable.[22] Primarily, CAPEs are used in foam insulation in commercial and residential construction. One of the largest applications for CAPEs is commercial roofing. The fastest growing application in the U.S. market is the replacement of fiberglass insulation with low-density, open cell insulation in residential housing.[23]

CAPEs retard fire by two mechanisms. One mechanism, common to all three CAPEs, is the formation of a protective char layer from the phosphorus contained in all three compounds. The char layer prevents further spread of the flame and acts as a flame retardant in the condensed phase.[24] The other mechanism is the scavenging of oxygen by chlorine contained in TCPP and TDCP.[25] This mechanism allows TCPP and TDCP to act as flame retardants in the vapor phase as well.[26] Since TEP does not contain chlorine, this second mechanism of flame retardation is not available to materials that contain only TEP. As a result, more TEP is required to achieve an equivalent level of flame retardancy.[27] The greater concentration of phosphorus in TEP, about twice the amount of phosphorus contained in TCPP, provides effective flame retardation but typically still requires more of the product (in this case TEP) to be present in the foam.[28] Since TCPP and TDCP contain chlorine as well as phosphorus, they are considered more efficient flame retardants.[29]

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[19] Conference transcript, pp. 14 and 16 (Symes).
[20] Pet., Vol. I, p. 11.
[21] Conference transcript, p. 5 (Alves) and p. 9 (Symes).
[22] Conference transcript, p. 10 (Symes).
[23] Conference transcript, p. 12 (Symes).
[24] Pet., Vol. I, p. 8.
[25] Conference transcript, p. 49 (Symes).
[26] Conference transcript, p. 49 (Symes).
[27] Conference transcript, p. 11 (Symes).
[28] Conference transcript, p. 11 (Symes).
[29] Conference transcript, p. 10 (Symes).

CAPEs are effective as flame retardants because they have low volatility and high thermal stability.[30] These physical properties ensure that CAPEs do not evaporate easily or lose their effectiveness over time and that they can withstand high temperatures without breaking down or losing their flame retardancy.[31]

TCPP is the most used CAPE in the U.S. market, largely due to its cost effectiveness. While all three CAPEs are effective flame retardants, their physical properties do differ. For example, TDCP's higher viscosity limits its use in areas/seasons where the temperature is below 50°F.[32] Conversely, its higher viscosity and lower volatility make it more effective in an automobile headliner.[33] Given its lower viscosity, TEP may be preferred in some applications, or it may be blended with another CAPE to achieve the desired properties.[34] The petitioner asserted at the conference that all three CAPEs can be used interchangeably in the major applications.[35]

Importer FCI USA Inc., in addition to noting the difference in phosphorus content, claimed that the viscosities of TCPP, TDCP, and TEP are "vastly different."[36] It used common liquids to characterize these different viscosities: TEP's viscosity is similar to water, TCPP's viscosity is like that of corn oil, and TDCP's viscosity is similar to motor oil.[37]

CAPEs are not limited to use as flame retardants in foam applications. They are also used as flame retardants in a variety of resins and chemicals. CAPEs can be used as additives in home furnishings for textile waterproofing and finishing and in various rubber products. They are used in emulsifiers and numerous lubricants and anti-wear additives. CAPEs can also be used as plasticizers in PVC and other polymers and as solvents in the production of acrylic lacquers and cellulose acetate.[38]

CAPEs are not universal flame retardants. For example, they are not used in children's garments and generally not in fabric-backed coatings. Brominated flame retardants are generally still preferred for these applications.[39]

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[30] Conference transcript, p. 6 (Alves).

[31] Conference transcript, p. 6 (Alves).

[32] Conference transcript, p. 11 (Symes).

[33] Conference transcript, p. 11 (Symes). The headliner is the lining, typically made of foam and covered in fabric, that covers the ceiling of an automobile's interior.

[34] Conference transcript, pp. 11-12 (Symes).

[35] Conference transcript, p. 12 (Symes).

[36] FCI postconference brief, p. 2.

[37] FCI postconference brief, p. 2.

[38] Pet., Vol. I, p. 12.

[39] Conference transcript, p. 54 (Symes).

Manufacturing processes

CAPEs are produced by exothermic reactions of phosphorus oxychloride with either an alcohol or an epoxide, which may include chlorine, in a closed reactor.[40] The subject product can be manufactured by either a batch or continuous process.[41] The petitioner stated that it produces CAPEs in "semi-batch" processes.[42]

TCPP is produced by reacting phosphorous oxychloride with propylene oxide or 2-chloropropane in the presence of a catalyst. TDCP results from the reaction of phosphorous oxychloride with epichlorohydrin in the presence of a catalyst. TEP is produced by reacting phosphorous trichloride and ethanol in the presence of an inorganic or organic base, such as an amine or caustic soda (NaOH).[43]

Crude TCPP and TDCP are washed and dehydrated in a closed vessel to remove acidic impurities and residual catalyst. Crude TEP is purified by filtration in a closed system to remove impurities and reaction byproducts. The product is then filtered, transferred, and packaged using sealed pumps through closed lines. Storage is in closed vessels under nitrogen to exclude moisture and oxygen.[44]

The petitioner has two reactor vessels, either of which can be used to produce TCPP and TDCP. [45] Chinese producers likely use the same manufacturing processes described above given that the petitioner stated that these processes have been known for decades.[46]

Production of TEP results in hydrochloric acid as a byproduct. Eastman stated that disposing of this highly corrosive byproduct can be challenging and is a significant barrier to entry for potential U.S. producers of TEP.[47]

[40] Petition, Vol. I, p. 10; Conference transcript, p. 5 (Alves) and p. 21 (Laufer).
[41] Petition, Vol. I, p. 10.
[42] Conference transcript, p. 24 (Laufer).
[43] Pet., Vol. I, pp. 10-11.
[44] Pet., Vol. I, pp. 10-11.
[45] Conference transcript, p. 5 (Alves).
[46] Conference transcript, p. 14 (Symes).
[47] Eastman postconference brief, p. 6.

Domestic like product issues

The petitioner proposes that the Commission should define a single domestic like product consisting of alkyl phosphate esters corresponding to the scope of the investigations and a single domestic industry manufacturing that product. Petitioner argues that TCPP, TDCP, TEP and blends including one or more alkyl phosphate esters are the products which are most like the article subject the investigation.[48] Further, petitioner argues that these products constitute a continuum of products manufactured similarly in closed reactors from a phosphate ion, which imports common physical characteristics on the products. These products see through the same distribution channels for some of the same end uses in a range of prices.[49] Respondent Eastman, argues that TEP is a separate like product from other alkyl phosphate esters included in the scope of the investigations. Moreover, Respondent Eastman Chemical states that TEP is structurally and chemically distinct from TCPP and TDCP and these physical differences affect end uses and product performance. On end-uses, Eastman stated that while TCPP and TDCP are largely used for foam-insulating products, Eastman's main use for *** is for ***.[50] Eastman also argues that TEP is not fully interchangeable with TDPP and TDCP and is sold through different channels of distribution, including ***. Eastman claims that the majority of TEP imports are *** and that different input, processes, workforce, and skills are used in the manufacture of TEP as opposed to TCPP and TDCP.[51] Respondent FCI stated that TCPP, TDCP, and TEP are impossible to group as one category as they are extremely unique products based on physical characteristics, uses, and commercially by how much is used in the U.S. FCI argues that TCPP, TDCP and TEP are not interchangeable in their production, nor their end use with buyers. FCI added that a huge investment of time, resources, and money required to transition a TCPP production line to TDCP, including ***. Moreover, according to FCI these products have different technical properties, TDCP has a 7.1 percent phosphorous content, while TEP has 17 percent and "vastly" different applications.[52]

[48] Petitioner postconference brief, p. 5.
[49] Ibid.
[50] Eastman postconference brief, pp. 2-7.
[51] Eastman postconference brief, pp. 5, 6-7.
[52] FCI postconference brief, pp. 1-3.

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.

U.S. producers and U.S. importers were asked to report on comparability of different types of CAPEs (TCPP, TDCP, and TEP) with each other addressing physical characteristics and end uses, interchangeability, channels of distribution, manufacturing facilities, production processes, customer and producer perceptions, and price. The results of the responses regarding the product comparisons are summarized below in tables I-2, I-3, and I-4.

Table I-2
CAPEs: Count of DLP comparisons: TCPP vs TDCP

Factor	Firm type	Fully	Mostly	Somewhat	Never
TCPP vs TDCP: Physical characteristics	U.S. producer	***	***	***	***
TCPP vs TDCP: Physical characteristics	Importer	0	2	2	3
TCPP vs TDCP: Interchangeability	U.S. producer	***	***	***	***
TCPP vs TDCP: Interchangeability	Importer	0	1	3	4
TCPP vs TDCP: Manufacturing	U.S. producer	***	***	***	***
TCPP vs TDCP: Manufacturing	Importer	3	3	1	1
TCPP vs TDCP: Channels	U.S. producer	***	***	***	***
TCPP vs TDCP: Channels	Importer	1	2	3	1
TCPP vs TDCP: Perceptions	U.S. producer	***	***	***	***
TCPP vs TDCP: Perceptions	Importer	1	2	2	2
TCPP vs TDCP: Price	U.S. producer	***	***	***	***
TCPP vs TDCP: Price	Importer	0	2	3	1

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

Table I-3
CAPEs: Count of DLP comparisons: TCPP vs TEP

Factor	Firm type	Fully	Mostly	Somewhat	Never
TCPP vs TEP: Physical characteristics	U.S. producer	***	***	***	***
TCPP vs TEP: Physical characteristics	Importer	1	0	4	4
TCPP vs TEP: Interchangeability	U.S. producer	***	***	***	***
TCPP vs TEP: Interchangeability	Importer	1	2	1	6
TCPP vs TEP: Manufacturing	U.S. producer	***	***	***	***
TCPP vs TEP: Manufacturing	Importer	3	3	2	1
TCPP vs TEP: Channels	U.S. producer	***	***	***	***
TCPP vs TEP: Channels	Importer	1	2	1	4
TCPP vs TEP: Perceptions	U.S. producer	***	***	***	***
TCPP vs TEP: Perceptions	Importer	1	2	3	3
TCPP vs TEP: Price	U.S. producer	***	***	***	***
TCPP vs TEP: Price	Importer	0	2	3	4

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

Table I-4
CAPEs: Count of DLP comparisons: TDCP vs TEP

Factor	Firm type	Fully	Mostly	Somewhat	Never
TDCP vs TEP: Physical characteristics	U.S. producer	***	***	***	***
TDCP vs TEP: Physical characteristics	Importer	0	0	3	4
TDCP vs TEP: Interchangeability	U.S. producer	***	***	***	***
TDCP vs TEP: Interchangeability	Importer	0	1	2	4
TDCP vs TEP: Manufacturing	U.S. producer	***	***	***	***
TDCP vs TEP: Manufacturing	Importer	3	3	1	1
TDCP vs TEP: Channels	U.S. producer	***	***	***	***
TDCP vs TEP: Channels	Importer	1	1	2	3
TDCP vs TEP: Perceptions	U.S. producer	***	***	***	***
TDCP vs TEP: Perceptions	Importer	1	2	2	2
TDCP vs TEP: Price	U.S. producer	***	***	***	***
TDCP vs TEP: Price	Importer	0	2	3	2

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

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

U.S. market characteristics

CAPEs are used by producers of construction products, especially spray foam insulation, to impart fire retardation qualities.[1] As noted in Part I, CAPEs are available as TCPP, TDCP, and TEP. Petitioner ICL described the three types as somewhat interchangeable (possibly with some reformulation of the end-use product),[2] while importer FCI and previous U.S. producer and current importer Eastman stated that the products are not interchangeable.[3]

Apparent U.S. consumption of CAPEs decreased *** percent during January 2021-December 2023. ICL described the COVID-19 pandemic as reducing the supply of Chinese CAPEs in the U.S. market in 2021 and early 2022. However, it added that Chinese supply returned to the U.S. market in 2022 and 2023.[4]

*** U.S. producers and 11 importers indicated that there had not been any significant changes to the product range, mix, or marketing of CAPEs since January 1, 2021.

Impact of section 301 tariffs

U.S. producers and importers were asked to report the impact of section 301 tariffs on overall demand, supply, prices, or raw material costs. Two *** indicated that the section 301 tariffs did not have an impact on the CAPEs market. *** stated that the section 301 tariffs only caused a minor increase in the prices of Chinese TCPP. It added that even with the tariffs, Chinese TCPP is sold at prices too low for U.S. producers to compete with.

