Alkyl Phosphate Esters from China

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

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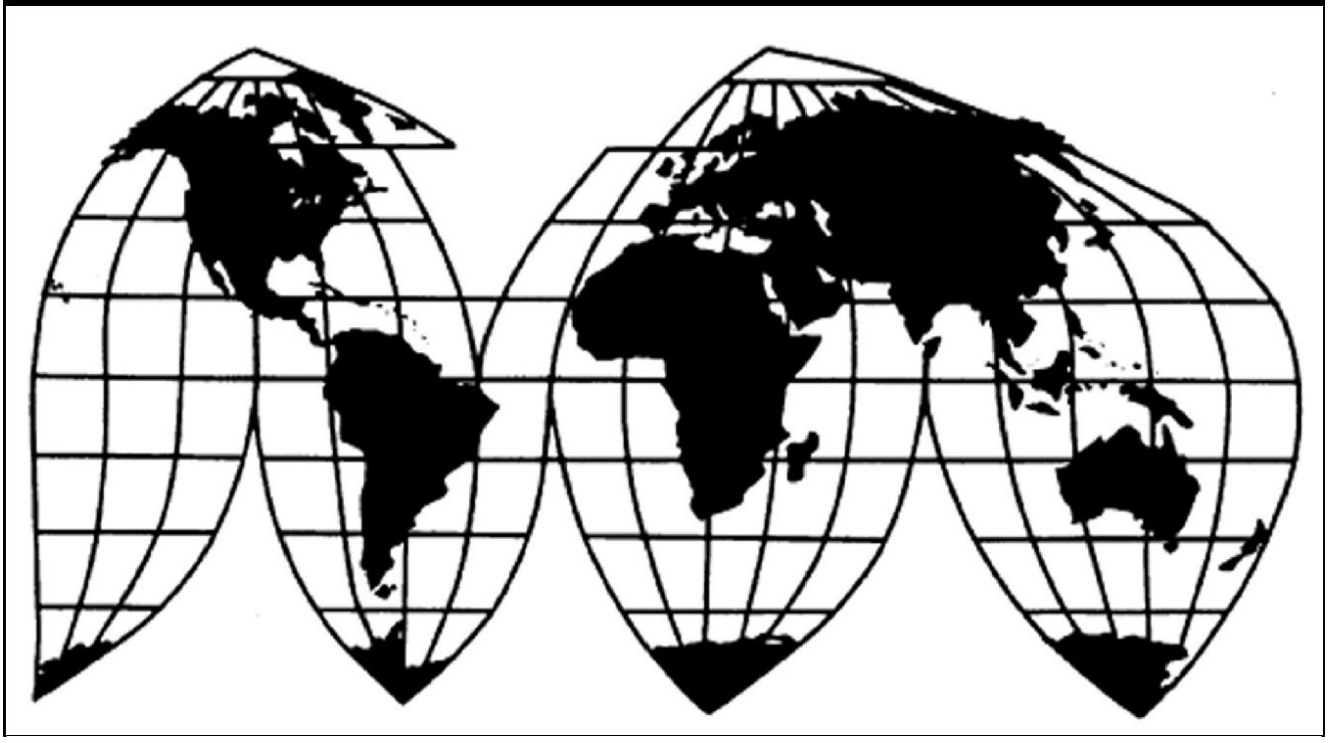
U.S. International Trade Commission



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CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

Appendixes

Note.—Information that would reveal confidential operations of individual firms may not be published. Such information is identified by brackets ([ ]) in confidential reports and is deleted and replaced with asterisks (***) in public reports. Zeroes, null values, and undefined calculations are suppressed and shown as em dashes (—) in tables. If using a screen reader, we recommend increasing the verbosity setting.

UNITED STATES INTERNATIONAL TRADE COMMISSION

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

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 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 have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV"), and imports of the subject merchandise from China that have been found to be subsidized by the government of China.[2]

BACKGROUND

The Commission instituted these investigations effective April 23, 2024, following receipt of petitions filed with the Commission and Commerce by ICL-IP America, Inc., St. Louis, Missouri. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of alkyl phosphate esters from China were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice

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

[2] 90 FR 17373 and 90 FR 17404 (April 25, 2025).

in the *Federal Register* on December 19, 2024 (89 FR 103877). The public hearing in connection with the investigations, originally scheduled for April 10, 2025, was cancelled.[3]

[3] 90 FR 15576 (April 14, 2025).

Views of the Commission

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

I. Background

The petitions in these investigations were filed on April 23, 2024, by ICL-IP America, Inc. ("ICL"), a U.S. producer of CAPEs.[1] ICL submitted a prehearing brief and posthearing brief in which it responded to Commission questions *in lieu* of a hearing. No respondent entity participated in the final phase of these investigations.

U.S. industry data are based on the questionnaire responses of two U.S. producers, which accounted for *** U.S. production of CAPEs in 2023.[2] U.S. import data are based on both official import statistics and the questionnaire responses of 23 U.S. importers, which represented a large majority of U.S. imports from China in 2023.[3] The Commission received responses to its questionnaire from six producers of subject merchandise in China, which accounted for approximately *** percent of overall production of CAPEs in China in 2023.[4]

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[5] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the

[1] Confidential Staff Report, INV-XX-057 (May 5, 2025) ("CR"); *Alkyl Phosphate Esters from China*, Inv. Nos. 701-TA-721 and 731-TA-1689 (Final), USITC Pub. 5628 (June 2025) ("PR") at 1.1.

[2] CR/PR at 3.1.

[3] CR/PR at 4.1, Table 4.2 Source. Questionnaire coverage was determined based on U.S. importers' reported imports and official import statistics under HTS statistical reporting number 2919.90.5050.

[4] CR/PR at Tables 7.1-7.2. The Commission also received responses to its questionnaire from two resellers of subject merchandise. *Id*. at Table 7.3.

[5] 19 U.S.C. § 1677(4)(A).

"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."[6] 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."[7]

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.[8] 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."[9] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[10] The decision regarding the appropriate domestic like product 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.[11] No single factor is dispositive, and the Commission may

[6] 19 U.S.C. § 1677(4)(A).

[7] 19 U.S.C. § 1677(10).

[8] 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).

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

[10] *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).

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

consider other factors it deems relevant based on the facts of a particular investigation.[12] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[13]

B. Product Description

Commerce has defined the imported merchandise within the scope of these investigations as follows:

> . . . {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.

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

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

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.[14]

CAPEs are clear, colorless liquids that are chemically similar and primarily used as flame retardants in rigid and flexible polyurethane foam applications.[15] CAPES include Tris (2-chloroisopropyl) phosphate ("TCPP"), Tris(1,3-dichloroisopropyl) phosphate ("TDCP"), and Triethyl Phosphate ("TEP"). At the chemical core of each is a phosphate ion. TCPP and TDCP also contain chlorine, while TEP does not.[16] TDCP has the highest viscosity of the three, and as a result, TCPP and TEP are more easily blended with other materials.[17]

CAPEs have overlapping end uses, either as standalone flame retardants or blended to achieve the properties required.[18] The most frequent use of CAPEs is as a flame retardant in foam insulation destined for commercial and residential construction, as such insulation is manufactured from flammable petrochemicals and, accordingly, requires the addition of flame retardants.[19] CAPEs are also used as flame retardants in a variety of resins and chemicals, as

[14] *Certain Alkyl Phosphate Esters From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 17404, 17406 (Apr. 25, 2025); *Certain Alkyl Phosphate Esters From the People's Republic of China: Final Affirmative Countervailing Duty Determination*, 90 Fed. Reg. 17373, 17375 (Apr. 25, 2025).

[15] CR/PR at 1.10.

[16] CR/PR at 1.10.

[17] CR/PR at 1.10-1.13.

[18] CR/PR at 1.11.

[19] CR/PR at 1.11.

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.[20]

CAPEs retard fire by two mechanisms.[21] One mechanism, common to all three named CAPEs, is the formation of a protective char layer from the phosphorus that prevents further spread of the flame.[22] The other is the scavenging of oxygen by the chlorine in TCPP and TDCP.[23] TCPP and TDCP contain both chlorine and phosphorus and retard fire by both mechanisms.[24] Because TEP does not contain chlorine, the second mechanism of flame retardation is not available to materials that contain only TEP.[25] As a result, more TEP is required to achieve an equivalent level of flame retardancy.[26] TCPP is the most widely used of the three named CAPEs in the U.S. market, largely due to its cost effectiveness.[27]

C. Arguments

Petitioner argues that the Commission should define a single domestic like product consisting of all CAPEs coextensive with the scope of these investigations.[28] While acknowledging that the domestic industry does not produce TEP, one of the three CAPEs within the scope, Petitioner argues that, in the absence of current production of TEP, the domestic like product is the domestically produced product with the most similar characteristics and uses, which consists of domestically produced TCPP and TDCP.[29] It contends that domestically produced TCPP and TDCP are produced from the same intermediate chemical and share common production equipment, employees, and processes; have similar physical characteristics and common end uses; are sold through the same distribution channels; are interchangeable for major applications, such as rigid and flexible polyurethane spray foams; and are sold within the same price range in the U.S. market.[30]

[20] CR/PR at 1.13.
[21] CR/PR at 1.12.
[22] CR/PR at 1.12.
[23] CR/PR at 1.12.
[24] CR/PR at 1.12.
[25] CR/PR at 1.12.
[26] CR/PR at 1.12.
[27] CR/PR at 1.12.
[28] ICL Prehearing Br. at 6-15.
[29] ICL Prehearing Br. at 7-8.
[30] ICL Prehearing Br. at 7-14.