Six importers described the section 301 tariffs as affecting the market for CAPEs. *** described the increased costs as difficult for end users to accommodate, but "surprisingly" the market was able to adjust. *** described maintaining supply after the tariffs as "a challenge." *** described passing along section 301 tariffs costs to its customers. *** indicated that while the section 301 tariffs increased its costs "substantially," it continued to purchase for specific end uses and customers. *** stated that while the section 301 tariffs increased its costs about *** percent, the main suppliers of raw materials phosphorous and chloride were still in China. The raw material suppliers used by the domestic

[1] Petitioner's postconference brief, p. 17.
[2] Petitioner's postconference brief, pp. 10-14.
[3] Postconference briefs of Eastman, p. 1, and FCI (answers to questions, p. 1-3).
[4] Conference transcript, p. 32 (Symes).

industry (located in Israel, Kazakhstan, and Vietnam) also raised their prices for raw materials, so that the relative competitive position of U.S. and Chinese suppliers did not change much.

Channels of distribution

U.S. producers and importers sold mainly to end users, as shown in table II-1.

Table II-1
CAPEs: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2021	2022	2023
United States	Distributor	***	***	***
United States	End user	***	***	***
China	Distributor	***	***	***
China	End user	***	***	***
Nonsubject sources	Distributor	***	***	***
Nonsubject sources	End user	***	***	***
All import sources	Distributor	***	***	***
All import sources	End user	***	***	***

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

Geographic distribution

U.S. producers and importers reported selling CAPEs to all regions in the contiguous United States (table II-2). For U.S. producers, *** percent of sales were between 101 and 1,000 miles, *** percent were within 100 miles of their production facility, and *** percent were over 1,000 miles. For importers, 57.5 percent of sales were shipped between 101 and 1,000 miles of their U.S. point of shipment, 32.0 percent were shipped within 100 miles, and 10.5 percent were shipped over 1,000 miles.

Table II-2
CAPEs: Count of U.S. producers' and U.S. importers' geographic markets

Region	U.S. producers	China
Northeast	***	5
Midwest	***	10
Southeast	***	9
Central Southwest	***	9
Mountain	***	5
Pacific Coast	***	7
Other	***	1
All regions (except Other)	***	4
Reporting firms	***	10

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

Note: Other U.S. markets include AK, HI, PR, and VI.

Supply and demand considerations

U.S. supply

The U.S. CAPEs market is supplied by two U.S. producers, importers of Chinese product, and some imports from nonsubject countries. Table II-3 provides a summary of the supply factors regarding CAPEs from U.S. producers and from subject countries.

Table II-3
CAPEs: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in metric tons; ratio and share in percent

Factor	Measure	United States	China
Capacity 2021	Quantity	***	***
Capacity 2023	Quantity	***	***
Capacity utilization 2021	Ratio	***	***
Capacity utilization 2023	Ratio	***	***
Inventories to total shipments 2021	Ratio	***	***
Inventories to total shipments 2023	Ratio	***	***
Home market shipments 2023	Share	***	***
Non-US export market shipments 2023	Share	***	***
Ability to shift production (firms reporting “yes”)	Count	***	***

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

Note: Responding U.S. producers accounted for all U.S. production of CAPEs in 2023. Responding foreign producer/exporter firms accounted for approximately *** percent of U.S. imports of CAPEs from China during 2023. 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.”

Domestic production

Based on available information, U.S. producers of CAPEs have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced CAPEs to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and inventories, both of which increased over 2021 to 2023. U.S. capacity remained the same between 2021 and 2023, while production decreased by *** percent, leading to a *** percentage point decrease in capacity utilization. Exports were minimal in 2023.

Subject imports from China

Based on available information, producers of CAPEs from China have the ability to respond to changes in demand with large changes in the quantity of shipments of CAPEs to the U.S. market. While data reported in table II-3 show low inventories, moderate unused capacity, and moderate exports to third-country markets, the data cover less than *** percent of Chinese imports. Other Chinese exporters have shown the ability to export more CAPEs to the rest of the world than the size of the entire U.S. CAPEs market.

Imports from nonsubject sources

Nonsubject imports accounted for approximately *** percent of total U.S. imports in 2023. The source of nonsubject imports during January 2021-December 2023 was Germany, ***.

Supply constraints

*** U.S. producers and five importers (***) reported that they had experienced supply constraints since January 1, 2021. All of these firms listed the COVID-19 pandemic as such a constraint. *** described Chinese shortages in 2021 and the first quarter of 2022 as leading to shortages of CAPEs in the U.S. market, leading to its own plant ***. ***. It also stated that when imports from China returned in the second quarter of 2022, it immediately experienced reduced orders. Similarly, *** described having to refuse some orders during the COVID-19 pandemic because of the lack of supply of Chinese product due to logistics issues. Importers also described difficulty in obtaining CAPEs from China during the COVID-19 pandemic due to the closure of Chinese production facilities. In addition, one importer (***) also indicated that rail and ship disruptions as well as Panama Canal issues had caused supply constraints. Seven importers (***) indicated that they had not experienced supply constraints.

U.S. demand

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

End uses and cost share

U.S. demand for CAPEs depends on the demand for U.S.-produced downstream products, generally insulation products that need the fire retardant characteristics that CAPEs provide. A small share of overall CAPEs demand is also for the automotive and other sectors.[5] CAPEs account for a small share (generally *** to *** percent) of the cost of the end-use products in which they are used. U.S. producer *** described CAPEs as accounting for *** percent of the cost of rigid foam. U.S. producer *** described CAPEs as accounting for *** percent of insulation panels, *** percent of low density spray systems, and *** percent of medium density spray systems. Among importers, *** described CAPEs as *** percent of wall insulation, *** as *** percent of closed spray systems, *** as *** percent of rigid foam retarded with TEP, and *** as *** percent of spray foam. Importer *** indicated that CAPEs accounts for *** percent of a proprietary product it makes.

Business cycles

*** and eight other importers indicated that the CAPEs market is not subject to business cycles. *** elaborated that the demand for *** generally followed the construction industry, with slightly (but overall "not significant") higher demand in summer. *** indicated that the CAPEs market was subject to business cycles. *** stated that business cycles were based on energy costs and capital costs for new construction. *** stated that demand fluctuates according to weather and its effect on the construction market.

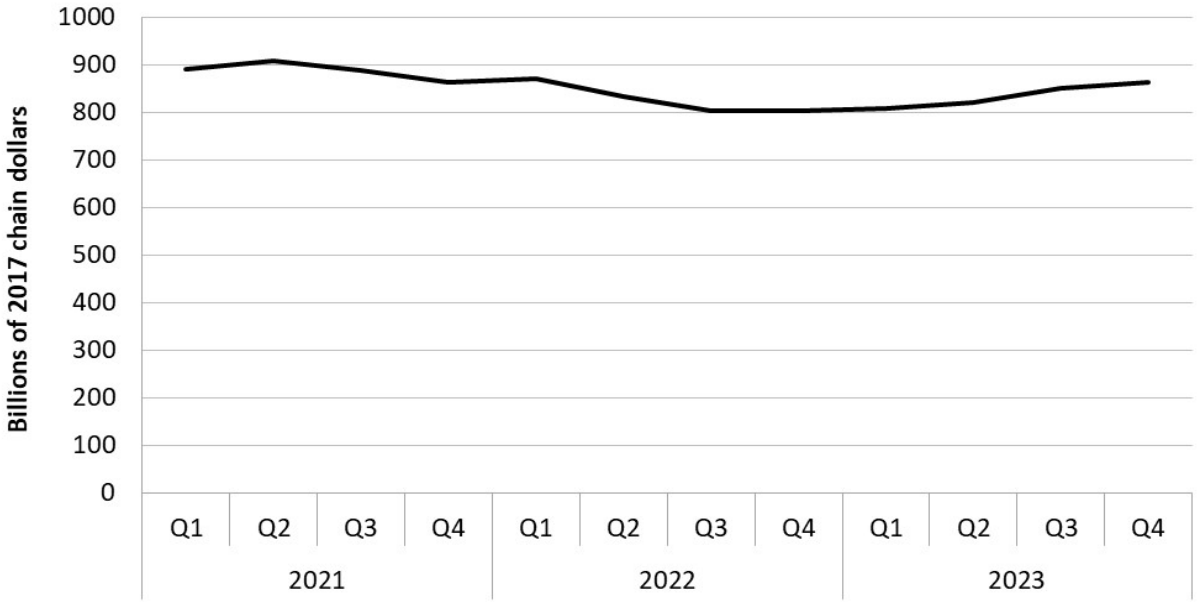
*** and seven other importers indicated that the CAPEs market was not subject to distinctive conditions of competition, other than the business cycles described above. *** indicated that there were such distinctive conditions. *** described such conditions as purchasers' ability to delay capital intensive choices (by repairing rather than replacing roofs and insulation) during weak economic periods. *** described domestic traders as now competing directly with Chinese producers that sell to U.S. purchasers, resulting in lower prices and increased competition. *** stated that it has found some importers classifying their imports incorrectly in order to avoid section 301 tariffs.

[5] Petitioner's postconference brief, p. 17 and exhibit 4.

Demand trends

Petitioner stated that demand for CAPEs follows construction spending.[6] Real value-added in construction fell 3.2 percent from the first quarter of 2021 to the fourth quarter of 2023, as shown in table II-4 and figure II-1.

Figure II-1
Real value-added in construction, January 2021- December 2023



U.S. Bureau of Economic Analysis, "Real Value Added by Industry" www.bea.gov (accessed Thursday, May 23, 2024).

[6] Petitioner's postconference brief, p. 17.

Table II-4
Real value-added in construction, January 2021- December 2023

Value in billions of 2017 chain dollars

Year	Quarter	Real value-added in construction
2021	Q1	892.0
2021	Q2	908.0
2021	Q3	888.2
2021	Q4	864.3
2022	Q1	871.4
2022	Q2	833.6
2022	Q3	803.1
2022	Q4	802.9
2023	Q1	809.4
2023	Q2	820.3
2023	Q3	850.9
2023	Q4	863.4

Source: U.S. Bureau of Economic Analysis, "Real Value Added by Industry" (accessed Thursday, May 23, 2024).

A majority of firms reported no change in U.S. demand for CAPEs since January 1, 2021 (table II-5), with most of the remaining firms reporting an increase. *** stated that increased demand was due to increased use of CAPEs in thermal insulation used in more energy-efficient buildings, both inside and outside of the United States. *** stated that while demand in the United States had been mostly stable, demand in China had been “very weak,” leading to higher Chinese exports of CAPEs. *** stated that the spray foam market is growing at 13 percent per year, driving an increase in demand for CAPEs. It also described Chinese demand for TCPP as increasing steadily. *** described fluctuations due to the COVID-19 pandemic. *** stated that ICL only has the capacity to cover 50 percent of U.S. demand for CAPEs, driving demand for *** imported CAPEs.

Table II-5
CAPEs: Count of firms’ responses regarding overall domestic and foreign demand, by firm type

Market	Firm type	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	3	1	6	1	0
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	2	0	5	0	0

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

Substitute products

Substitutes for CAPEs are limited and/or more costly than CAPEs. Nine importers indicated that there were no substitutes for CAPEs. *** and one importer (***) indicated that there were substitutes. *** indicated that diethyl hydroxymethyl phosphonate could substitute for CAPEs in insulation panels and spray systems, but that its raw materials were much more expensive than CAPEs. *** indicated that brominated flame retardants could substitute for CAPEs but are more expensive than CAPEs.[7] *** stated that tetrabromophthalate diol can replace TCPP in "a few" rigid foam applications. All of these three firms indicated that changes in the prices of these substitute products had not affected the prices of CAPEs.

Substitutability issues

This section assesses the degree to which U.S.-produced CAPEs and imports of CAPEs from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of CAPEs from domestic and imported sources based on those factors. Based on available data, staff believes that there is a moderate-to-high degree of substitutability between domestically produced CAPEs and CAPEs imported from subject sources.[8] Factors contributing to this level of substitutability include a high level of interchangeability between U.S., Chinese, and nonsubject product, mitigated by some issues of availability of U.S. product.

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations[9] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for CAPEs. The major purchasing factors identified by firms include quality, price, and availability.

[7] In additional comments, *** described end users as "stuck" with CAPEs.