D. Domestic Like Product Analysis

In the preliminary determinations, the Commission defined a single domestic like product consisting of all TCPP and TDCP within the scope of the investigations.[31] As an initial matter, the Commission concluded that because TEP was included in the scope of the investigations but not produced domestically,[32] the domestically produced articles "most similar" to subject imported TEP would be domestically produced CAPEs —TCPP and TDCP.[33] Comparing domestically produced TCPP and TDCP under the like product factors, the Commission found that TCPP and TDCP differed in terms of their chemical compositions, resulting in somewhat different physical characteristics, limited interchangeability, and some differences in price.[34] Nevertheless, the Commission found that there was a preponderance of similarities between TCPP and TDCP, based on their similar flame-retardant properties, common end use in flame-retardant foams, and overlapping manufacturing facilities and production processes, channels of distribution, and producer and customer perceptions.[35]

The record in the final phase of these investigations does not contain any new information that would warrant reconsideration of the Commission's definition of a single domestic like product in the preliminary determinations.[36] Moreover, no party has argued that the Commission should adopt a different definition of the domestic like product.[37] Accordingly, we again define a single domestic like product consisting of all TCPP and TDCP within the scope of the investigations.

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[31] *Alkyl Phosphate Esters from China*, Inv. No. 701-TA-721 and 731-TA-1689 (Preliminary), USITC Pub. 5516 at 8-11 (June 2024) ("Preliminary Determinations").

[32] The Commission will not define a domestic like product corresponding to an article that is not produced domestically. *Sodium Gluconate, Gluconic Acid, and Derivative Products from China and France*, Inv. Nos. 701-TA-590 and 731-TA-1397-1398 (Preliminary), USITC Pub. 4756 at 8 (Jan. 2018) ("{T}he Commission's consistent practice has been to reject requests by parties to define a domestic like product for imported merchandise not manufactured domestically and for which parties have not identified a domestically produced variant most similar in characteristics and uses."). *See Autoliv ASP, Inc. v. United States*, 422 F. Supp. 3d 1295, 1304 (Ct. Int'l Trade, 2019) (finding that Commission's refusal to define a like product not produced domestically "comports with the statutory language's plain and unambiguous meaning").

[33] Preliminary Determinations, USITC Pub. 5516 at 8-9. The Commission rejected a respondent's argument that TEP be defined as a separate domestic like product, explaining that only those articles domestically produced may be defined as separate domestic like products. *Id.* at 8.

[34] Preliminary Determinations, USITC Pub. 5516 at 12-15.

[35] Preliminary Determinations, USITC Pub. 5516 at 12-15.

[36] *See generally* CR/PR at 1.10-1.15.

[37] ICL's Prehearing Br. at 6-15.

III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[38] 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 or which are themselves importers.[39] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[40]

ICL argues that the domestic industry should include ICL and Lanxess, but not ***.[41] *** and *** are subject to possible exclusion under the related parties provision because *** imported subject merchandise during the period of investigation ("POI").[42] ICL argues that the

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[38] 19 U.S.C. § 1677(4)(A).

[39] *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).

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

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

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

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

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

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

[41] ICL Prehearing Br. at 15-16. *** was a long-time producer of TEP in the United States, but ceased production before the POI to become a ***. CR/PR at 1.11. Because *** did not produce the domestic like product during the POI, there is no issue as to whether it should be included in the domestic industry. *** provided a *** that is incorporated in the data.

[42] CR/PR at Tables 3.11-12. *** also purchased subject merchandise during the POI. *See id.* at Table 3.14.

record does not support excluding *** or *** from the domestic industry under the related parties provision.[43]

*****. *** was the *** domestic producer of CAPEs in 2023, accounting for *** percent of U.S. production of CAPEs that year, and is *** in these investigations.[44] The ratio of *** subject imports to its domestic production increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was lower in January to September 2024 ("interim 2024"), at *** percent, than in January to September 2023 ("interim 2023"), at *** percent.[45] *** indicates that it imports CAPEs because it ***.[46]

Given *** low ratio of subject imports to domestic production throughout the POI, and its status as ***, its primary interest appears to be in domestic production. There also is no information on the record indicating that *** domestic production operations benefitted from its imports of subject merchandise such that its inclusion in the domestic industry would skew the domestic industry data or mask injury. In light of this, and in the absence of any contrary argument, we find that appropriate circumstances do not exist to exclude *** from the domestic industry.

*****. *** was the *** of the two domestic producers in 2023, accounting for *** percent of U.S. production of CAPEs that year, and ***.[47] *** imports of subject merchandise decreased from 2021 to 2023, from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023; its imports of *** metric tons in interim 2024 were slightly higher in comparison to its imports of *** metric tons in interim 2023.[48] The ratio of *** subject imports to its domestic production increased from 2021 to 2023, from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[49] *** explained that it imported subject merchandise

[43] ICL Prehearing Brief at 16.

[44] CR/PR at Table 3.1.

[45] CR/PR at Table 3.11. *** also reported purchasing subject merchandise during the period of investigation from U.S. importer ***. *Id*. at Table 3.14. *** purchases of subject imports from *** were *** metric tons in 2022 and *** metric tons in 2023, equivalent to *** percent and *** percent of its U.S. production in those years, respectively. *Calculated from* CR/PR at Table 3.14.

[46] CR/PR at Table 3.13.

[47] CR/PR at Table 3.1.

[48] CR/PR at Table 3.12.

[49] CR/PR at Table 3.12.

because ***.[50] *** also explained that it experienced "***."[51] *** operating income to net sales ratios were *** than the domestic industry averages ***.[52]

Although *** ratio of subject imports to domestic production increased over the POI to reach its highest level in interim 2024, its subject imports decreased in each year of the POI and *** in interim 2024 compared to interim 2023. Thus, the ratio increased solely because *** domestic production ***, which *** attributed to ***.[53] Moreover, *** reported that its importation of subject merchandise consisted of ***. In light of these considerations, *** significant share of domestic production, and its ***, the firm's primary interest appears to be in domestic production. As *** reported that its decreased production was due to subject imports, and its domestic production operations were consistently *** than industry averages, it does not appear that its domestic production operations benefitted from its imports so as to mask injury. Moreover, given its share of domestic production, reports of decreased production due to subject imports, and profitability, its exclusion from the industry could mask injury to the domestic industry. For these reasons, and in the absence of any contrary argument, we find that appropriate circumstances do not exist to exclude *** 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.

IV. Negligibility

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product shall be deemed negligible if they account for less than three percent (or four percent in the case of a developing country in a countervailing duty investigation) 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.[54]

During the most recent 12-month period preceding the filing of the petitions in these investigations, May 2023 through April 2024, subject imports of CAPEs from China accounted

[50] CR/PR at Table 3.13.

[51] CR/PR at Table 3.3.

[52] *** ratio of operating income to net sales decreased from *** percent in 2021 to *** percent in 2022, and *** percent in 2023; it was lower in interim 2024, at *** percent, than in interim 2023, at *** percent. CR/PR at Table 6.3.

[53] CR/PR at Tables 3.3, 3.12-3.13.

[54] 19 U.S.C. §§ 1671d(b), 1673d(b), 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)).

for *** percent of total imports of CAPEs.[55] As subject imports from China are above the three percent negligibility threshold, we find that imports of CAPEs from China subject to the antidumping and countervailing duty investigations are not negligible.

V. Material Injury by Reason of Subject Imports

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of imports of CAPEs from China that Commerce has found to be sold at LTFV and subsidized by the government of China.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[56] In making these determinations, 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.[57] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[58] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[59] 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."[60]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[61] it does not define the phrase "by reason of," indicating that this aspect of the injury

[55] CR/PR at Table 4.4. Although imports from China are subject to both antidumping and countervailing duty investigations, the volume of subject imports from China is the same with respect to both investigations. *Id.*

[56] 19 U.S.C. §§ 1671d(b), 1673d(b).

[57] 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).

[58] 19 U.S.C. § 1677(7)(A).

[59] 19 U.S.C. § 1677(7)(C)(iii).

[60] 19 U.S.C. § 1677(7)(C)(iii).

[61] 19 U.S.C. §§ 1671d(b), 1673d(b).

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

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

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[62] *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'd,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[63] 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).

[64] Uruguay Round Agreements Act Statement of Administrative Action ("SAA"), H.R. Rep. 103-316, vol. I. 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.[65] 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.[66] It is clear that the existence of injury caused by other factors does not compel a negative determination.[67]

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."[68] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports." [69] The Federal Circuit has examined and affirmed various

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

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

[67] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

[68] *Mittal Steel*, 542 F.3d at 876 & 78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.") *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[69] *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 (Continued...)

Commission methodologies and has disavowed "rigid adherence to a specific formula."[70]

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.[71] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[72]

B. Conditions of Competition and the Business Cycle

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

1. Demand Conditions

U.S. demand for CAPEs is driven by demand for the downstream products in which they are used.[73] CAPEs are typically used for their fire-retardant characteristics in foam insulation products, primarily insulation products in roofs and eaves, and are also used in automotive and other foam applications.[74] Overall demand for CAPEs is likely to experience small changes in response to changes in prices.[75] Demand for CAPEs follows construction spending, which increased 33.4 percent over the POI.[76] A majority of firms reported an increase in U.S. demand for CAPEs since January 2021, with most of the remaining firms reporting no change.[77]

Apparent U.S. consumption by quantity decreased by *** percent between 2021 and 2023, from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023; it was *** percent higher in interim 2024, at *** metric tons, than in interim 2023, at *** metric tons.[78]

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appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

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

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

[72] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

[73] CR/PR at 2.6-2.7.

[74] CR/PR at 2.1, 2.6-2.7.

[75] CR/PR at 2.6.

[76] CR/PR at 2.8, Table 2.5, and Figure 2.1.

[77] CR/PR at 2.8, Table 2.4.

[78] CR/PR at Table 4.5.

2. Supply Conditions

Subject imports were the largest source of supply to the U.S. market during the POI. Their share of apparent U.S. consumption based on quantity increased by *** percentage points over the POI, from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[79] Their market share was higher, at *** percent, in interim 2024, compared with *** percent in interim 2023.[80]

The domestic industry was the second-largest source of CAPEs in the U.S. market throughout the POI. As noted above, ICL was the largest domestic producer throughout the investigation period. The domestic industry's share of apparent U.S. consumption based on quantity declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[81] Its market share was lower, at *** percent, in interim 2024, compared with *** percent in interim 2023.[82]

Nonsubject imports were the smallest source of supply to the U.S. market during the POI. Their share of apparent U.S. consumption based on quantity increased irregularly over the POI, increasing from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023.[83] Their market share was lower, at *** percent, in interim 2024, compared with *** percent in interim 2023.[84] The largest source of nonsubject imports during the POI was Germany.[85]

Both U.S. producers and seven importers reported experiencing supply constraints since January 1, 2021.[86] Reported supply constraints were concentrated early in the POI, and all related to the COVID-19 pandemic.[87] Importers reported difficulty in obtaining CAPEs from China during the COVID-19 pandemic due to logistics problems and the closure of Chinese production facilities.[88] During this time, the domestic industry reported ***.[89] Once imports from China re-entered the market in the second quarter of 2022, *** reported an immediate

[79] CR/PR at Tables 4.5, C.1.
[80] CR/PR at Tables 4.5, C.1.
[81] CR/PR at Tables 4.5, C.1.
[82] CR/PR at Tables 4.5, C.1.
[83] CR/PR at Tables 4.5, C.1.
[84] CR/PR at Tables 4.5, C.1.
[85] CR/PR at 2.5.
[86] CR/PR at 2.6.
[87] CR/PR at 2.6.
[88] CR/PR at 2.6.
[89] CR/PR at 2.6.

reduction in orders.[90] ***.[91] While ***, overall the domestic industry had substantial available capacity, with its capacity utilization rate declining from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[92]

3. Substitutability and Other Conditions

The record evidence indicates a moderate-to-high degree of substitutability between domestically produced CAPEs and subject imports.[93] Most responding firms reported that CAPEs from all sources were always or frequently interchangeable.[94] When asked for a country-by-country comparison with respect to 15 factors that influence purchasing decisions, majorities of responding purchasers reported that domestically produced CAPEs and CAPEs from China were comparable with respect to most of the 15 listed purchasing factors, but nine of 19 responding purchasers rated U.S. product inferior with respect to availability.[95]

We find that price is an important factor in purchasing decisions for CAPEs, although other considerations are important as well. The three most important factors that firms considered in their purchasing decisions for CAPEs were availability of supply (17 firms), price (16 firms), and quality (16 firms).[96] Price was also cited by 16 of 20 purchasers as being very important to their purchasing decisions.[97] Most domestic producers indicated that differences other than price were never significant in sales of the domestic like product and subject imports, while majorities of importers and purchasers reported that nonprice differences were always or frequently significant.[98]

U.S. producers and importers reported selling CAPEs primarily from inventory.[99] U.S.

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[90] CR/PR at 2.6.

[91] *** U.S. Producer Questionnaire Response at IV-19.

[92] CR/PR at Table 3.4.

[93] CR/PR at 2.11.

[94] CR/PR at Table 2.12.

[95] CR/PR at Table 2.11. The only purchasing factors for which a majority of responding purchasers did not report that domestically produced CAPEs and subject imports were comparable were availability, delivery time, and price. *Id.* With respect to availability, nine responding purchasers reported that domestically produced CAPEs and subject imports are comparable, nine reported that domestically produced CAPEs are inferior, and one reported that domestically produced CAPEs are superior. *Id.* A plurality of responding purchasers (nine of 19) reported that domestically produced CAPEs are superior to subject imports with respect to delivery time. A majority of responding purchasers reported that domestically produced CAPEs are inferior to subject imports with respect to price. *Id.*

[96] CR/PR at Table 2.7.

[97] CR/PR at Table 2.8.

[98] CR/PR at Tables 2.13.

[99] CR/PR at Table 2.13.

producers reported that *** percent of their commercial shipments were sold from inventory, with lead times averaging *** days.[100] U.S. importers reported that *** percent of their commercial shipments were sold from inventory, with lead times averaging *** days; and *** percent of their commercial shipments came from production to order, with lead times averaging *** days.[101]

U.S. producers reported selling the majority (***) percent of their U.S. commercial shipments of CAPEs in the spot market, with the remaining *** percent of U.S. commercial shipments sold as annual contracts.[102] Subject U.S. importers sold a majority of their sales pursuant to short-term contracts (72.8 percent) with most of the remaining share (26.4 percent) in the spot market.[103] Less than one percent of U.S. importers' U.S. commercial shipments of subject imports were sold pursuant to long-term or annual contracts; however, importer *** offered long-term contracts with durations of two years.[104] *** U.S. producers reported setting prices using transaction-by-transaction negotiations ***.[105]

The principal raw materials used to produce CAPEs are propylene oxide, chloride, and phosphorous. The cost for propylene oxide fluctuated, with an overall increase of 12.9 percent over the POI; the cost for chlorine also fluctuated, with an overall increase of 363.9 percent over the POI. Raw material costs accounted for the largest share of the domestic industry's cost of goods sold ("COGS") throughout the POI, but their share decreased from *** percent in 2021 to *** percent in 2023; they accounted for *** percent of the industry's COGS in interim 2024, compared with *** percent in interim 2023.[106]

During the POI, CAPEs from China were subject to duties under section 301 of the Trade Act of 1974. Specifically, effective September 24, 2018, CAPEs originating in China were subject to an additional 10 percent *ad valorem* duty. Effective May 10, 2019, the section 301 duty for CAPEs originating in China was increased to 25 percent *ad valorem*. Additionally, CAPEs from China became subject to an additional 10 percent *ad valorem* duty under the International Emergency Economic Powers Act ("IEEPA") effective February 4, 2025, which increased to 20 percent *ad valorem* on March 4, 2025. Lastly, CAPES from China were subject to an additional 10 percent *ad valorem* duty under IEEPA effective April 5, 2025, which rose to 84 percent *ad valorem* effective April 9, 2025, and rose again to 125 percent *ad valorem* effective April 10,

[100] CR/PR at 2.13-2.14.
[101] CR/PR at 2.13-2.14.
[102] CR/PR at Table 5.3.
[103] CR/PR at Table 5.3.
[104] CR/PR at 5.4.
[105] CR/PR at Table 5.2.
[106] CR/PR at Table 6.1.

2025.[107]

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."[108]

The volume of subject imports increased by *** percent between 2021 and 2023, decreasing from *** metric tons in 2021 to *** metric tons in 2022, before increasing to *** metric tons in 2023. Subject import volume was *** metric tons in interim 2024, *** percent higher than the *** metric tons in interim 2023. [109]

Subject imports as a share of apparent U.S. consumption increased over the POI, from *** in 2021 to *** percent in 2022 and *** percent in 2023, for an overall increase of *** percentage points.[110] Their market share was *** percentage points higher in interim 2024, at *** percent, compared with interim 2023, at *** percent.[111]

As a ratio to U.S. production, subject imports increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, an increase of *** percentage points; it was *** percent in interim 2023, and reached a peak of *** percent in interim 2024.[112]

Accordingly, we find that the volume of subject imports and the increase in that volume are significant, in absolute terms and relative to apparent 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 the subject imports, the Commission shall consider whether

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

[107] The duty is in addition to the 20 percent *ad valorem* duty under IEEPA that went into effect on March 4, 2025, for China. CR/PR at 1.9.

[108] 19 U.S.C. § 1677(7)(C)(i).

[109] CR/PR at Tables 4.5, C.1.

[110] CR/PR at Tables 4.5, C.1.

[111] CR/PR at Tables 4.5, C.1.

[112] CR/PR at Table 4.2.

> (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.[113]

As discussed above in Section V.B.3., we find that there is a moderate-to-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.

We have examined several sources of data in our underselling analysis, including pricing data, import purchase cost data, and information concerning lost sales. With respect to pricing data, the Commission collected quarterly quantity and f.o.b. value data on sales of two pricing products shipped by U.S. producers and importers to unrelated U.S. customers during the POI.[114] *** U.S. producers and 11 importers provided usable pricing data for sales of the requested pricing products, although not all firms reported data for all products for all quarters. Pricing data reported by these firms accounted for *** of the domestic industry's U.S. shipments of CAPEs and *** percent of U.S. commercial shipments of subject imports in 2023.[115]

The pricing data show that subject imports undersold the domestic like product in 23 of 30 quarterly comparisons, or 76.7 percent of comparisons, with underselling margins ranging from *** percent to *** percent, and averaging *** percent.[116] Subject imports oversold the domestic like product in the remaining seven comparisons, or 23.3 percent of the comparisons, with overselling margins ranging from *** percent to *** percent, and averaging *** percent.[117] Quarters in which there was underselling accounted for 78.0 percent of total reported subject import sales volume (*** metric tons) covered by the Commission's pricing data during the POI, and quarters in which there was overselling accounted for 22.0 percent of total reported subject import sales volume (*** metric tons).[118]

The pricing data show that as the volume and market share of subject imports increased over the POI, underselling by subject imports also sharply increased. The percentage of

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[113] 19 U.S.C. § 1677(7)(C)(ii).