[8] The degree of substitution between domestic and imported CAPEs depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced CAPEs to the CAPEs imported from subject countries (or vice versa) when prices change. The degree of substitution may include such factors as relative prices (discounts/rebates), quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

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

Most important purchase factors

The most often cited top three factors firms consider in their purchasing decisions for CAPEs were quality (six firms), price (six firms), and availability/supply (five firms) as shown in table II-6. Quality, availability, and reliability were the most frequently cited first-most important factor (cited by two firms each).

Table II-6
CAPEs: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Factor	First	Second	Third	Total
Quality/meeting specifications/consistency	2	2	2	6
Price	1	2	3	6
Availability/supply	2	1	2	5
Reliability/on-time supply	2	1	0	3
Vendor relationships	0	1	0	1

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

Note: Other factors listed after the first three include lead time, stocking programs, and price.

Lead times

CAPEs are primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments were sold from inventory, with lead times averaging *** days. U.S. importers reported that *** percent of their commercial shipments were sold from inventory, with lead times averaging *** days. Another *** percent were produced to order, with lead times averaging *** days. The remaining *** percent of their commercial shipments came from foreign inventories, with lead times averaging *** days.

Comparison of U.S.-produced and imported CAPEs

In order to determine whether U.S.-produced CAPEs can generally be used in the same applications as imports from China, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-7 to II-8, most responding firms described CAPEs from all sources as always or frequently interchangeable. In additional comments, *** indicated that TCPP from the United States, EU, and China is interchangeable. It continued that, to its knowledge, TEP is only available in commercial quantities from China, but added that TCPP and TEP are also interchangeable. *** indicated that its responses were for *** only.

Table II-7
CAPEs: Count of U.S. producers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. China	***	***	***	***
U.S. vs. other	***	***	***	***
China vs. Other	***	***	***	***

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

Table II-8
CAPEs: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. China	7	2	0	1
U.S. vs. other	5	2	0	0
China vs. Other	5	2	0	1

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of CAPEs from the United States, subject, or nonsubject countries. As seen in tables II-9 to II-10, a majority of U.S. producers and a plurality of importers described such differences as never significant, although multiple importers also described such differences as always or frequently significant.

Table II-9
CAPEs: Count of U.S. producers reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. China	***	***	***	***
U.S. vs. other	***	***	***	***
China vs. Other	***	***	***	***

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

Table II-10
CAPEs: Count of importers reporting the significance of differences between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. China	3	2	1	4
U.S. vs. other	1	1	0	4
China vs. Other	2	0	1	4

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

In additional comments, *** stated that price competition on CAPEs is high, with a difference of $0.01 sometimes meaning the difference between making a sale or not. *** also described differences of only a few cents as deciding sales for TCPP and TEP. *** described importing material and keeping it

in dedicated inventories for its customers, so that they could buy at flexible times but stable prices. *** stated that ***, on the other hand, will react immediately to price increase opportunities. *** described other important purchasing factors as service, availability, and diversity of supply chains.

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

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part I of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part IV and Part V. Information on the other factors specified is presented in this section and/or Part VI and (except as noted) is based on the questionnaire responses of two firms that accounted for *** U.S. production of CAPEs during 2023.

U.S. producers

The Commission issued a U.S. producer questionnaire to three firms based on information contained in the petition. Two firms (ICL and Lanxess) provided usable data on their operations.[1] Table III-1 lists U.S. producers of CAPEs, their production locations, positions on the petition, and shares of total production.

[1] ***. U.S. Producer questionnaire response and email from ***, counsel to ***, May 15, 2024. Further, *** states that the reaction to produce TEP produces a crude TEP product with hydrochloric acid as a byproduct. Disposing of this byproduct is challenging ***. *** postconference brief, p. 6.

Table III-1
CAPEs: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2023

Firm	Position on petition	Production location(s)	Share of production
ICL	Petitioner	Gallipolis Ferry, WV	***
Lanxess	***	Charleston, SC Pittsburgh, PA	***
All firms	Various	Various	100.0

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

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

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

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***
***	***	***
***	***	***
***	***	***

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

Note: ICL reported that ***. Follow up email from ***, Counsel to ***, May 24, 2024.

Note: Lanxess reported that ***. Follow up email from ***, May 31, 2024.

As indicated in table III-2, two U.S. producers are related to foreign firms. In addition, as discussed in greater detail below, *** directly import the subject merchandise and *** purchases the subject merchandise from U.S. importers.

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of CAPEs since 2021. The two producers indicated in their questionnaires that they had experienced such changes. Table III-3 presents the changes identified by these producers.

Table III-3
CAPEs: U.S. producers' reported changes in operations, since January 1, 2021

Item	Firm name and narrative response on changes in operations
Prolonged shutdowns	***
Production curtailments	***
Production curtailments	***

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

U.S. production, capacity, and capacity utilization

Table III-4 presents U.S. producers' installed and practical capacity and production on the same equipment. The Commission asked U.S. firms to report their installed overall, practical overall, and practical CAPEs capacities. Installed or "theorical" overall capacity measures the level of production firms could have attained based solely on existing capital investments and not considering other constraints such as availability of material inputs, labor force, and normal downtime. The two practical capacity measures take into consideration both existing capital investment as well as non-capital investment constraints. Practical overall capacity measures the firm's capacity to produce CAPEs as well as other products using the same machinery, whereas CAPEs capacity measures only the practical capacity of firms to produce CAPEs.

The two U.S. producers reported unchanged installed overall capacity during 2021-23 but installed overall production fell by *** percent during the same period.[2] Therefore, installed overall capacity utilization rates were down *** percentage points in 2023 compared to 2021. Reported practical overall capacity was the same during the period but practical overall production, as was installed overall production, declined by over *** during 2021-23, resulting in practical overall capacity utilization rate decrease of *** percentage points during the same period. There were similar trends for practical CAPEs capacity, which was the same during 2021-23, while aggregate production decreased by *** percent from 2021 to 2023. In the same way, capacity utilization rates for CAPEs were down by *** percentage points from 2021 to 2023.

[2] *** was the main driver of this trend with a *** of *** percent in installed overall production during 2021-23.

Table III-4
CAPEs: U.S. producers' installed and practical capacity and production on the same equipment as in-scope production, by period

Capacity and production in metric tons; utilization in percent

Item	Measure	2021	2022	2023
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical CAPEs	Capacity	***	***	***
Practical CAPEs	Production	***	***	***
Practical CAPEs	Utilization	***	***	***

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

Table III-5 presents U.S. producers' reported narratives regarding practical capacity constraints.

Table III-5
CAPEs: U.S. producers' reported capacity constraints since January 1, 2021

Item	Firm name and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Supply of material inputs	***
Other constraints	***

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

Table III-6 and figure III-1 present U.S. producers' CAPEs production, capacity, and capacity utilization. Although practical CAPEs capacity was *** from 2021-23, production rates *** for both ICL and Lanxess by *** percent.[3] Consequently, during 2021-23 CAPEs capacity utilization rates also *** percentage points for ICL and *** percentage points for Lanxess, with an aggregate *** of *** percentage points during the period. *** is the larger CAPEs U.S. producer, accounting for approximately *** of the U.S. production in 2023; ***.

[3] ICL stated that it was able to ramp up production in 2021 and 2022 to fill in a shortfall in imports from China, but after Chinese imports began ramping back up around the second quarter of 2022, those imports displaced the firm's sales volumes. As a result, ICL had to reduce production output. Since July 21, 2023, the firm stated it had to idle one of its reactors and only use the second reactor at reduced output. Conference transcript, pp. 23-24 (Steele).

Table III-6
CAPEs: U.S. producers' output, by firm and period

Practical capacity

Capacity in metric tons

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table III-6 Continued
CAPEs: U.S. producers' output, by firm and period

Production

Production in metric tons

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table III-6 Continued
CAPEs: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Note: Capacity utilization ratio represents the ratio of the U.S. producer's production to its production capacity.

Table III-6 Continued
CAPEs: U.S. producers' output, by firm and period

Share of production

Share of production in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	100.0	100.0	100.0

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

Figure III-1
CAPEs: U.S. producers' capacity, production, and capacity utilization, by period

* * * * * * *

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

Alternative products

As shown in table III-7, *** percent of the product produced during 2023 by U.S. producers was CAPEs. On the same production line, one firm (***) reported producing ***.[4] The *** share of CAPEs production on the same equipment as in scope production is mostly due to the *** in CAPEs production coupled with a moderate *** of *** percent of out-of-scope products during 2021-23.

Table III-7
CAPEs: U.S. producers' overall production on the same equipment as in-scope production, by period

Quantity in metric tons; ratio and share in percent

Product type	Measure	2021	2022	2023
CAPEs	Quantity	***	***	***
Other products	Quantity	***	***	***
All products	Quantity	***	***	***
CAPEs	Share	***	***	***
Other products	Share	***	***	***
All products	Share	100.0	100.0	100.0

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

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

Table III-8 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. shipments accounted for the largest share of total shipments by quantity and value, well above *** percent in 2023. U.S. shipments decreased *** percent by quantity during 2021-23 and *** percent by value in the same period, although values slightly increased in 2022, but then decreased in 2023. The quantity and value of export shipments also decreased year-on-year during 2021-23. Total shipments followed similar trends and decreased by *** percent by quantity during 2021-23 and *** percent by value for the same period. Unit values for U.S. shipments, export shipments, and total shipments ranged between $*** and $*** per metric ton during 2021-23 and all increased from 2021 to 2022 but then decreased in 2023.

[4] ***. U.S. producer questionnaire, section II-3a.

Table III-8
CAPEs: U.S. producers' total shipments, by destination and period

Quantity in metric tons; value in 1,000 dollars; unit value in dollars per metric tons; shares in percent

Item	Measure	2021	2022	2023
U.S. shipments	Quantity	***	***	***
Export shipments	Quantity	***	***	***
Total shipments	Quantity	***	***	***
U.S. shipments	Value	***	***	***
Export shipments	Value	***	***	***
Total shipments	Value	***	***	***
U.S. shipments	Unit value	***	***	***
Export shipments	Unit value	***	***	***
Total shipments	Unit value	***	***	***
U.S. shipments	Share of quantity	***	***	***
Export shipments	Share of quantity	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***
Export shipments	Share of value	***	***	***
Total shipments	Share of value	100.0	100.0	100.0

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

Table III-9 presents U.S. producers' U.S. shipments by product type and period. TCPP accounted for the vast majority of CAPEs U.S. shipments which were *** percent by quantity and *** percent by value in 2023. TDCP accounted for the remaining shares, while *** reported producing TEP. Consistent with previous production and shipment data, U.S. shipment quantities for both TCPP and TDCP decreased during 2021-23, while U.S. shipment values slightly increased from 2021 to 2022, they were lower in 2023. The share of quantity for TCPP increased slightly by *** percentage points from 2021 to 2023. Unit values for both TCPP and TDCP increased from 2021 to 2022. While TCPP's unit values decreased in 2023, TDCP's slightly increased that same year. TDCP's unit values were generally higher than TCPP's in all periods.

Table III-9
CAPEs: U.S. producers' U.S. shipments, by product type and period

Quantity in metric tons; value in 1,000 dollars; unit value in dollars per metric tons; shares in percent

Item	Measure	2021	2022	2023
TCPP	Quantity	***	***	***
TDCP	Quantity	***	***	***
TEP	Quantity	***	***	***
All product types	Quantity	***	***	***
TCPP	Value	***	***	***
TDCP	Value	***	***	***
TEP	Value	***	***	***
All product types	Value	***	***	***
TCPP	Unit value	***	***	***
TDCP	Unit value	***	***	***
TEP	Unit value	***	***	***
All product types	Unit value	***	***	***
TCPP	Share of quantity	***	***	***
TDCP	Share of quantity	***	***	***
TEP	Share of quantity	***	***	***
All product types	Share of quantity	100.0	100.0	100.0
TCPP	Share of value	***	***	***
TDCP	Share of value	***	***	***
TEP	Share of value	***	***	***
All product types	Share of value	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. producers' inventories

Table III-10 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments. The quantity of U.S. producers' inventories increased irregularly by *** percent from 2021 to 2023. As a ratio to U.S. production, inventories increased by *** percentage points from 2021 to 2023. As a ratio to U.S. shipments, ending inventories increased by *** percentage points from 2021 to 2023. Ending inventory ratios to total shipments followed similar trends during 2021 and 2023.

Table III-10
CAPEs: U.S. producers' inventories and their ratio to select items, by period

Quantity in metric ton; ratio in percent

Item	2021	2022	2023
End-of-period inventory quantity	***	***	***
Inventory ratio to U.S. production	***	***	***
Inventory ratio to U.S. shipments	***	***	***
Inventory ratio to total shipments	***	***	***

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

U.S. producers' imports from subject sources

U.S. producers' imports of CAPEs are presented in tables III-11, III-12, and reasons for importing in table III-13. *** reported importing CAPEs from *** during 2021-23. ***'s ratio of imports from *** to U.S. production *** by *** percentage points between 2021 and 2023 and were *** percent in 2023. ***'s ratio of imports from *** to U.S. production *** by *** percentage points between 2021 and 2023 and were *** percent in 2023.

Table III-11
CAPEs: *'s U.S. production, subject imports, and ratio of subject imports to production, by source and period**

Quantity in metric tons; ratio in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from ***	Quantity	***	***	***
Imports from *** to U.S. production	Ratio	***	***	***

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

Table III-12
CAPEs: *'s U.S. production, subject imports, and ratio of subject imports to production, by source and period**

Quantity in metric tons; ratio in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from ***	Quantity	***	***	***
Imports from *** to U.S. production	Ratio	***	***	***

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

Table III-13
CAPEs: U.S. producers' reasons for importing, by firm

Item	Narrative response on reasons for importing
***'s reason for importing	***
***'s reason for importing	***

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

U.S. producers' purchases of imports from subject sources

In 2022 and 2023, U.S. producer *** reported purchasing *** and *** metric tons, respectively, of imports from *** from U.S. importer ***.[5]

[5] ***, U.S. producer questionnaire response, section II-13.

U.S. employment, wages, and productivity

Table III-14 shows U.S. producers' employment-related data.[6] During 2021-23, the number of production and related workers ("PRWs"), total hours worked, wages paid, and productivity (metric tons per hour) decreased. Hours worked per PRW, hourly wages, and unit labor costs all increased during 2021-23.[7]

Table III-14
CAPEs: U.S. producers' employment related information, by period

Item	2021	2022	2023
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 (metric tons per hour)	***	***	***
Unit labor costs (dollars per metric ton)	***	***	***

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

[6] According to ICL, plant labor allocated to phosphate esters is based on ***. U.S. producer questionnaire, section II-11.

[7] During testimony, ICL explained the increasing unit labor costs with the following explanation, "So production volumes have decreased, but our total manufactured costs have not decreased. So we've maintained our level of manufacturing costs. They're just being allocated over a smaller volume, so that translates to a dramatic increase in allocated fixed costs, and since TCPP is the largest-volume product at our Gallipolis Ferry plant, it traditionally carries the lion's share of our allocated fixed manufacturing costs, and so, although our production volumes have declined … it still incurs those allocations." Conference transcript, p. 33 (Symes).

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

U.S. importers

The Commission issued importer questionnaires to 81 firms believed to be importers of subject CAPEs, as well as to all U.S. producers of CAPEs.[1] Usable questionnaire responses were received from 12 companies,[2] representing approximately *** percent of U.S. imports from China in 2023 under HTS subheading 2919.90.50, a "basket" category.[3] Table IV-1 lists all responding U.S. importers of CAPEs from China and other sources, their locations, and their shares of U.S. imports, in 2023.[4]

[1] The Commission issued questionnaires to those firms identified in the petitions; staff research; and proprietary, Census-edited Customs' import records.

[2] Nine firms, (***) provided certified responses to the Commission that they did not import CAPEs during the period of data collection. In addition, *** stated they were not the importer of record nor the consignee for CAPEs shipments since January 1, 2021. See email from ***, May 9, 2024.

[3] Petitioner stated that merchandise classified under 2919.90.50 represents the overwhelming majority of subject imports. Conference transcript, p. 26 (Cannon).

[4] Staff confirmed U.S. importer questionnaire receipt and corresponded with several of the largest importers identified by the petitioner (including, among others, ***), but despite several emails, phone calls, and reminders, those firms did not provide questionnaire responses to the Commission. See correspondence with ***. Petition Vol. I, p. 14 and petitioner's postconference brief, p. 22.

Table IV-1
CAPEs: U.S. importers, their headquarters, and share of imports within each source, 2023

Share in percent

Firm	Headquarters	China	Nonsubject sources	All import sources
Eastman	Kingsport, TN	***	***	***
FCI	Rochelle Park, NJ	***	***	***
ICL	St. Louis, MO	***	***	***
Lanxess	Pittsburgh, Pa 15235 United States, PA	***	***	***
M Chemical	Los Angeles, CA	***	***	***
Pur	Cambridge Canada, ON	***	***	***
Purinova	Chicago, IL	***	***	***
Rhino	San Diego, CA	***	***	***
Sigma-Aldrich	St. Louis, MO	***	***	***
SMC Global	New York, NY	***	***	***
St. Louis Group	Indianapolis, IN	***	***	***
Wego	Great Neck, NY	***	***	***
All firms	Various	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. imports

As presented in table IV-2, subject imports consisted of the vast majority of imports during 2021-23 and accounted for *** percent of total imports of CAPEs by quantity and *** percent by value in 2023. The quantity of subject imports increased by *** percent during 2021-23. The increase in U.S. imports from subject sources was accounted for mainly by *** imports between 2021 and 2023.[5] The value of subject imports decreased by *** percent during 2021-23. The average unit value of subject imports steadily decreased by *** percent during 2021-23. The ratio of subject imports to U.S. production increased from *** percent in 2021 to *** percent in 2023.

[5] Of the eleven firms that reported imports of CAPEs from subject sources in 2023 (***) accounted for *** of those imports by quantity.

During 2021-23, nonsubject imports of CAPEs to the United States decreased by *** percent by quantity, while the value of nonsubject imports increased by *** percent. *** accounted for all nonsubject imports in all periods.[6] The average unit value for CAPEs imports from nonsubject sources increased by *** percent from 2021-23 and were approximately two to four times higher than unit values from subject sources. The ratio of nonsubject imports to U.S. production increased from *** percent in 2021 to *** percent in 2023.

Table IV-2
CAPEs: U.S. imports by source and period

Quantity in metric tons; value in 1,000 dollars; unit value in dollars per metric ton

Source	Measure	2021	2022	2023
China	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
China	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	***	***	***
China	Unit value	***	***	***
Nonsubject sources	Unit value	***	***	***
All import sources	Unit value	***	***	***
China	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
China	Share of value	***	***	***
Nonsubject sources	Share of value	***	***	***
All import sources	Share of value	***	***	***
China	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***

Source: Compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and values are landed, duty-paid values.

Note: Staff adjusted data to *** and *** U.S. importer questionnaires to reflect information in metric tons and thousand dollars and reconcile sections II-5b and II-5c to II-5a, respectively.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

[6] *** reported importing from Germany during 2021-23. ***'s U.S. importer questionnaire response, section II-6a. According to Commerce's official U.S. imports statistics, using HTS statistical reporting number 2919.90.5050, the largest nonsubject source of CAPEs during 2021-23 was Germany, followed by India and Switzerland.

Figure IV-1
CAPEs: U.S. import quantities and average unit values, by source and period

* * * * * * *

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

Source: Compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and values are landed, duty-paid values.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[7] 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.[8] Imports from China accounted for *** percent of total imports of CAPEs by quantity during April 2023 through March 2024.

Table IV-3
CAPEs: U.S. imports in the twelve-month period preceding the filing of the petition, April 2023 through March 2024

Quantity in metric tons; share in percent

Source of imports	Quantity	Share of quantity
China	***	***
Nonsubject sources	***	***
All import sources	***	***

Source: Compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and values are landed, duty-paid values.

[7] 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)).

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

Table IV-4 presents U.S. importers' U.S. shipments of CAPEs imports from China by product type and period. TCPP accounted for the largest and growing share of U.S. importers' U.S. shipments every year, with more than *** percent in 2022 and 2023. TEP's share of quantity decreased from *** percent in 2021 to *** percent in 2023, TDCP accounted for less than *** percent in all periods. U.S. importers' U.S. shipments of imports of TCPP increased by *** during 2021-23, while those of TDCP increased by *** percent, although at much lower quantities by comparison. U.S. importers' U.S. shipments of imports of TEP decreased by *** percent during 2021-23. TCPP had the lowest unit values, which decreased by *** percent during from 2021 to 2023. TEP had the second lowest unit values, but they increased by *** from 2021 to 2023. TDCP had the highest unit values, which increased between 2021 and 2023 by *** percent.

Table IV-4
CAPEs: U.S. importers' U.S. shipments of imports from China, by product type and period

Quantity in metric tons; value in 1,000 dollars, unit values in dollars per metric ton

Item	Measure	2021	2022	2023
TCPP	Quantity	***	***	***
TDCP	Quantity	***	***	***
TEP	Quantity	***	***	***
All product types	Quantity	***	***	***
TCPP	Value	***	***	***
TDCP	Value	***	***	***
TEP	Value	***	***	***
All product types	Value	***	***	***
TCPP	Unit value	***	***	***
TDCP	Unit value	***	***	***
TEP	Unit value	***	***	***
All product types	Unit value	***	***	***
TCPP	Share of quantity	***	***	***
TDCP	Share of quantity	***	***	***
TEP	Share of quantity	***	***	***
All product types	Share of quantity	100.0	100.0	100.0
TCPP	Share of value	***	***	***
TDCP	Share of value	***	***	***
TEP	Share of value	***	***	***
All product types	Share of value	100.0	100.0	100.0

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

Table IV-5 presents U.S. importers' U.S. shipments of CAPEs imports from nonsubject sources by product type and period. There were *** U.S. importers' U.S. shipments of imports of CAPEs from nonsubject sources in 2021. ***, the only U.S. importer to report nonsubject imports in 2022 and 2023 and the firm imported only TCPP at decreasing quantities.

Table IV-5
CAPEs: U.S. importers' U.S. shipments of imports from nonsubject sources, by product type and period

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton

Item	Measure	2021	2022	2023
TCPP	Quantity	***	***	***
TDCP	Quantity	***	***	***
TEP	Quantity	***	***	***
All product types	Quantity	***	***	***
TCPP	Value	***	***	***
TDCP	Value	***	***	***
TEP	Value	***	***	***
All product types	Value	***	***	***
TCPP	Unit value	***	***	***
TDCP	Unit value	***	***	***
TEP	Unit value	***	***	***
All product types	Unit value	***	***	***
TCPP	Share of quantity	***	***	***
TDCP	Share of quantity	***	***	***
TEP	Share of quantity	***	***	***
All product types	Share of quantity	---	100.0	100.0
TCPP	Share of value	***	***	***
TDCP	Share of value	***	***	***
TEP	Share of value	***	***	***
All product types	Share of value	---	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Apparent U.S. consumption and market shares

Quantity

Table IV-6 and figure IV-2 present data on apparent U.S. consumption and U.S. market shares by quantity for CAPEs. Apparent U.S. consumption, by quantity, decreased by *** percent from 2021 to 2023. The share of quantity held by U.S. producers decreased by *** percentage points from *** percent in 2021 to *** percent in 2023.

The share of quantity held by subject imports increased by *** percentage points from *** percent in 2021 to *** percent in 2023. The share of quantity held by nonsubject imports increased minimally by *** percentage points from *** percent in 2021 to *** percent in 2023.

Table IV-6
CAPEs: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in metric tons; shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	***	***	***

Source: Compiled data submitted in response to Commission questionnaires and official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and import values are landed, duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Figure IV-2
CAPEs: Apparent U.S. consumption based on quantity, by source and period

* * * * * * *

Source: Compiled data submitted in response to Commission questionnaires and official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and import values are landed, duty-paid values.

Value

Table IV-7 and figure IV-3 present data on apparent U.S. consumption and U.S. market shares by value for CAPEs. Apparent consumption by value decreased by *** percent from 2021 to 2023. The share of value held by U.S. producers decreased by *** percentage points from *** percent in 2021 to *** percent in 2023. The share of value held by subject imports increased by *** percentage points from *** percent in 2021 to *** percent in 2023. The share of value held by nonsubject imports increased by *** percentage points from *** percent in 2021 to *** percent in 2023.

Table IV-7
CAPEs: Apparent U.S. consumption and market shares based on value, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Value	***	***	***
China	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	***	***	***
All sources	Value	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled data submitted in response to Commission questionnaires and official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and import values are landed, duty-paid values.

Figure IV-3
CAPEs: Apparent U.S. consumption based on value, by source and period

* * * * * * *

Source: Compiled data submitted in response to Commission questionnaires and official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024, adjusted based data compiled from Commission questionnaires to add in esters imported under other HTS statistical reporting numbers. Import data are based on the imports for consumption data series, and import values are landed, duty-paid values.