[114] 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 300 kg capacity.

Product 2.—Tris (1,3-dichloroisopropyl) phosphate (TDCP), whether or not stabilized, bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity. CR/PR at 5.6.

[115] CR/PR at 5.6.

[116] CR/PR at Table 5.12.

[117] CR/PR at Table 5.12.

[118] CR/PR at Table 5.12.

quarterly comparisons involving underselling increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023 and interim 2024.[119] The volume of reported subject import sales in quarters with underselling increased from *** metric tons in 2021 to *** metric tons in 2022, *** metric tons in 2023, and *** metric tons in interim 2024; the share of reported subject imports that were in quarters with underselling rose from *** percent in 2021 to *** percent in 2022 and *** percent in 2023 and interim 2024.[120]

The Commission also collected import purchase cost data for the same two pricing products from firms that imported these products from China. Four importers provided usable purchase cost data for the pricing products, although not all firms reported data for all products for all quarters.[121] Purchase cost data reported by these firms accounted for approximately *** percent of subject imports in 2023.[122] The import purchase cost data show that the landed duty-paid ("LDP") costs for subject imports were less than the sales price for the domestic like product in 23 of 30 quarterly comparisons, at price-cost differentials ranging from *** percent to *** percent, and averaging *** percent.[123] LDP costs for subject imports were greater than the sales prices of domestically produced CAPEs in the remaining seven quarterly comparisons, at price-cost differentials ranging from *** percent to *** percent and averaging *** percent.[124] There were *** metric tons of subject imports in the quarters where subject import costs were lower than domestic producer prices and *** metric tons in the quarters where subject import costs were higher than domestic producer prices. Thus, based on the purchase cost data, LDP costs for subject imports were lower than the domestic sales prices in 76.7 percent of quarterly comparisons, corresponding to 85.3 percent of reported subject import purchases.[125]

We recognize that the import purchase cost data may not reflect the total cost of importing and therefore requested that direct importers provide information regarding the additional costs and benefits of directly importing CAPEs. Three of four responding importers reported that they did incur additional costs, but did not provide an estimate of the additional

[119] CR/PR at Table 5.13. Subject imports undersold the domestic like product in *** of *** quarterly comparisons in 2021, *** of *** quarterly comparisons in 2022, *** quarterly comparisons in 2023, and *** quarterly comparisons in interim 2024. *See id.*

[120] CR/PR at Table 5.13.

[121] CR/PR at 5.11.

[122] CR/PR at 5.11.

[123] CR/PR at Table 5.14.

[124] CR/PR at Table 5.14.

[125] CR/PR at Table 5.14.

costs.[126] The remaining one responding importer reported it did not incur additional costs beyond LDP costs associated with importing.[127] U.S. importers were also asked whether the cost of CAPEs that they imported was lower than the price of purchasing CAPEs from a U.S. producer or importer. Two importers reported that the cost of importing directly was lower than purchasing from a U.S. producer or importer, even when including any additional costs of importing.[128] One importer estimated that it saved between *** percent of the purchase price by importing directly, including additional costs of importing, rather than purchasing from a U.S. importer.[129] Two importers estimated that they saved between *** percent of the purchase price by importing directly, including additional costs of importing, rather than purchasing from a U.S. producer.[130]

We have also considered lost sales information, which corroborates the pricing and purchase cost data showing that subject imports were lower priced than the domestic like product. Of 21 responding purchasers, 19 reported that, since January 2021, they purchased subject imports rather than domestically produced CAPEs, with 15 of these purchasers reporting that subject import prices were lower than domestic prices.[131] Five of those 15 purchasers reported that price was a primary reason for their decision to purchase subject imports rather than the domestic like product, and together they estimated purchasing *** metric tons of subject imports instead of domestically produced CAPES due to price.[132] Responding purchasers reported that their purchases of domestically produced CAPEs decreased as a share of their total purchases by *** percentage points from January 2021 to September 2024, while their purchases of subject imports increased as a share of their total purchases by *** percentage points over the same period.[133] In addition, four responding purchasers reported that domestic producers had reduced prices, reporting reductions between *** percent, in order to compete with lower-priced imports from China, while ten

[126] CR/PR at 5.11. These reported additional costs included warehouse, interest, and inventory carrying costs. *Id*.

[127] CR/PR at 5.11. In determining whether to directly import CAPEs, all four responding importers reported that they compare costs of importing directly to the cost of purchasing from a U.S. producer and the cost of purchasing from a U.S. importer. *Id*. at 5.11.

[128] CR/PR at 5.12.

[129] CR/PR at 5.12.

[130] CR/PR at 5.12.

[131] CR/PR at 5.23, Table 5.17.

[132] CR/PR at 5.23, Table 5.17. Some firms that reported purchasing subject imports instead of the domestic like product reported non-price reasons for such purchases, including availability or "as a risk mitigation measure." *Id*.

[133] CR/PR at Table 5.16.

purchasers reported that domestic producers did not reduce prices in order to compete with subject imports and seven reported they did not know.[134]

Based on the foregoing, we find that subject imports undersold the domestic like product to a significant degree. We further find that this significant underselling, together with the moderate-to-high degree of substitutability between the domestic like product and subject imports and the importance of price in purchasing decisions, enabled subject imports to gain market share from the domestic industry over the POI. Subject imports gained *** percentage points in market share between 2021 and 2023, and an additional *** percentage points in market share in interim 2024 compared to interim 2023, at the domestic industry's expense.[135]

We have also considered whether subject imports depressed or suppressed prices to a significant degree. While the domestic industry's sales prices for CAPEs increased overall between the first and last quarters of the POI,[136] its prices declined between the second half of 2022 to the end of POI, while costs were increasing.[137] For pricing product 1, which accounted for *** percent of the domestic industry's sales of both pricing products, domestic prices initially increased *** percent from the first quarter of 2021 to the first quarter of 2022, then fell *** percent from the second quarter of 2022 to the third quarter of 2024.[138] For pricing product 2, domestic prices increased *** percent from the first quarter of 2021 to the second quarter of 2022, before irregularly decreasing *** percent from the second quarter of 2022 to the third quarter of 2024.[139]

Subject import prices generally followed a similar pattern, increasing from the beginning of 2021 until the end of 2021, then decreasing starting at the beginning of 2022, prior to the domestic industry's price declines, through the end of the POI.[140] For pricing product 1, subject import prices increased *** percent from the first quarter of 2021 to the fourth quarter of 2021, before decreasing *** percent from the fourth quarter of 2021 to the third quarter of

[134] CR/PR at 5.23.

[135] CR/PR at Tables 4.5, C.1.

[136] The domestic industry's sales increased by *** percent for Pricing Product 1 and *** percent for Pricing Product 2. CR/PR at Table 5.8.

[137] CR/PR at Tables 5.4-5.5. The total COGS unit value rose from *** in 2021 to *** in 2022 and *** in 2023; it was *** in interim 2023 and *** in interim 2024. *Id.* at Table 6.1.

[138] *Calculated from* CR/PR at Table 5.4 (calculated percentage declines from first quarter 2021 to first quarter 2022, and first quarter 2022 to third quarter 2024).

[139] *Calculated from* CR/PR at Table 5.5 (calculated percentage declines from first quarter 2021 to second quarter 2022, and second quarter 2022 to third quarter 2024).

[140] CR/PR at Tables 5.4-5.5. Prices for subject imports decreased by *** percent for Pricing Product 1 and by *** percent for Pricing Product 2. *Id*.

2024.[141] Similarly, for pricing product 2, subject import prices increased *** percent from the first quarter of 2021 to the fourth quarter of 2021, before decreasing *** percent from the fourth quarter of 2021 to the third quarter of 2024.[142]

The domestic industry's ratio of COGS to net sales increased by *** percentage points between 2021 and 2023, decreasing from *** percent in 2021 to *** percent in 2022, before increasing to *** percent in 2023.[143] The increase in the domestic industry's ratio of COGS to net sales from 2021 to 2023 occurred as increases to the industry's unit COGS outpaced increases to the average unit value ("AUV") of its net sales.[144] Between 2021 and 2023, the domestic industry's COGS per metric ton increased by $*** per metric ton, or *** percent,[145] driven by increases in raw material costs of $***, or *** percent, per metric ton[146] and other factory costs increases of $***, or *** percent, per metric ton, both of which accounted for substantial portions of the industry's COGS.[147] [148] Direct labor costs, which accounted for the smallest portion of COGS, also experienced increases of $***, or *** percent, per metric ton.[149] [150] At the same time, the domestic industry's net sales AUVs increased by $***, or *** percent, per metric ton.[151]

The domestic industry's ratio of COGS to net sales was higher in interim 2024, at *** percent, compared to interim 2023, when it was *** percent.[152] The domestic industry's COGS per metric ton was higher by $***, or *** percent, while its net sales value per metric ton was

[141] *Calculated from* CR/PR at Table 5.4 (calculated percentage declines from first quarter 2021 to fourth quarter 2021, and fourth quarter 2021 to third quarter 2024).

[142] *Calculated from* CR/PR at Table 5.5 (calculated percentage declines from first quarter 2021 to fourth quarter 2021, and fourth quarter 2021 to third quarter 2024).

[143] CR/PR at Tables 6.1, C.1.

[144] CR/PR at Tables 6.1, 6.2.

[145] CR/PR at Tables 6.1, 6.2. The domestic industry's COGS per metric ton increased from $*** in 2021 to $*** in 2022 and $*** in 2023. *Id*. at Table 6.1.