Table IV-8 presents data on U.S. market for TCPP by source and period. U.S. producers' market share for TCPP declined by *** percentage points during 2021-23 and accounted for *** percent of the TCPP market in 2023. U.S. producers' U.S. shipments of TCPP accounted for *** percent of apparent consumption quantity. Market share of subject U.S. importers' U.S. shipments of TCPP increased by *** percentage points during 2021-23 and accounted for *** percent of the TCPP market in 2023. Subject sources accounted for *** percent of apparent consumption quantity in 2023. The market share of nonsubject U.S. importers' U.S. shipments of TCPP decreased by *** percentage points during 2022-23 and accounted for *** percent of the TCPP market in 2023. Nonsubject sources accounted for *** percent of apparent consumption in 2023.

Table IV-8
CAPEs: Market for TCPP, by source and period

Quantity in metric tons; share and ratio in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0
U.S. producers	Ratio	***	***	***
China	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". Ratio is to overall apparent consumption quantity as presented in Table IV-6.

Table IV-9 presents data on U.S. market for TDCP by source and period. U.S. producers' market share for TDCP declined by *** percentage points during 2021-23 and accounted for *** percent of the TDCP market in 2023. U.S. producers' U.S. shipments of TDCP accounted for *** percent of apparent consumption quantity. The market share of subject U.S. importers' U.S. shipments of TDCP increased by *** percentage points during 2021-23 and accounted for *** percent of the TDCP market in 2023. Subject sources accounted for *** percent of apparent consumption quantity in 2023. There were *** nonsubject U.S. importers' U.S. shipments of TDCP during 2021-23.

Table IV-9
CAPEs: Market for TDCP, by source and period

Quantity in metric tons; share and ratio in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0
U.S. producers	Ratio	***	***	***
China	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". Ratio is to overall apparent consumption quantity as presented in Table IV-6.

Table IV-10 presents data on U.S. market for TEP by source and period. U.S. importers' U.S. shipments of TEP from China accounted for *** percent of the TEP market since neither *** nor *** had U.S. shipments of TEP during 2021-23. Subject sources accounted for *** percent of apparent consumption in 2023.

Table IV-10
CAPEs: Market for TEP, by source and period

Quantity in metric tons; share and ratio in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0
U.S. producers	Ratio	***	***	***
China	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". Ratio is to overall apparent consumption quantity as presented in Table IV-6.

Part V: Pricing data

Factors affecting prices

Raw material costs

Raw materials accounted for approximately *** percent of U.S. producers' costs of goods sold in 2021 and 2022 but decreased to approximately *** percent in 2023. The principal raw materials used to produce CAPEs are propylene oxide, chloride, and phosphorous, depending on the formulation of the CAPEs. Costs for propylene oxide and chloride are presented in figure V-1 and table V-1. Propylene oxide costs fluctuated with an overall increase of *** percent over January 2021-December 2023 (*** percent over January 2021-May 2024). Chlorine costs more than tripled from mid-2021 to the end of 2022, and then decreased a bit in 2023 and 2024, with an overall increase of *** percent over January 2021-December 2023 (*** percent over January 2021-May 2024).

Figure V-1
Raw materials: Costs of chlorine and propylene oxide, January 2021-May 2024

* * * * * * *

Source: Petitioners' postconference brief, exhibit 6.

Table V-1
Raw materials: Costs of chlorine and propylene oxide, January 2021-May 2024

Dollars per pound

Year	Month	Chlorine	Propylene oxide
2021	January	***	***
2021	February	***	***
2021	March	***	***
2021	April	***	***
2021	May	***	***
2021	June	***	***
2021	July	***	***
2021	August	***	***
2021	September	***	***
2021	October	***	***
2021	November	***	***
2021	December	***	***
2022	January	***	***
2022	February	***	***
2022	March	***	***
2022	April	***	***
2022	May	***	***
2022	June	***	***
2022	July	***	***
2022	August	***	***
2022	September	***	***
2022	October	***	***
2022	November	***	***
2022	December	***	***
2023	January	***	***
2023	February	***	***
2023	March	***	***
2023	April	***	***
2023	May	***	***
2023	June	***	***
2023	July	***	***
2023	August	***	***
2023	September	***	***
2023	October	***	***
2023	November	***	***
2023	December	***	***
2024	January	***	***
2024	February	***	***
2024	March	***	***
2024	April	***	***
2024	May	***	***

Source: Average prices, petitioners' postconference brief, exhibit 6.

At the staff conference, ICL described China as having a 100 percent export tariff on the phosphorous used to make CAPEs.[1] Similarly, importer FCI stated that Chinese producers have access to abundant supplies of low-cost phosphorous, whereas U.S. producers must source lower-phosphorous content ore in Idaho, or phosphorous from Kazakhstan.[2] U.S. producers and importers generally described raw material costs as fluctuating. Five importers indicated that CAPE's raw materials costs had fluctuated up, three indicated that such costs were unchanged, five that such costs had fluctuated down, and one that such costs had decreased steadily. *** stated that the COVID-19 pandemic had disrupted raw material supplies. *** stated that phosphorous costs had increased, propylene oxide costs had fluctuated with oil prices, and chlorine prices had quadrupled since 2021. *** described the raw materials for TCPP as phosphorous and propylene oxide. It stated that costs of these raw materials had trended downward, but that ICL had not lowered its TCPP prices. *** described *** to produce ***. It continued that phosphorous and propylene oxide costs had fluctuated, but chlorine costs had tripled in 2022 and not decreased since then.

Transportation costs to the U.S. market

Transportation costs for CAPEs shipped from subject countries to the United States averaged 10.7 percent for China during 2023. These estimates were derived from official import data and represent the transportation and other charges on imports.[3]

U.S. inland transportation costs

*** responding U.S. producers and nine importers reported that they typically arrange transportation to their customers, while one importer reported that its customers do.[4] U.S. producers reported that their U.S. inland transportation costs ranged from *** to *** percent while most importers reported costs of *** to *** percent.

[1] Conference transcript, p. 42 (Symes).

[2] Postconference brief of FCI, answers to staff questions, p. 4.

[3] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2023 and then dividing by the customs value based on the HTS statistical reporting number 2919.90.5050, accessed May 7, 2024.

[4] Seven importers indicate that they ship Chinese CAPEs to U.S. customers from a U.S. storage facility, while three importers indicated that they ship from their U.S. point of importation.

Pricing practices

Pricing methods

U.S. producers reported setting prices using transaction-by-transaction negotiations ***. Most importers reported transaction-by-transaction negotiations, but some also reported contracts, set price lists, or *** (table V-2).

Table V-2
CAPEs: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	Importers
Transaction-by-transaction	***	8
Contract	***	4
Set price list	***	2
Other	***	2
Responding firms	***	10

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

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.

U.S. producers and importers reported selling the majority of their CAPEs under short-term contracts, with approximately *** percent sold as spot sales and the balance under long-term contracts (table V-3). U.S. importers sold a majority as spot sales, approximately *** percent as short-term contracts, and smaller amounts as long-term or annual contracts.

Table V-3
CAPEs: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2023

Share in percent

Type of sale	U.S. producers	Subject importers
Long-term contracts	***	***
Annual contracts	***	***
Short-term contracts	***	***
Spot sales	***	***
Total	100.0	100.0

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

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

Regarding short-term contracts, *** offered contracts of *** days, while three importers offered contracts of *** days. *** indicated that their short-term contracts did not allow price renegotiation, fixed price, and were not indexed to raw materials.

Two importers indicated that their annual contracts allowed price renegotiation and either fixed price or fixed price and quantity. They added that annual contracts were not indexed to raw materials.

U.S. producer *** and importer *** offered long-term contracts with durations of *** and *** years respectively. *** elaborated that such contracts ***.

Sales terms and discounts

Two U.S. producers and seven importers typically quote prices on a delivered basis. Three importers quoted prices on an f.o.b. basis. *** quoted prices on both an f.o.b. and delivered basis. *** offered quantity discounts and annual total volume discounts, as well as responding to (not necessarily matching) competitive pricing. *** and seven importers did not offer discounts. Four importers (including ***) offered various types of discounts, some with a limited number of customers.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following CAPEs products shipped to unrelated U.S. customers during January 2021-December 2023.

Product 1.-- Tris (2-chloroisopropyl) phosphate (TCPP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

Product 2.-- Tris (1,3-dichloroisopropyl) phosphate (TDCP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

Two U.S. producers and seven importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[5] Pricing data reported by these firms accounted for approximately *** percent of U.S.

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

producers' U.S. commercial shipments of CAPEs and *** percent of U.S. commercial shipments of subject imports from China (*** percent of all Chinese imports) in 2023.[6]

Price data for products 1-2 are presented in tables V-4 to V-5 and figures V-2 to V-3.

Table V-4
CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Price in dollars per metric ton, quantity in metric tons, margin in percent.

Period	US price	US quantity	China price	China quantity	China margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

Note: Product 1: Tris (2-chloroisopropyl) phosphate (TCPP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

[6] Pricing coverage is based on U.S. shipments reported in questionnaires. A few quarters of data with low *** from *** were removed. *** *** provided data on a ***.

Figure V-2
CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

Price of product 1

* * * * * * *

Volume of product 1

* * * * * * *

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

Note: Product 1: Tris (2-chloroisopropyl) phosphate (TCPP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

Table V-5
CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

Price in dollars per metric ton, quantity in metric tons, margin in percent.

Period	US price	US quantity	China price	China quantity	China margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

Note: Product 2: Tris (1,3-dichloroisopropyl) phosphate (TDCP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

Figure V-3
CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

Price of product 2

* * * * * * *

Volume of product 2

* * * * * * *

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

Note: Product 2: Tris (1,3-dichloroisopropyl) phosphate (TDCP), bulk liquid, in drums, tanks or other bulk containers greater than 250 kg capacity.

Price trends

U.S. prices for both products and imported prices for product 2 increased during January 2021-December 2023, while imported prices for product 1 decreased.[7] Table V-6 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** to *** percent during January 2021-December 2023 while import prices decreased *** percent for product 1 and increased *** percent for product 2.

Table V-6
CAPEs: Summary of price data, by product and source, January 2021-December 2023

Quantity in metric tons, price in dollars per metric ton

Product	Source	Number of quarters	Quantity of shipments	Low price	High price	First quarter price	Last quarter price	Percent change in price over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	China	***	***	***	***	***	***	***
Product 2	United States	***	***	***	***	***	***	***
Product 2	China	***	***	***	***	***	***	***

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

Note: Percent change column is percentage change from the first quarter 2021 to the last quarter of 2023.

Price comparisons

As shown in table V-7, prices for product imported from China were below those for U.S.-produced product in 8 of 24 instances (*** metric tons); margins of underselling ranged from *** to *** percent. In the remaining 16 instances (*** metric tons), prices for product from China were between *** to *** percent above prices for the domestic product.

In its postconference brief, ICL stated that pricing product volumes represent a small share of total imports from China, especially with respect to product 2.[8]

[7] Prices for U.S. product 1 increased from the first quarter of 2021 to the first quarter of 2022, and then decreased through the fourth quarter of 2023, ending with an overall increase.

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

Table V-7
CAPEs: Instances of underselling and overselling and the range and average of margins, by product

Quantity in metric tons; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	***	***	***	***	***
Product 2	Underselling	***	***	***	***	***
Total, all products	Underselling	8	***	***	***	***
Product 1	Overselling	***	***	***	***	***
Product 2	Overselling	***	***	***	***	***
Total, all products	Overselling	16	***	***	***	***

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

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

Lost sales and lost revenue

Of the two responding U.S. producers, *** reported that they had to either reduce prices or roll back announced price increases, and *** reported that they had lost sales. *** submitted 21 lost sales and lost revenue allegations, 12 of which were lost sales and 9 of which were both lost sales and lost revenue allegations.[9]

Staff contacted 17 purchasers and received responses from 7 purchasers. Responding purchasers reported purchasing 41,581 metric tons of CAPEs during January 2021-December 2023 (table V-8).

During 2023, responding purchasers purchased 15.9 percent from U.S. producers, 77.0 percent from China, and 7.1 percent from unknown sources.

Of the seven responding purchasers, all reported that, since 2021, they had purchased imported CAPEs from China instead of U.S.-produced product and that Chinese import prices were lower than U.S.-produced product. Five of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Five purchasers estimated the quantity of CAPEs from China purchased instead of domestic product; quantities ranged from 141 metric tons to 4017 metric tons (table V-9). Purchasers identified availability as the principal non-price reason for purchasing imported rather than U.S.-produced product.