[146] CR/PR at Tables 6.1, 6.2. The domestic industry's raw material costs per metric ton increased from $*** in 2021 to $*** in 2022 and $*** in 2023. *Id*. at Table 6.1.

[147] CR/PR at Tables 6.1, 6.2. The domestic industry's other factory costs per metric ton increased from $*** in 2021 to $*** in 2022 and $*** in 2023. *Id* at Table 6.1.

[148] Raw material costs comprised the largest portion of COGS in 2023, at *** percent, followed by other factory costs, which accounted for *** percent. *Id*. at Table 6.1

[149] CR/PR at Tables 6.1, 6.2. The domestic industry's direct labor costs per metric ton increased from $*** in 2021 to $*** in 2022 and $*** in 2023. *Id*. at Table 6.1.

[150] Direct labor costs accounted for *** percent of COGS in 2023. CR/PR at Table 6.1.

[151] CR/PR at Tables 6.1, 6.2. The domestic industry's net sales AUVs per metric ton increased from $*** in 2021 to $*** in 2022 and then decreased to $*** in 2023. *Id*. at Table 6.1.

[152] CR/PR at Table 6.2.

lower by $***, or *** percent.[153] Raw material costs per metric ton were lower by $***, or *** percent; direct labor costs per metric ton were higher by $***, or *** percent; and other factory costs per metric ton were lower by $***, or *** percent.[154]

As explained above, as subject import volume increased significantly, and subject imports increasingly undersold the domestic like product from 2021 to third quarter 2024, subject imports gained *** percentage points of market share at the domestic industry's expense from 2021 to 2023, and *** percentage points in interim 2024 compared to interim 2023.[155] In the face of intensifying competition from significant volumes of low-priced subject imports, domestic producers lowered their prices from mid-2022 to third quarter 2024, even as their costs increased, to compete with subject imports in an effort to retain sales and gain back market share.[156] As a consequence, the domestic industry's prices declined for both pricing products from mid-2022 to the end of the POI, including in interim 2024, when apparent U.S. consumption was higher compared to interim 2023.[157] Accordingly, we find that the significant quantity of low-priced subject imports depressed domestic prices to a significant degree.

We find that subject imports undersold the domestic like product to a significant degree, which enabled subject imports to gain market share at the direct expense of the domestic industry, and depressed prices for the domestic like product to a significant degree. We therefore find that subject imports had significant price effects.

E. Impact of the Subject Imports[158]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject

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[153] CR/PR at Table 6.2. The domestic industry's COGS per metric ton was higher in interim 2024, at $***, than in interim 2023, at $***. *Id*. at Table 6.1.

[154] CR/PR at Table 6.2. The domestic industry's raw material costs per metric ton were lower at $*** in interim 2024 compared with $*** in interim 2023; their direct labor costs per metric ton were higher at $*** in interim 2024 compared with $*** in interim 2023; their other factory costs per metric ton were higher at $*** in interim 2024 compared with $*** in interim 2023. *Id*. at Table 6.1.

[155] CR/PR at Tables 4.5, C.1.

[156] CR/PR at Tables 5.4-5.5, C.1.

[157] CR/PR at Tables 5.4-5.5, C.1. Apparent U.S. consumption was *** percent higher in interim 2024 compared to interim 2023. We also note that the decline in apparent U.S. consumption from 2022 to 2023 was only *** percent, while the declines in the domestic industry's prices for pricing product 1, which accounted for the *** of domestic producers' sales of the pricing products, decreased by *** percent from the first quarter of 2022 to the fourth quarter of 2023. *Calculated from* CR/PR at Tables 5.4-5.5.

[158] In its final determination of sales at less-than-fair-value, Commerce found dumping margins of 152.38 to 269.02 percent for imports from China. *Certain Alkyl Phosphate Esters From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 17404, (Continued...)

imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[159] These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[160]

During the POI, the domestic industry's production, capacity utilization, U.S. shipments, employment indicators, and financial indicators weakened between 2021 and 2023, and were lower in interim 2024 compared to interim 2023, as subject imports increased and gained *** percentage points of market share at the direct expense of the domestic industry from 2021 to 2023 and another *** percentage points at its expense between interim periods.[161]

Most of the domestic industry's trade-related indicators declined between 2021 and 2023, and were lower in interim 2024, compared with interim 2023. The domestic industry's production decreased by *** percent during the POI, from *** metric tons in 2021 to *** metric tons 2022 and *** metric tons in 2023; its production was lower, at *** metric tons, in interim 2024, compared with *** metric tons in interim 2023.[162] The industry's capacity remained at *** metric tons from 2021 to 2023, and was at *** metric tons over the interim periods.[163] Accordingly, the industry's capacity utilization decreased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, a level *** percentage points lower than in 2021; it was lower, at *** percent, in interim 2024, compared with *** percent in interim 2023.[164]

17405 (Apr. 25, 2025). We take into account in our analysis the fact that Commerce has made a final finding that all subject producers in China are selling subject imports in the United States at LTFV. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling and price depressing effect of subject imports, discussed in both the price effects section and below, is particularly probative to our assessment of the impact of the subject imports.

[159] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[160] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[161] CR/PR at Table C.1.

[162] CR/PR at Tables 3.4, C.1.

[163] CR/PR at Tables 3.4, C.1.

[164] CR/PR at Tables 3.4, C.1.

The domestic industry's U.S. shipments decreased from *** metric tons in 2021 to *** metric tons in 2022 and *** metric tons in 2023, a level *** percent lower than in 2021.[165] The industry's U.S. shipments were lower, at *** metric tons, in interim 2024, compared with *** metric tons in interim 2023.[166] While apparent U.S. consumption decreased from 2021 to 2023, the domestic industry's U.S. shipments declined at a higher rate, and as a result, the industry's share of apparent U.S. consumption decreased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, a loss of *** percentage points.[167] Although apparent U.S. consumption was higher in interim 2024 compared with interim 2023, the domestic industry's U.S. shipments continued to decrease, and as a result, the domestic industry's share of apparent U.S. consumption was lower, at *** percent, in interim 2023, compared with *** percent in interim 2023.[168]

The domestic industry's end-of-period inventories decreased irregularly by *** percent from 2021 to 2023, increasing from *** metric tons in 2021 to *** metric tons in 2022 before decreasing to *** metric tons in 2023; they were lower, at *** metric tons, in interim 2024, compared with *** metric tons in interim 2023.[169] As a share of total shipments, the domestic industry's end-of-period inventories increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, a level *** percentage points higher than in 2021; they were lower, at *** percent, in interim 2024, compared with *** percent in interim 2023.[170]

The domestic industry's employment-related indicators generally declined from 2021 to 2023 and were mixed when comparing interim 2024 to interim 2023. The number of production and related workers ("PRWs") decreased from *** PRWs in 2021 to *** PRWs in 2022 and 2023, for an overall decrease of *** percent; it remained flat at *** PRWs in interim 2023 and interim 2024.[171] Hours worked declined by *** percent from 2021 to 2023, decreasing from *** hours in 2021 to *** hours in 2022 and 2023; hours worked remained flat at *** hours in interim 2023 and interim 2024.[172] Wages paid decreased by *** percent from 2021 to 2023, decreasing from $*** in 2021 to $*** in 2022 and 2023; they were higher, at $***, in interim 2024, compared with $*** in interim 2023.[173] Productivity decreased from ***

[165] CR/PR at Tables 3.8, C.1
[166] CR/PR at Tables 3.8, C.1.
[167] CR/PR at Tables 4.5, C.1.
[168] CR/PR at Tables 4.5, C.1.
[169] CR/PR at Table 3.10.
[170] CR/PR at Table 3.10.
[171] CR/PR at Tables 3.16, C.1.
[172] CR/PR at Tables 3.16, C.1.
[173] CR/PR at Tables 3.16, C.1.

metric tons per hour in 2021 to *** metric tons per hour in 2022 and *** metric tons per hour in 2023; it was lower, at *** metric tons per hour, in interim 2024, compared with *** metric tons per hour in interim 2023.[174]

The domestic industry's financial indicators also deteriorated over the POI and sharply deteriorated in interim 2024 compared to interim 2023. The industry's net sales revenue decreased by *** percent from 2021 to 2023, from $*** in 2021 to $*** in 2022 and $*** in 2023; it was lower, at $***, in interim 2024 compared with $*** in interim 2023.[175] The industry's gross profits decreased irregularly by *** percent from 2021 to 2023, increasing from $*** in 2021 to $*** in 2022, and then falling to $*** in 2023; it was lower, at ***, in interim 2024 compared with $*** in interim 2023.[176] The industry's operating income decreased irregularly, increasing from $*** in 2021 to $*** in 2022 and then decreasing to $*** in 2023; it was lower, at ***, in interim 2024 compared with $*** interim 2023.[177] As a ratio to net sales, the industry's operating income declined irregularly by *** percentage points, initially improving from *** percent in 2021 to *** percent in 2022 and then decreasing to *** percent in 2023; it was lower, at *** percent, in interim 2024 compared with *** percent in interim 2023.[178]

The domestic industry's capital expenditures decreased during from $*** in 2021 to $*** in 2022 and $*** in 2023; they were higher, at $***, in interim 2024, compared with $*** in interim 2023.[179] R&D expenses declined irregularly, initially increasing from $*** in 2021 to $*** in 2022 and then decreasing to $*** in 2023; they were lower, at $***, in interim 2024, compared with $*** in interim 2023.[180] The industry's return on assets declined irregularly over the POI, rising from *** percent in 2021 to *** percent in 2022 before falling to *** percent in 2023.[181] The domestic industry also reported negative effects on investment and on growth and development due to subject imports.[182]

As discussed above, we find that a significant and increasing volume of subject imports

[174] CR/PR at Tables 3.16, C.1.