[9] ***.

Of the seven responding purchasers, two reported that U.S. producers had reduced prices in order to compete with lower-priced imports from China; two reported that they did not know (table V-10). The reported estimated price reduction ranged from *** to *** percent. In describing the price reductions, purchasers indicated that domestic prices increased in 2022 and remained higher than Chinese prices. ***.

In additional comments, ***. ***.

Table V-8
CAPEs: Purchasers' reported purchases and imports, by firm and source

Quantity in metric tons, share changes in percentage points

Purchaser	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Change in subject country share
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	***	***	***	***	***

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

Note: All other includes all other sources and unknown sources. Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

Table V-9
CAPEs: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in metric tons

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--7; No--0	Yes--7; No--0	Yes--5; No--2	***	NA

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

Table V-10
CAPEs: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	Reported producers lowered prices	Estimated percent of U.S. price reduction	Explanation
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
All firms	Yes--2; No--3	***	NA

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

Changes in purchasing patterns

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2021 (table V-11). Purchasers generally reported decreased purchases of U.S.-produced product and increased purchases from China. In describing reasons for decreased purchases of U.S. product, *** cited business needs and price, *** cited price, NCFI cited product availability, *** cited consistency and price, *** stated that U.S. product was 200 percent more expensive than imports, *** described U.S. prices as increasing 167 percent in 2021 and 2022 and not falling at a competitive rate at the end of the pandemic, and *** cited wanting additional sources in

order to ensure security of supply. Purchasers cited similar or the same reasons for increased purchases of Chinese product, although *** described the reason as competitive pricing, and *** described Chinese prices as "only" increasing 116 percent in 2021 and 2022 before returning to previous levels.

Table V-11
CAPEs: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Steadily increased	Fluctuated up	No change	Fluctuated down	Steadily decreased
United States	0	1	0	1	6
China	4	2	0	1	0
Nonsubject sources	0	0	0	0	0
Sources unknown	1	0	0	0	0

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

Note: ***.

Part VI: Financial experience of U.S. producers

Background[1]

Two U.S. producers provided usable financial results on their CAPEs operations. Both U.S. producers reported financial data for a fiscal year ending on December 31, and on the basis of International Financial Reporting Standards ("IFRS").

The industry's net sales are primarily commercial sales, but a ***.[2] *** and is not shown separately in this section of the report. Figure VI-1 presents the firms' share of the total reported net sales quantity in 2023.

[1] The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

[2] ***. Email from ***.

Figure VI-1
CAPEs: U.S. producers' share of net sales quantity in 2023, by firm

* * * * * * *

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

Operations on CAPEs

Table VI-1 presents aggregated data on U.S. producers' operations in relation to CAPEs, while table VI-2 presents corresponding changes in AUVs. Table VI-3 presents selected company-specific financial data.

Table VI-1
CAPEs: U.S. producers' results of operations, by item and period

Quantity in metric tons; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
Total net sales	Quantity	***	***	***
Total net sales	Value	***	***	***
COGS: Raw materials	Value	***	***	***
COGS: Direct labor	Value	***	***	***
COGS: Other factory	Value	***	***	***
COGS: Total	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Other expense / (income), net	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Cash flow	Value	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table VI-1 Continued
CAPEs: U.S. producers' results of operations, by item and period

Shares in percent; unit values in dollars per metric ton; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share of COGS	***	***	***
COGS: Direct labor	Share of COGS	***	***	***
COGS: Other factory	Share of COGS	***	***	***
COGS: Total	Share of COGS	***	***	***
Total net sales	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	***	***	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VI-2
CAPEs: Changes in AUVs between comparison periods

Changes in percent

Item	2021-23	2021-22	2022-23
Total net sales	▲***	▲***	▼***
COGS: Raw materials	▲***	▲***	▲***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▲***	▲***	▲***
COGS: Total	▲***	▲***	▲***

Table continued.

Table VI-2 Continued
CAPEs: Changes in AUVs between comparison periods

Changes in dollars per metric ton

Item	2021-23	2021-22	2022-23
Total net sales	▲***	▲***	▼***
COGS: Raw materials	▲***	▲***	▲***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▲***	▲***	▲***
COGS: Total	▲***	▲***	▲***
Gross profit or (loss)	▼***	▲***	▼***
SG&A expense	▲***	▲***	▲***
Operating income or (loss)	▼***	▲***	▼***
Net income or (loss)	▼***	▲***	▼***

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

Note: Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

Table VI-3
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in metric tons

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales value

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratios in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratios in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net sales value

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit raw material costs

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit direct labor costs

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit other factory costs

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit gross profit or (loss)

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit SG&A expenses

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit operating income or (loss)

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net income or (loss)

Unit values in dollars per metric ton

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Net sales

The industry's net sales volume decreased by *** percent from 2021 to 2023, while net sales revenue decreased by *** percent during this time. The net sales AUV increased from $*** per metric ton in 2021 to $*** per metric ton in 2022 and then decreased to $*** per metric ton in 2023, for an overall increase of *** percent from 2021 to 2023.

As shown in table VI-3, *** between 2021 and 2023.[3] ***.

Cost of goods sold and gross profit or loss

Raw material costs represented the largest share of total COGS for CAPEs during the period examined, accounting for between *** percent in 2023 and *** percent in 2021. The industry's total raw material costs decreased from 2021 to 2023 commensurate with the decrease in net sales volumes, however raw material cost AUVs increased from $*** per metric ton in 2021 to $*** per metric ton in 2023, with the majority of the increase occurring between 2021 and 2022. ***.

[3] ***.

Table VI-4 presents 2023 raw material costs, by type. The table shows that alcohol or epoxide and phosphorous oxychloride are the two primary raw material inputs for CAPEs and combined, they account for the large majority of the industry's raw material costs. In 2023, alcohol or epoxide accounted for a higher share of the raw material costs than phosphorous oxychloride. Both companies reported ***.[4]

Table VI-4
CAPEs: U.S. producers' raw material costs in 2023

Value in 1,000 dollars; unit values in dollars per metric ton; share of value in percent

Item	Value	Unit value	Share of value
Alcohol or epoxide	***	***	***
Phosphorous oxychloride	***	***	***
Other material inputs	***	***	***
Total, raw materials	***	***	***

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

Direct labor was the smallest component of total COGS in each year, representing between *** and *** percent during the period examined. Direct labor AUVs increased from $*** per metric ton in 2021 to $*** per metric ton in 2023.

Other factory costs accounted for the second-largest share of COGS during the period examined, accounting for between *** percent in 2021 and *** percent in 2023. The noticeable increase in other factory costs as a share of total COGS between 2021 and 2023 can largely be explained by the decrease in net sales volume. Unlike raw material costs and direct labor, other factory costs contain fixed costs that remain the same despite changes in sales. Despite the industry's other factory costs decreasing from $*** in 2021 to $*** in 2023, the decrease in the industry's net sales volume resulted in other factory costs increasing on a per-metric ton basis, from $*** in 2021 to $*** in 2023.

The industry's total COGS AUV increased each year between 2021 and 2023. The ratio of COGS to net sales decreased between 2021 and 2022, from *** percent to *** percent, and then increased to *** percent in 2023. The *** improvement in the COGS to net sales ratio in 2022 was attributable to the increase in the industry's net sales AUV since the COGS AUV also increased that year. ***. ***

[4] U.S. producer questionnaire responses, section III-9c.

***.

The industry's gross profit increased from $*** in 2021 to a period-high $*** in 2022 before decreasing to $*** in 2023. ***. However, ***.[5]

SG&A expenses and operating income or loss

The industry's SG&A expenses decreased from 2021 to 2023. SG&A expenses as a ratio to net sales increased irregularly, first decreasing from *** percent in 2021 to *** percent in 2022 and then increasing to *** percent in 2023.

The industry's operating income increased from $*** in 2021 to $*** in 2022 and decreased to $*** in 2023.[6] The operating income margin increased from *** percent in 2021 to *** percent in 2022 and then decreased to *** percent in 2023.

All other expenses and net income or loss

Classified below the operating income level are interest expense, other expense, and other income. In table VI-1, these items are aggregated and only the net amount is shown. ***.[7] It reported ***.[8]

The *** amounts other expenses/(income) resulted in net income not *** from operating income. Net income increased from $*** in 2021 to $*** in 2022 and decreased to $*** in 2023. The net income margin increased from *** percent in 2021 to *** percent in 2022 and then decreased to *** percent in 2023.

[5] ***.

[6] ***.

[7] ***. *** U.S. producer questionnaire response, section III-8.

[8] *** U.S. producer questionnaire response, section III-9a.

Variance analysis

A variance analysis for the CAPEs operations of U.S. producers is presented in table VI-5.[9] The information for this variance analysis is derived from table VI-1. The variance analysis shows that the $*** decrease in operating income between 2021 and 2023 was attributable to an unfavorable operating income volume variance of $*** and an unfavorable operating income cost variance of $***, despite a favorable price variance of $*** (i.e., the combined negative effects of the decrease in sales volume and the increase in per-unit costs/expenses were larger than the positive effect of the increases in net sales AUVs).

Table VI-5
CAPEs: Variance analysis on the operations of U.S. producers between comparison periods

Value in 1,000 dollars

Item	2021-23	2021-22	2022-23
Net sales price variance	***	***	***
Net sales volume variance	***	***	***
Net sales total variance	***	***	***
COGS cost variance	***	***	***
COGS volume variance	***	***	***
COGS total variance	***	***	***
Gross profit variance	***	***	***
SG&A cost variance	***	***	***
SG&A volume variance	***	***	***
SG&A total variance	***	***	***
Operating income price variance	***	***	***
Operating income cost variance	***	***	***
Operating income volume variance	***	***	***
Operating income total variance	***	***	***

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

Note: These data are derived from the data in table VI-1. Unfavorable variances (which are negative) are shown in parentheses, all others are favorable (positive).

[9] 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 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.

Capital expenditures and research and development expenses

Table VI-6 presents capital expenditures, by firm, and table VI-8 presents R&D expenses, by firm. Tables VI-7 and VI-9 present the firms' narrative explanations of the nature, focus, and significance of their capital expenditures and R&D expenses, respectively. Capital expenditures, which were ***, decreased from $*** in 2021 to $*** in 2023. R&D expenses, the ***, decreased overall between 2021 and 2023.

Table VI-6
CAPEs: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

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

Table VI-7
CAPEs: U.S. producers' narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
ICL	***
Lanxess	***

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

Table VI-8
CAPEs: U.S. producers' R&D expenses, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

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

Table VI-9
CAPEs: U.S. producers' narrative descriptions of their R&D expenses, by firm

Firm	Narrative on R&D expenses
ICL	***
Lanxess	***

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

Assets and return on assets

Table VI-10 presents data on the U.S. producers' total assets while table VI-11 presents their operating ROA.[10] Table VI-12 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time. Total net assets decreased from 2021 to 2023. The operating ROA varied during the period examined. It increased from 2021 to 2022 and decreased *** in 2023.

Table VI-10
CAPEs: U.S. producers' total net assets, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

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

Table VI-11
CAPEs: U.S. producers' operating ROA, by firm and period

Ratio in percent

Firm	2021	2022	2023
ICL	***	***	***
Lanxess	***	***	***
All firms	***	***	***

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

Table VI-12
CAPEs: U.S. producers' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
ICL	***
Lanxess	***

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

[10] The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value on a product-specific basis.

Capital and investment

The Commission requested U.S. producers of CAPEs to describe any actual or potential negative effects of imports of CAPEs from China on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-13 presents the number of firms reporting an impact in each category and table VI-14 provides the U.S. producers' narrative responses.

Table VI-13
CAPEs: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2021, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	***
Denial or rejection of investment proposal	Investment	***
Reduction in the size of capital investments	Investment	***
Return on specific investments negatively impacted	Investment	***
Other investment effects	Investment	***
Any negative effects on investment	Investment	***
Rejection of bank loans	Growth	***
Lowering of credit rating	Growth	***
Problem related to the issue of stocks or bonds	Growth	***
Ability to service debt	Growth	***
Other growth and development effects	Growth	***
Any negative effects on growth and development	Growth	***
Anticipated negative effects of imports	Future	***

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

Table VI-14
CAPEs: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2021, by firm and effect

Item	Firm name and narrative on impact of imports
***	***
***	***
***	***
***	***
***	***
***	***
***	***

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

Part VII: Threat considerations and information on nonsubject countries

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

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

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

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

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

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

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

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

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

The industry in China

The Commission issued foreign producers' or exporters' questionnaires to 63 firms believed to produce and/or export CAPEs from China.[3] Usable responses to the Commission's questionnaire were received from three firms: Anhui Shengli Pesticide & Chemistry Co. Ltd. ("Anhui"), Jilin Yonglin Chemical Co., Ltd. ("Jilin Yonglin"), and Shanghai Yongxiangshun Int'l Trade Co., Ltd ("Shanghai Yongxiangshun"). These firms' exports to the United States accounted for approximately *** percent of U.S. imports of CAPEs from China in 2023. According to estimates requested of the responding producers in China, the production of CAPEs in China reported in questionnaires accounts for approximately *** percent of overall production of CAPEs in China. Tables VII-1 and VII-2 present information on the CAPEs operations of the responding producers and exporters in China.[4]

Table VII-1
CAPEs: Summary data for producers in China, 2023

Quantity in metric tons; share in percent

Producer	Production (metric tons)	Share of reported production (percent)	Exports to the United States (metric tons)	Share of reported exports to the United States (percent)	Total shipments (metric tons)	Share of firm's total shipments exported to the United States (percent)
Anhui	***	***	***	***	***	***
Jilin Yonglin	***	***	***	***	***	***
Shanghai Yongxiangshun	***	***	***	***	***	***
All individual producers	***	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

[3] These firms were identified through a review of information submitted in the petition and presented in third-party sources.

[4] The following firms provided certified responses to the Commission that they are not foreign producers of CAPEs, ***, ***; ***; ***; and ***.

Table VII-2
CAPEs: Summary data for resellers in China, 2023

Resellers	Resales exported to the U.S. (metric tons)	Share of resales exported to the U.S. (percent)
Anhui	***	***
Shanghai Yongxiangshun	***	***
All resellers	***	***

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

Changes in operations

Producers in China were asked to report any change in the character of their operations or organization relating to the production of CAPEs since 2021. One of three producers indicated in its questionnaire that it had experienced such changes. Table VII-3 presents the changes identified by the producer.

Table VII-3
CAPEs: Reported changes in operations in China since January 1, 2021, by firm

Item	Firm name and accompanying narrative response regarding changes in operations
Other	***

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

Operations on CAPEs

Table VII-4 presents data on China producers' installed capacity, practical overall capacity, and practical CAPEs capacity and production on the same equipment.

Chinese producers' installed and practical overall capacity declined by *** percent during 2021-23, while installed and practical overall production also decreased by *** percent in the same period. Installed and practical overall capacity utilization rates decreased by *** percentage points from 2021 to 2023 but remained well above *** percent throughout the period, ending in *** percent in 2023. Practical CAPEs capacity decreased by *** percent during 2021-23 while production also fell by *** percent in the same period.[5] CAPEs utilization rates decreased by *** percentage points between 2021 and 2023, and ranged from *** percent in 2021 to *** percent in 2023.

[5] This decline is driven by *** which reported a decrease in capacity by *** percent between 2021 and 2023. Foreign producers' questionnaires, section II-3a.

Table VII-4
CAPEs: Producers in China installed and practical capacity and production on the same equipment as in-scope production, by period

Quantity in metric tons; utilization in percent

Item	Measure	2021	2022	2023
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical phosphate esters	Capacity	***	***	***
Practical phosphate esters	Production	***	***	***
Practical phosphate esters	Utilization	***	***	***

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

One foreign producer in China reported constraints on practical overall capacity. Table VII-5 presents ***'s reported capacity constraints since January 1, 2021.

Table VII-5
CAPEs: Producers in China reported capacity constraints since January 1, 2021

Item	Firm name and narrative response on constraints to practical overall capacity
Other constraints	***

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

Table VII-6 presents information on the CAPEs operations of the responding producers and exporters in China. As discussed above, foreign producers from China reported declining aggregate capacity and production during 2021-23 but projected increases of *** percent in 2024 and *** percent in 2025.[6] Likewise, aggregate CAPEs production in China is estimated to increase by *** percent in 2024 and by *** percent in 2025.[7] Home market shipments declined by *** percent during 2021-23 and accounted for *** percent of total shipments in 2023. Exports to the United States increased by *** percent during 2021-23 and accounted for *** percent of total shipments in 2023. Exports to the United States are projected to decrease by *** percent from 2023 to 2024, and then increase by *** percent from 2024 to 2025.[8] Exports to all other markets accounted for *** percent of total shipments and are expected to increase in 2024 and remain the same in 2025.[9]

Table VII-6
CAPEs: Data on industry in China, by period

Quantity in metric tons

Item	2021	2022	2023	Projection 2024	Projection 2025
Capacity	***	***	***	***	***
Production	***	***	***	***	***
End-of-period inventories	***	***	***	***	***
Internal consumption	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***
Home market shipments	***	***	***	***	***
Exports to the United States	***	***	***	***	***
Exports to all other markets	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
Resales exported to the United States	***	***	***	***	***
Total exports to the United States	***	***	***	***	***

Table continued.

[6] Since neither *** nor *** reported changes in projected capacity, this figure reflects only ***'s projections for 2024 and 2025.

[7] In the same way, since the other firms did not report changes in production levels, these data covers only ***'s projection levels for 2024 and 2025.

[8] Only *** reported resales to the United States. *** did not report any exports to the United States during 2021-22 and *** reported no exports to the United States in 2023. Foreign producer questionnaires, sections II-9 and 10.

[9] *** identified the southeast region as its principal export market, and *** reported exporting mostly to Europe. *** reported that Europe, India, and Russia are its main export markets. Foreign producer questionnaires, section II-9.

Table VII-6 Continued
CAPEs: Data on industry in China, by period

Ratio and share in percent

Item	2021	2022	2023	Projection 2024	Projection 2025
Capacity utilization ratio	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***
Internal consumption share	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***
Home market shipments share	***	***	***	***	***
Exports to the United States share	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***
Export shipments share	***	***	***	***	***
Total shipments share	***	***	***	***	***
Share of total exports to the United States exported by producers	***	***	***	***	***
Share of total exports to the United States by resellers	***	***	***	***	***
Adjusted share of total shipments exported to the U.S.	***	***	***	***	***

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

Note: Two of three firms (***) reported resales exported to the U.S., but only *** reported 2025 projections. Due to ***'s anomalous reported 2025 projections, Staff adjusted it to the same levels as 2024.

Note: *** reported that 100 percent of its 2023 U.S. exports go to ***.

Note: *** reported that it has a related U.S. importer ***, which was *** importer of CAPEs according to ships' manifest data. Foreign producer's questionnaire response, section I-4 and Petitioner's postconference brief, p. 43.

Alternative products

As shown in table VII-7, one responding firm in China (***) produced other products on the same equipment and machinery used to produce CAPEs. CAPEs accounted for approximately *** of total production of the same equipment as in-scope production in 2023, down from *** percent in 2021. *** responding producer in China reported being able to shift production between CAPEs and other products. It is unclear whether the "other products" reported by*** are Triethyl Phosphates (TEP). However, *** declined to respond to requests for clarification from Staff. (See follow up to foreign producer questionnaire May 21, 2024).

Table VII-7
CAPEs: Producers' in China overall production on the same equipment as in-scope production, by period

Quantity in metric tons; ratio and share in percent

Product type	Measure	2021	2022	2023
CAPEs	Quantity	***	***	***
Other products	Quantity	***	***	***
All products	Quantity	***	***	***
CAPEs	Share	***	***	***
Other products	Share	***	***	***
All products	Share	***	***	***

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

Note: *** reported that its factory has a total of three alkyl phosphate products, TCPP, TCEP, and TDCP. TCPP and TCEP share the production line, and the factory adjusts the production capacity according to market demand.

Exports

According to GTA, the leading export markets for aromatic phosphoric acid from China are the United States, Netherlands, and South Korea (table IV-8). During 2023, the United States was the top export market for aromatic phosphoric acid from China, accounting for 19.8 percent, followed by the Netherlands, accounting for 14.5 percent.

Table VII-8
Aromatic phosphoric esters: Exports from China, by destination market and by period

Quantity in metric tons; value in 1,000 dollars

Destination market	Measure	2021	2022	2023
United States	Quantity	58,524	53,899	56,101
Netherlands	Quantity	46,920	42,502	40,968
South Korea	Quantity	34,965	28,442	29,508
Turkey	Quantity	9,939	11,328	15,408
Canada	Quantity	13,461	10,312	12,921
Russia	Quantity	9,978	8,092	11,891
Spain	Quantity	12,941	11,309	11,768
Japan	Quantity	9,117	7,733	9,762
Thailand	Quantity	11,096	7,674	8,952
All other destination markets	Quantity	91,506	84,672	85,555
Non-U.S. destination markets	Quantity	239,923	212,064	226,733
All destination markets	Quantity	298,447	265,963	282,834
United States	Value	161,045	118,046	90,708
Netherlands	Value	135,719	90,901	63,909
South Korea	Value	127,208	80,480	63,474
Turkey	Value	27,061	22,386	23,506
Canada	Value	36,452	20,898	18,159
Russia	Value	26,406	17,008	19,443
Spain	Value	36,342	22,987	17,972
Japan	Value	28,079	18,699	18,836
Thailand	Value	38,682	26,544	23,728
All other destination markets	Value	335,138	268,649	191,839
Non-U.S. destination markets	Value	791,088	568,553	440,865
All destination markets	Value	952,132	686,599	531,573

Table continued.

Table VII 8 Continued
Aromatic phosphoric esters: Exports from China, by destination market and by period

Unit value in dollars per metric ton; share in percent

Destination market	Measure	2021	2022	2023
United States	Unit value	2,752	2,190	1,617
Netherlands	Unit value	2,893	2,139	1,560
South Korea	Unit value	3,638	2,830	2,151
Turkey	Unit value	2,723	1,976	1,526
Canada	Unit value	2,708	2,027	1,405
Russia	Unit value	2,646	2,102	1,635
Spain	Unit value	2,808	2,033	1,527
Japan	Unit value	3,080	2,418	1,930
Thailand	Unit value	3,486	3,459	2,651
All other destination markets	Unit value	3,662	3,173	2,242
Non-U.S. destination markets	Unit value	3,297	2,681	1,944
All destination markets	Unit value	3,190	2,582	1,879
United States	Share of quantity	19.6	20.3	19.8
Netherlands	Share of quantity	15.7	16.0	14.5
South Korea	Share of quantity	11.7	10.7	10.4
Turkey	Share of quantity	3.3	4.3	5.4
Canada	Share of quantity	4.5	3.9	4.6
Russia	Share of quantity	3.3	3.0	4.2
Spain	Share of quantity	4.3	4.3	4.2
Japan	Share of quantity	3.1	2.9	3.5
Thailand	Share of quantity	3.7	2.9	3.2
All other destination markets	Share of quantity	30.7	31.8	30.2
Non-U.S. destination markets	Share of quantity	80.4	79.7	80.2
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official export statistics under HS subheading 2919.90, as reported by China Customs in the Global Trade Atlas database, accessed May 7, 2024.

Note: United States is shown at the top. All remaining top export destinations are shown in descending order of 2023 data.

U.S. inventories of imported merchandise

Table VII-9 presents data on U.S. importers' reported inventories of CAPEs. U.S. importers' end-of-period inventories of imports from China decreased by over *** from 2021 to 2022 and nearly *** from 2022 to 2023, decreasing overall by *** percent from 2021 to 2023. The ratio of ending inventories to imports from China declined by *** percentage points between 2021 and 2023. The ratio of inventories to U.S. shipments of imports from China decreased by *** percentage points between 2021 and 2023. Similarly, the ratio to total shipments of imports from China declined by *** percentage points from 2021 to 2023. U.S. importers reported small amounts of inventories in 2021 and 2023 from

nonsubject sources and none for 2022. Therefore, ending inventories' trends from all sources are similar to those of subject sources.