[175] CR/PR at Tables 6.1, C.1.

[176] CR/PR at Tables 6.1, C.1.

[177] CR/PR at Tables 6.1, C.1.

[178] CR/PR at Tables 6.1, C.1. The industry's net income and net income ratios were identical or essentially identical to its operating income and operating income ratios for each year and interim period. *Id*.

[179] CR/PR at Tables 6.5, C.1. The industry's capital expenditures decreased by *** percent from 2021 to 2023 and were *** percent higher in interim 2024 than in interim 2023. *Id*.

[180] CR/PR at Tables 6.7, C.1. R&D expenses decreased by *** percent from 2021 to 2023 and were *** percent lower in interim 2024 than in interim 2023. *Id*.

[181] CR/PR at Table 6.10.

[182] CR/PR at Table 6.12.

undersold the domestic like product to a significant degree during the POI, with the domestic industry losing sales and market share to subject imports. As a result, the domestic industry's production and shipments decreased drastically over the period of investigation and were lower than they otherwise would have been but for subject imports. Further, the significant volume of low-priced subject imports depressed prices for the domestic like product to a significant degree, with considerable decreases in domestic prices beginning in mid-2022 and extending through interim 2024. As a result, the domestic industry's financial performance deteriorated markedly towards the end of the period of investigation, with the industry *** by interim 2024. Additionally, the domestic industry's employment-related indicators also generally declined from 2021 to 2023 and were mixed when comparing interim 2024 to interim 2023. We thus find that subject imports had a significant adverse impact on the domestic industry.

We have considered whether there are other factors that may have had an impact on the domestic industry to ensure that we are not attributing injury from other factors to subject imports. We find that nonsubject imports do not explain the domestic industry's deteriorating performance. While the volume of nonsubject imports increased over the course of the POI, they remained a small source of supply to the U.S. market; they increased from *** percent of apparent U.S. consumption in 2021 to *** percent in 2022, and decreased to *** percent in 2023.[183] Further, the record indicates that the AUV of U.S. shipments of nonsubject imports was higher than the AUV of U.S. shipments of subject imports and increased throughout the POI.[184] Therefore, nonsubject imports cannot explain the shift in market share from the domestic industry to subject imports, and cannot explain the price depression and injury to the domestic industry that we have attributed to subject imports.

We recognize that apparent U.S. consumption declined by *** percent from 2021 to 2022 and then by *** percent from 2022 to 2023, for a *** percent decline from 2021 to 2023, although it was *** percent higher in interim 2024 than in interim 2023.[185] However, as discussed in section V.B.1 above, the questionnaire responses of U.S. producers and a majority of responding importers and purchasers report that demand either increased steadily, fluctuated up, or did not change during the POI.[186] Thus, it does not appear that most market participants perceived a decline in demand. Furthermore, the decline in apparent consumption

[183] CR/PR at Table 4.8.

[184] CR/PR at Table C.1. We recognize that AUV comparisons may be influenced by differences in product mix and changes in product mix over time.

[185] CR/PR at Table C.1.

[186] CR/PR at Table 2.4.

does not explain the shift in market share from domestic producers to subject imports, nor the significant and increasing underselling by subject imports.

In sum, based on the record of the final phase of these investigations, we find that subject imports had a significant impact on the domestic industry.

VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of CAPEs from China that have been found by Commerce to be sold in the United States at LTFV and subsidized by the government of China.

Part 1: 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 1.1 presents information relating to the background of these investigations.[2] [3]

Table 1.1 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 13, 2024	Commerce's notice of initiation (89 FR 43801 and 89 FR 43821, May 20, 2024)
June 7, 2024	Commission's preliminary determinations (89 FR 49905, June 12, 2024)
October 4, 2024	Commerce's preliminary countervailing duty determination (89 FR 80870, October 4, 2024)
December 4, 2024	Commerce's preliminary antidumping duty determination (89 FR 96223, December 4, 2024); scheduling of final phase of Commission investigations (89 FR 103877, December 19, 2024)
April 8, 2025	The Commission's hearing was cancelled (90 FR 15576, April 14, 2025)
April 18, 2025	Commerce's final determinations (90 FR 17373 and 90 FR 17404, April 25, 2025)
May 15, 2025	Commission's vote
June 2, 2025	Commission's views

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

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

[3] Appendix B presents the Federal Register notice cancelling the Commission's hearing.

Statutory criteria

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

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

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

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

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

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

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

Organization of report

Part 1 of this report presents information on the subject merchandise, subsidy rates/dumping margins, and domestic like product. Part 2 of this report presents information on conditions of competition and other relevant economic factors. Part 3 presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts 4 and 5 present the volume of subject imports and pricing of domestic and imported products, respectively. Part 6 presents information on the financial experience of U.S. producers. Part 7 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 as flame retardants in polyisocyanurate (PIR) and polyurethane (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]

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.
[6] Petition Vol. 1, p. 12.
[7] Ibid.

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 *** of China. The leading U.S. importers of CAPEs from China are ***. *** is the leading importer of CAPEs from Germany. The vast majority of U.S. purchasers of CAPEs are end users; leading purchasers 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 China totaled *** metric tons ($***) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** metric tons ($***) 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. The Commission's questionnaires collected data for the years 2021 to 2023 and interim periods January to September of 2023 ("interim 2023") and January to September of 2024 ("interim 2024"). Except as noted, U.S. industry data are based on questionnaire responses of two firms that accounted for *** of U.S. production of CAPEs during 2023. U.S. imports are based on adjusted official U.S. imports statistics of the U.S. Department of Commerce Census Bureau and data submitted in response to 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 subsidies and sales at LTFV

Subsidies

On April 25, 2025, Commerce published a notice in the Federal Register of its final determination of countervailable subsidies for producers and exporters of CAPEs from China.[8] Table 1.2 presents Commerce's findings of subsidization of CAPEs in China.

Table 1.2 CAPEs: Commerce's final subsidy determination with respect to imports from China

Entity	Final countervailable subsidy rate (percent)
Anhui RunYue Technology Co., Ltd.	117.51
Zhejiang Wansheng Co., Ltd.	81.82
Zhejiang Wanda Tools Group Corp	491.21
All others	91.07

Source: 90 FR 17373, April 25, 2025.

Note: Subsidy rate for Zhejiang Wanda Tools Group Corp. is based on facts available with adverse inferences.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Sales at LTFV

On April 25, 2025, Commerce published a notice in the Federal Register of its final determination of sales at LTFV with respect to imports from China.[9] Table 1.3 presents Commerce's dumping margins with respect to imports of CAPEs from China.

[8] 90 FR 17373, April 25, 2025.
[9] 90 FR 17404, April 25, 2025.

Table 1.3 CAPEs: Commerce's final weighted-average LTFV margins with respect to imports from China

Exporter	Producer	Final dumping margin (percent)
Anhui RunYue Technology Co., Ltd	Anhui RunYue Technology Co., Ltd	254.60
Zhejiang Wansheng Co., Ltd	Zhejiang Wansheng Co., Ltd	152.38
Aceto (Shanghai) Ltd	Xinji Hongzheng Chemical Co., Ltd	174.40
Anhui Shengli Import and Export Co., Ltd	Anhui Shengli Pesticide & Chemistry Co., Ltd	174.40
Anhui Shengli Import and Export Co., Ltd	Ningguo Long Day Chemical Co., Ltd	174.40
Fujian Wynca Technology Co., Ltd	Fujian Wynca Technology Co., Ltd	174.40
Fujian Wynca Technology Co., Ltd	Anhui RunYue Technology Co., Ltd	174.40
Fujian Wynca Technology Co., Ltd	Shandong Yarong Chemical Co., Ltd	174.40
Shandong Yarong Chemical Co., Ltd	Shandong Yarong Chemical Co., Ltd	174.40
Shanghai Iroyal Chemical Co., Ltd	Futong Chemical Co., Ltd	174.40
Shanghai Iroyal Chemical Co., Ltd	Fujian Wynca Technology Co., Ltd	174.40
Shanghai Iroyal Chemical Co., Ltd	Zhejiang Hong Hao Technology Co., Ltd	174.40
Shanghai Iroyal Chemical Co., Ltd	Shandong Yarong Chemical Co., Ltd	174.40
Shanghai Iroyal Chemical Co., Ltd	Xuancheng City Trooyawn Refined Chemical Industry Co., Ltd.	174.40
Shanghai Yongxiangshun International Trade Co., Ltd.	Hebei Zhenxing Chemical and Rubber Co., Ltd	174.40
Xuancheng City Trooyawn Refined Chemical Industry Co., Ltd.	Xuancheng City Trooyawn Refined Chemical Industry Co., Ltd.	174.40
Yoke Chemicals and New Materials (Shanghai) Co. Ltd.	Jiangsu Yoke Technology Co., Ltd	174.40

Exporter	Producer	Final dumping margin (percent)
Zhangjiagang Fortune Chemical Co., Ltd	Nantong Jiangshan Agrochemical & Chemicals Limited Liability Co., Ltd.	174.40
Zhangjiagang Fortune Chemical Co., Ltd	Shandong Yarong Chemical Co., Ltd	174.40
China Wide-Entity	China Wide-Entity	269.02

Source: 90 FR 17404, April 25, 2025.

Note: The China Wide-Entity dumping margin is based on facts available with adverse inferences.

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 96223, December 4, 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 2025 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 2025 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 2025 general rate of duty of 6.5 percent *ad valorem*. Effective September 24, 2018, CAPEs originating in China were subject to an additional 10 percent *ad valorem* duty under section 301 of the Trade Act of 1974. Effective May 10, 2019, the section 301 duty for CAPEs originating in China was increased to 25 percent *ad valorem*.[11] Effective February 4, 2025, CAPEs originating in China were subject to an additional 10 percent *ad valorem* duty under the International Emergency Economic Powers Act ("IEEPA"), and on March 4, 2025, that additional duty was increased to 20 percent *ad valorem*.[12] Effective April 5, 2025, CAPEs originating in China were subject to an additional 10 percent *ad valorem* reciprocal duty under IEEPA. That reciprocal duty rose to 84 percent *ad valorem* effective April 9, 2025, and rose again to 125 percent *ad valorem* effective April 10, 2025.[13] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

[11] 83 FR 47974, September 21, 2018; 84 FR 20459, May 9, 2019. See also HTS headings 9903.88.03 and 9903.88.04 and U.S. notes 20(e), 20(f), and 20(g) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 10, Publication 5615, April 2025, pp. 99.3.46 to 99.3.71, 99.3.354. Goods exported from China to the United States prior to May 10, 2019, and entering the United States prior to June 1, 2019, were not subject to the escalated 25 percent duty (84 FR 21892, May 15, 2019).

[12] 90 FR 9121, February 7, 2025; 90 FR 11426, March 6, 2025; 90 FR 11463, March 7, 2025. See also HTS heading 9903.01.20 and U.S. note 2(s) and HTS heading 9903.01.24 and U.S. note 2(u) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 10, Publication 5615, April 2025, pp. 99.3.3, 99.3.4, 99.3.297, and 99.3.298.

[13] The reciprocal duty is in addition to the 20 percent *ad valorem* duty under IEEPA that went into effect on March 4, 2025, for China. 90 FR 15041, April 7, 2025; 90 FR 15509, April 14, 2025; 90 FR 15625, April 15, 2025. See also HTS headings 9903.01.25 and 9903.01.63 and U.S. note 2(v) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 10, Publication 5615, April 2025, pp. 99.3.4 to 99.3.14, 99.3.298, and 99.3.305.

The product

Description and applications

The product subject to these investigations includes alkyl phosphate esters TCPP, TDCP, and TEP. CAPEs are clear colorless or pale-yellow liquids that are structurally similar and primarily used as flame retardants in rigid and flexible polyurethane foam applications.[14] 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.[15] (Figure 1.1) CAPEs can be used in overlapping end uses and used as standalone flame retardants or combined to achieve the properties required.[16]

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 to 30 percent) and bis(2-chloropropyl)-1-chloro-2-propyl phosphate (3 to 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 affecting their physical properties. TCPP is sold as a technical grade, where purity is reported as the sum of all TCPP isomers.[17]

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 to 7 percent) and bis(2,3-dichloropropyl)-1,3-dichloroisopropyl phosphate (0 to 3 percent). [18] 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.[19] 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.[20]

[14] Conference transcript, p. 20 (Laufer) and p. 9 (Symes); USITC Staff Fieldwork, ICL, February 19, 2025, p. 3.

[15] Conference transcript, p. 20 (Laufer).

[16] 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.

[17] Petition, Vol. I, p. 8; USITC Staff Fieldwork, ICL, February 19, 2025, p. 3.

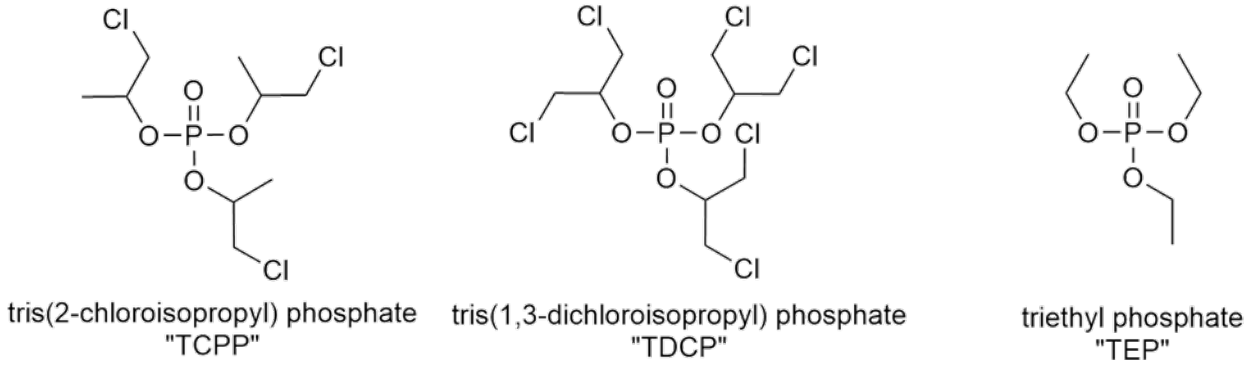
[18] Petition, Vol. I, p. 9.

[19] Petition, Vol. I, p. 9; USITC Staff Fieldwork, ICL, February 19, 2025, p. 3.

[20] Petition, Vol. I, p. 9.

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.[21] 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.[22]

Figure 1.1 CAPEs: Molecular structures of TCPP, TDCP, and TEP



Source: Prepared by staff based on information provided by the petitioner.

There is no quality difference between CAPEs produced in China and those produced by the domestic industry.[23] 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.[24]

CAPEs are primarily used as flame retardants in rigid and flexible polyurethane foam applications.[25] CAPEs are a necessary additive in most foam insulation applications because these foams are manufactured from petrochemicals, which are inherently flammable.[26] 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

[21] Conference transcript, p. 11 (Symes).
[22] Eastman postconference brief, p. 1.
[23] Conference transcript, pp. 14 and 16 (Symes).
[24] Petition, Vol. 1, p. 11.
[25] Conference transcript, p. 5 (Alves) and p. 9 (Symes).
[26] Conference transcript, p. 10 (Symes).

U.S. market is the replacement of fiberglass insulation with low-density, open cell insulation in residential housing.[27]

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.[28] The other mechanism is the scavenging of oxygen by chlorine contained in TCPP and TDCP.[29] This mechanism allows TCPP and TDCP to act as flame retardants in the vapor phase as well.[30] 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.[31] 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.[32] Since TCPP and TDCP contain chlorine as well as phosphorus, they are considered more efficient flame retardants.[33]

CAPEs are effective as flame retardants because they have low volatility and high thermal stability.[34] 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.[35]

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.[36] Conversely, its higher viscosity and lower volatility make it more effective in an automobile headliner.[37] Given its lower viscosity, TEP may be preferred in some applications, or it may be blended with another CAPE to achieve the desired properties.[38] The petitioner

[27] Conference transcript, p. 12 (Symes).
[28] Petition, Vol. 1, p. 8; USITC Staff Fieldwork, ICL, February 19, 2025, p. 3.
[29] Conference transcript, p. 49 (Symes).
[30] Conference transcript, p. 49 (Symes); USITC Staff Fieldwork, ICL, February 19, 2025, p. 3.
[31] Conference transcript, p. 11 (Symes).
[32] Conference transcript, p. 11 (Symes).
[33] Conference transcript, p. 10 (Symes).
[34] Conference transcript, p. 6 (Alves).
[35] Conference transcript, p. 6 (Alves).
[36] Conference transcript, p. 11 (Symes).
[37] 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.
[38] Conference transcript, pp. 11 to 12 (Symes).

asserted at the conference that all three CAPEs can be used interchangeably in the major applications.[39]

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."[40] 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.[41]

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.[42]

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.[43]

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.[44] The subject product can be manufactured by either a batch or continuous process.[45] The petitioner stated that it produces CAPEs in "semi-batch" processes.[46]

TCPP is produced by reacting phosphorous oxychloride with propylene oxide or 2-chloropropane in the presence of a catalyst. (Figure 1.2) 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).[47]