Table VII-9
CAPEs: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in metric tons; ratio in percent

Measure	Source	2021	2022	2023
Inventories quantity	China	***	***	***
Ratio to imports	China	***	***	***
Ratio to U.S. shipments of imports	China	***	***	***
Ratio to total Shipments of imports	China	***	***	***
Inventories quantity	Nonsubject	***	***	***
Ratio to imports	Nonsubject	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***
Ratio to total Shipments of imports	Nonsubject	***	***	***
Inventories quantity	All	***	***	***
Ratio to imports	All	***	***	***
Ratio to U.S. shipments of imports	All	***	***	***
Ratio to total Shipments of imports	All	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of CAPEs from China after December 31, 2023. Six of the 12 reporting importers from China indicated they had arranged imports from subject sources. By comparison, much smaller volumes were arranged from nonsubject sources through June 2024, but none for the remainder of the year. Their reported data is presented in table VII-10

Table VII-10
CAPEs: U.S. importers' arranged imports, by source and period

Quantity in metric tons

Source	Jan-Mar 2024	Apr-Jun 2024	Jul-Sep 2024	Oct-Dec 2024	Total
China	***	***	***	***	***
Nonsubect sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Third-country trade actions

In 2023, ICL Europe U.A., Lanxess Deutschland GmbH, and PCC Rokita S.A. petitioned the European Commission for relief from unfairly traded and subsidized imports of certain alkyl phosphate esters from China.[10] These petitions are with regard to TCPP and TEP but do not include TDCP.

The EC initiated an anti-dumping investigation on August 11, 2023, and an anti-subsidy proceeding on December 21, 2023, regarding certain alkyl phosphate esters originating in China. On April 10, 2024, the EC imposed provisional anti-dumping duties ranging from 45.1 percent to 68.4 percent for participating companies and 59.1 percent for all others.[11] A preliminary decision in the anti-subsidy investigation is due in June 2024.[12]

Information on nonsubject countries

Table VII-11 presents GTA data for global exports of other phosphoric esters and their salts, including lactophosphates; their halogenated, sulfonated, nitrated or nitrosated derivatives (an HS classification that includes CAPEs and out-of-scope goods). Based on the GTA data, Germany and the Netherlands were the most significant nonsubject exporters in 2023. Petitioners stated during the conference that only a few global producers of CAPEs exist outside of China and the United States. ICL and Lanxess in Germany and Rokita in Poland are the only nonsubject producers of CAPEs.[13] ICL is the only producer of TDCP in the EU.[14]

[10] Pet. Vol I exh. I-3A; Conference transcript, p. 15 (Symes).
[11] Pet. Vol. I, exhs. I-3A and I-3B; Petitioner's postconference brief, p. 44.
[12] Pet. Vol. I, exh. I-3C; Petitioner's postconference brief, p. 44.
[13] Conference transcript, pp. 34 and 60-61 (Symes); Petitioner's postconference brief, p. 18.
[14] Conference transcript, pp. 34 and 60-61 (Symes).

Table VII-11
CAPEs: Global exports by exporter and period

Quantity in metric tons; value in 1,000 dollars

Exporting country	Measure	2021	2022	2023
United States	Quantity	11,965	8,368	6,944
China	Quantity	298,447	265,963	282,834
Germany	Quantity	49,100	27,754	23,342
Netherlands	Quantity	26,547	21,475	16,970
Italy	Quantity	4,201	6,061	6,476
Japan	Quantity	14,821	9,444	6,156
Taiwan	Quantity	4,333	5,460	5,391
Spain	Quantity	5,863	6,816	3,658
Poland	Quantity	5,865	4,076	3,640
Belgium	Quantity	3,354	3,394	2,949
India	Quantity	1,729	1,652	2,056
All other exporters	Quantity	11,674	8,333	10,565
All reporting exporters	Quantity	437,899	368,796	370,981
United States	Value	58,312	54,183	45,814
China	Value	952,132	686,599	531,573
Germany	Value	196,527	153,889	108,317
Netherlands	Value	95,200	76,763	55,822
Italy	Value	30,989	44,037	46,688
Japan	Value	91,400	67,596	48,376
Taiwan	Value	18,550	23,345	16,140
Spain	Value	19,439	20,950	8,594
Poland	Value	18,764	12,098	8,730
Belgium	Value	18,739	19,483	16,426
India	Value	11,864	17,644	23,104
All other exporters	Value	76,494	70,402	78,396
All reporting exporters	Value	1,588,410	1,246,989	987,980

Table continued.

Table VII-11 Continued
CAPEs: Global exports by exporter and period

Unit value in dollars per metric ton; shares in percent

Exporting country	Measure	2021	2022	2023
United States	Unit value	4,874	6,475	6,598
China	Unit value	3,190	2,582	1,879
Germany	Unit value	4,003	5,545	4,640
Netherlands	Unit value	3,586	3,575	3,289
Italy	Unit value	7,376	7,266	7,209
Japan	Unit value	6,167	7,158	7,858
Taiwan	Unit value	4,281	4,276	2,994
Spain	Unit value	3,316	3,074	2,349
Poland	Unit value	3,199	2,968	2,398
Belgium	Unit value	5,587	5,741	5,570
India	Unit value	6,862	10,680	11,237
All other exporters	Unit value	6,553	8,449	7,420
All reporting exporters	Unit value	3,627	3,381	2,663
United States	Share of quantity	2.7	2.3	1.9
China	Share of quantity	68.2	72.1	76.2
Germany	Share of quantity	11.2	7.5	6.3
Netherlands	Share of quantity	6.1	5.8	4.6
Italy	Share of quantity	1.0	1.6	1.7
Japan	Share of quantity	3.4	2.6	1.7
Taiwan	Share of quantity	1.0	1.5	1.5
Spain	Share of quantity	1.3	1.8	1.0
Poland	Share of quantity	1.3	1.1	1.0
Belgium	Share of quantity	0.8	0.9	0.8
India	Share of quantity	0.4	0.4	0.6
All other exporters	Share of quantity	2.7	2.3	2.8
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official export statistics under HS subheading 2919.90, as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed May 7, 2024.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order of 2023 data.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, Federal Register notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
89 FR 34270, April 30, 2024	*Alkyl Phosphate Esters From China; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-04-30/pdf/2024-09183.pdf
89 FR 43801, May 20, 2024	*Certain Alkyl Phosphate Esters From the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2024-05-20/pdf/2024-10934.pdf
89 FR 43821, May 20, 2024	*Certain Alkyl Phosphate Esters from the People's Republic of China: Initiation of Countervailing Duty Investigation*	https://www.govinfo.gov/content/pkg/FR-2024-05-20/pdf/2024-10935.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:

Subject: Alkyl Phosphate Esters from China

Inv. Nos.: 701-TA-721 and 731-TA-1689 (Preliminary)

Date and Time: May 14, 2024 - 9:45 a.m.

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

OPENING REMARKS:

In Support of Imposition (**Mary Jane Alves**, Cassidy Levy Kent (USA) LLP)

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

Cassidy Levy Kent (USA) LLP
Washington, DC
on behalf of

ICL-IP America, Inc., a subsidiary of the ICL Group

Greg Symes, Global Marketing Director,
Building and Construction Flame Retardants, ICL Group, ICL-IP America, Inc.

Roger Steele, Gallipolis Ferry Plant Manager, ICL-IP America, Inc.

Kathleen Molamphy, Vice President and General Counsel, ICL Americas LLC

James R. Cannon, Jr.)
Mary Jane Alves) – OF COUNSEL
Stephen A. Laufer)

INTERESTED PARTY IN OPPOSITION:

FCI USA Inc.
Rochelle Park, NJ

Michael Valentim, Vice President

Greg Heden, Senior Sales and Marketing Manager

Daniel Gagliano, Sales and Marketing Manager

Jordan Goldberg, Procurement and Logistics Specialist

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**James R. Cannon, Jr.**, Cassidy Levy Kent (USA) LLP)

APPENDIX C

SUMMARY DATA

Table C-1
CAPEs: Summary data concerning the U.S. market, by item and period

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

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. consumption quantity:						
Amount	***	***	***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	▼***	▼***	▼***
Importers' share (fn1):						
China	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▲***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▲***
U.S. consumption value:						
Amount	***	***	***	▼***	▲***	▼***
Producers' share (fn1)	***	***	***	▼***	▲***	▼***
Importers' share (fn1):						
China	***	***	***	▲***	▼***	▲***
Nonsubject sources	***	***	***	▲***	▲***	▲***
All import sources	***	***	***	▲***	▼***	▲***
U.S. imports from:						
China:						
Quantity	***	***	***	▲***	▼***	▲***
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':						
Practical 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)	***	***	***	▲***	▲***	▲***

Table continued.

Table C-1 Continued
CAPEs: Summary data concerning the U.S. market, by item and period

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

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers': Continued						
Production workers	***	***	***	▼***	▼***	***
Hours worked (1,000s)	***	***	***	▼***	▼***	***
Wages paid ($1,000)	***	***	***	▼***	▼***	▼***
Hourly wages (dollars per hour)	***	***	***	▲***	▲***	▼***
Productivity (metric tons per hour)	***	***	***	▼***	▼***	▼***
Unit labor costs	***	***	***	▲***	▲***	▲***
Net sales:						
Quantity	***	***	***	▼***	▼***	▼***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	▼***	▼***	▼***
Gross profit or (loss) (fn2)	***	***	***	▼***	▲***	▼***
SG&A expenses	***	***	***	▼***	▼***	▼***
Operating income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Net income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
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)	***	***	***	▼***	▲***	▼***
Capital expenditures	***	***	***	▼***	▼***	▼***
Research and development expenses	***	***	***	▼***	▲***	▼***
Total assets	***	***	***	▼***	▼***	▼***

Source: Compiled from data submitted to Commission questionnaires and adjusted official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050 , accessed May 7, 2024. Official U.S. imports statistics were adjusted to add in esters imported under other HTS statistical reporting numbers as reported in responses to commission questionnaires. Import data are based on the imports for consumption data series, and values are landed, duty-paid values. 508-compliant tables for these data are contained in parts III, IV, VI, and VII of this report.

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.

APPENDIX D

NARRATIVES FOR CAPEs COMPARISONS

Table D-1

Aromatic phosphoric esters: Narratives for producer comparisons of ester pairs: TCPP vs TDCP

Factor	Producer name and narrative on the domestic like product factors
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Manufacturing	***
TCPP vs TDCP: Manufacturing	***
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Price	***
TCPP vs TDCP: Price	***

Source: Compiled from data submitted in response to Commission questionnaires

Table D-2

Aromatic phosphoric esters: Narratives for importer comparisons of ester pairs: TCPP vs TDCP

Factor	Importer name and narrative on the domestic like product factors
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Physical characteristics	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Interchangeability	***
TCPP vs TDCP: Manufacturing	***
TCPP vs TDCP: Manufacturing	***
TCPP vs TDCP: Manufacturing	***
TCPP vs TDCP: Manufacturing	***
TCPP vs TDCP: Channels	***

Table continued.

Factor	Importer name and narrative on the domestic like product factors
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Channels	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Perceptions	***
TCPP vs TDCP: Price	***
TCPP vs TDCP: Price	***
TCPP vs TDCP: Price	***
TCPP vs TDCP: Price	***
TCPP vs TDCP: Price	***
TCPP vs TDCP: Price	***

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

Table D-3

Aromatic phosphoric esters: Narratives for producer comparisons of ester pairs: TCPP vs TEP

Factor	Producer name and narrative on the domestic like product factors
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***

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

Table D-4

Aromatic phosphoric esters: Narratives for importer comparisons of ester pairs: TCPP vs TEP

Factor	Importer name and narrative on the domestic like product factors
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Physical characteristics	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***

Table continued.

Factor	Importer name and narrative on the domestic like product factors
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Interchangeability	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Manufacturing	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***
TCPP vs TEP: Channels	***

Table continued.

Factor	Importer name and narrative on the domestic like product factors
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Perceptions	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***
TCPP vs TEP: Price	***

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

Table D-5

Aromatic phosphoric esters: Narratives for producer comparisons of ester pairs: TDCP vs TEP

Factor	Producer name and narrative on the domestic like product factors
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Manufacturing	***
TDCP vs TEP: Manufacturing	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Price	***
TDCP vs TEP: Price	***

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

Table D-6

Aromatic phosphoric esters: Narratives for importer comparisons of ester pairs: TDCP vs TEP

Factor	Importer name and narrative on the domestic like product factors
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Physical characteristics	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Interchangeability	***
TDCP vs TEP: Manufacturing	***
TDCP vs TEP: Manufacturing	***
TDCP vs TEP: Manufacturing	***
TDCP vs TEP: Manufacturing	***

Table continued.

Factor	Importer name and narrative on the domestic like product factors
TDCP vs TEP: Manufacturing	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Channels	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Perceptions	***
TDCP vs TEP: Price	***
TDCP vs TEP: Price	***
TDCP vs TEP: Price	***

Table continued.

Factor	Importer name and narrative on the domestic like product factors
TDCP vs TEP: Price	***
TDCP vs TEP: Price	***

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