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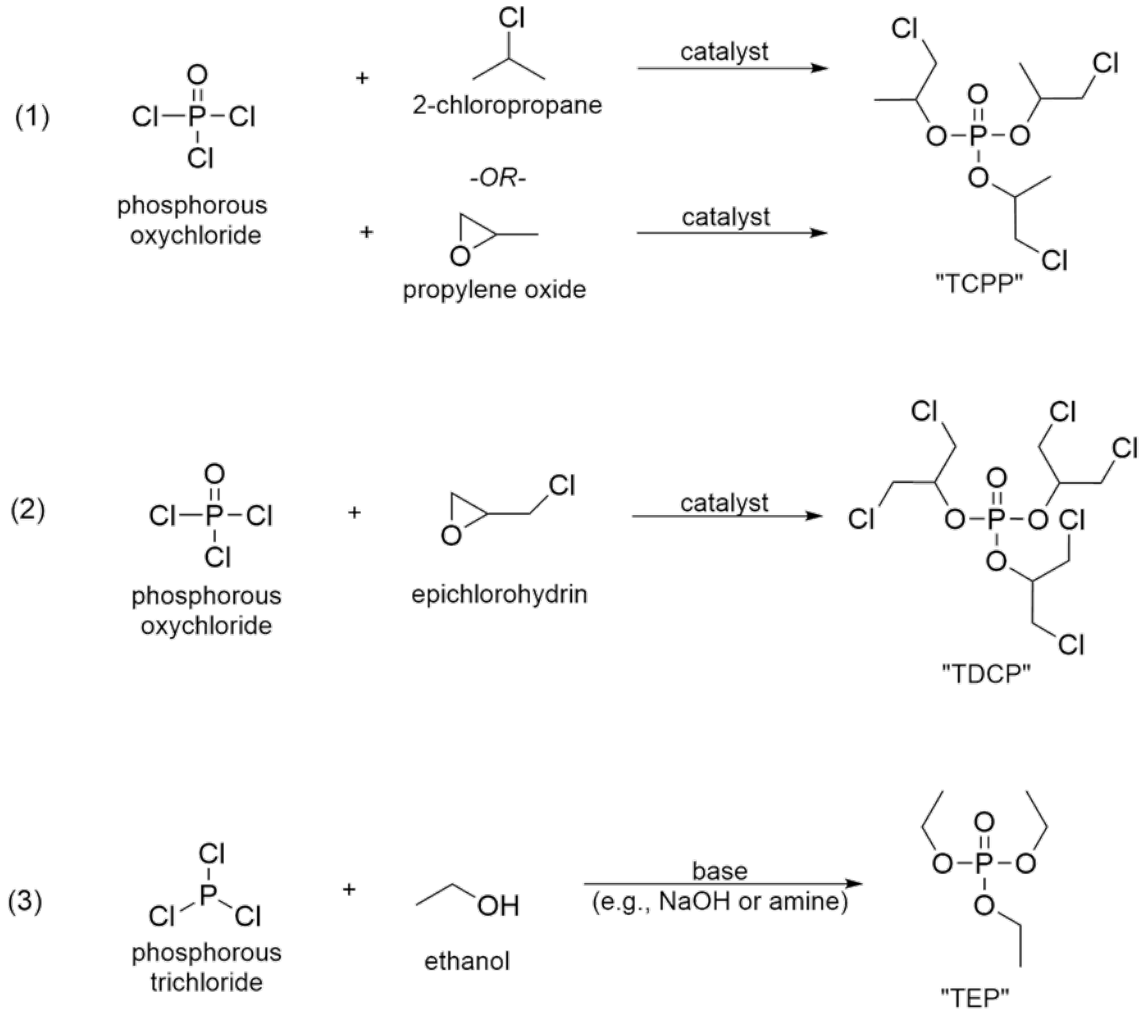
[39] Conference transcript, p. 12 (Symes).
[40] FCI postconference brief, p. 2.
[41] FCI postconference brief, p. 2.
[42] Petition, Vol. 1, p. 12.
[43] Conference transcript, p. 54 (Symes).
[44] Petition, Vol. 1, p. 10; Conference transcript, p. 5 (Alves) and p. 21 (Laufer).
[45] Petition, Vol. 1, p. 10.
[46] Conference transcript, p. 24 (Laufer).
[47] Petition, Vol. 1, pp. 10 to 11.

Figure 1.2 CAPEs: Manufacturing processes for TCPP, TDCP and TEP



Source: Prepared by staff based on information provided by petitioner.

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.[48]

[48] Petition, Vol. 1, pp. 10 to 11.

The petitioner has two reactor vessels, either of which can be used to produce TCPP and TDCP.[49] Chinese producers likely use the same manufacturing processes described above given that the petitioner stated that these processes have been known for decades.[50]

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.[51]

Domestic like product issues

In the preliminary phase of these investigations, the Commission defined a single domestic like product, consisting of all TCPP and TDCP, coextensive with the scope. In their comments to the final draft questionnaires, the petitioner requested that the Commission collect additional information of in-scope product comparability necessary for the analysis of the domestic like product.[52] The petitioner proposes that the Commission continue to define a single domestic like product consisting of CAPEs, corresponding to the scope of these investigations.[53] There were no comments from respondent parties in the final phase of these investigations.

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 1.4 and 1.5.

[49] Conference transcript, p. 5 (Alves); USITC Staff Fieldwork, ICL, February 19, 2025, p. 2.
[50] Conference transcript, p. 14 (Symes).
[51] Eastman postconference brief, p. 6.
[52] Petitioner's comments on draft questionnaires, August 13, 2024, p. 8.
[53] Petitioner's prehearing brief, p. 6.

Table 1.4 CAPEs: Count of firms' responses regarding the domestic like product factors comparing TCPP vs. TDCP

Count in number of firms reporting

Firm type	Factor	Fully	Mostly	Somewhat	Never
U.S. producers	Physical characteristics	***	***	***	***
U.S. producers	Interchangeability	***	***	***	***
U.S. producers	Channels	***	***	***	***
U.S. producers	Manufacturing	***	***	***	***
U.S. producers	Perceptions	***	***	***	***
U.S. producers	Price	***	***	***	***
U.S. importers	Physical characteristics	0	3	7	3
U.S. importers	Interchangeability	0	1	5	6
U.S. importers	Channels	4	1	4	3
U.S. importers	Manufacturing	1	2	5	2
U.S. importers	Perceptions	1	1	5	5
U.S. importers	Price	0	1	4	3
Purchasers	Physical characteristics	0	0	4	3
Purchasers	Interchangeability	0	0	2	5
Purchasers	Channels	1	0	1	4
Purchasers	Manufacturing	1	0	0	4
Purchasers	Perceptions	0	0	2	5
Purchasers	Price	0	0	0	4

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

Table 1.5 CAPEs: Count of firms' responses regarding the comparability: TEP with in-scope product

Count in number of firms reporting

Firm type	Product most comparable to TEP	Number of firms reporting
U.S. producers	TCPP	***
U.S. producers	TDCP	***
U.S. producers	TCPP mixed with something else	***
U.S. producers	TDCP mixed with something else	***
U.S. producers	Not most similar to scope	***
U.S. importers	TCPP	8
U.S. importers	TDCP	0
U.S. importers	TCPP mixed with something else	0
U.S. importers	TDCP mixed with something else	0
U.S. importers	Not most similar to scope	9
Purchasers	TCPP	3
Purchasers	TDCP	0
Purchasers	TCPP mixed with something else	0
Purchasers	TDCP mixed with something else	0
Purchasers	Not most similar to scope	11

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

Part 2: 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] These foams are used to insulate roofs and eaves, as well as in automotive and other foam applications. Commercial and residential construction, primarily commercial roofing, drive demand for CAPEs, with automotive and other sectors playing a lesser role.[2] As noted in Part 1, CAPEs are available as TCPP, TDCP, and TEP. TCPP is the most used CAPE in the U.S. market, largely due to its cost effectiveness. Petitioner ICL described the three types as somewhat interchangeable (possibly with some reformulation of the end-use product),[3] while importer FCI and *** importer Eastman stated that the products are not interchangeable.[4] Both domestic producers sell TCPP and TDCP but neither reported production of TEP. Importer *** reported that ***.

Apparent U.S. consumption of CAPEs decreased *** percent between January 2021 and December 2023, but was *** higher in January-September 2024 than in the same period of 2023. ICL stated that the COVID-19 pandemic reduced the supply of Chinese CAPEs in the U.S. market in 2021 and early 2022 but that Chinese supply returned to the U.S. market in 2022 and 2023.[5]

*** U.S. producers and 21 importers indicated that there had not been any significant changes to the product range, mix, or marketing of CAPEs since January 1, 2021.

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

U.S. purchasers

The Commission received 21 usable questionnaire responses from firms that had purchased CAPEs during January 2021 to September 2024.[6] [7] [8] The responding purchasers represent firms in a variety of domestic industries, including construction and automotive industries. Thirteen responding purchasers are end users (10 insulation, 3 automotive), 6 are blenders or processors, 1 is a distributor, and 3 are other end users (including producers of acoustic insulators, construction products, and lithium batteries). In general, responding U.S. purchasers are located in the Northeast and Central Southwest. Large purchasers of CAPEs include ***.

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. Twelve U.S. purchasers reported that section 301 tariffs impacted overall demand, supply, prices, or raw material costs, while three reported no impact. The affirmative responses noted prices of U.S.-produced and Chinese CAPEs increased. For example, purchaser *** reported that domestic prices increased substantially through 2022 due to the section 301 duties. They explained that global market conditions changed as producers recovered from COVID-19-related market disruptions, and domestic prices did not reduce anywhere near in line with the global market trends. They went on to state that they continue to purchase from a domestic producer for supply security and to have a local source.

[6] The following firms provided purchaser questionnaire responses: ***.

[7] Of the 21 responding purchasers, 16 purchased the domestic CAPEs, 17 purchased imports of the subject merchandise from China, and 3 purchased imports of CAPEs from other sources.

[8] Nineteen purchasers indicated they had marketing/pricing knowledge of domestic product, 19 of Chinese product, and 6 of product from nonsubject countries.

Fourteen importers reported that the section 301 tariffs affected the market for CAPEs. *** reported that the increased costs were difficult for end users to accommodate, but "surprisingly" the market was able to adjust. *** described maintaining supply after the tariffs as "a challenge." *** reported that the tariffs increased overall market cost of material, regardless of country of origin of the products. *** 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 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. *** both reported that the tariffs only increased the domestic market prices for TEP. Five importers stated that section 301 tariffs did not affect the U.S. market for CAPES, and four indicated that they did not know.

Channels of distribution

U.S. producers and importers sold mainly to end users, as shown in table 2.1.

Table 2.1 CAPEs: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent; Interim is January through September

Source	Channel	2021	2022	2023	Interim 2023	Interim 2024
United States	Distributors	***	***	***	***	***
United States	End users	***	***	***	***	***
China	Distributors	***	***	***	***	***
China	End users	***	***	***	***	***
Nonsubject	Distributors	***	***	***	***	***
Nonsubject	End users	***	***	***	***	***
All imports sources	Distributors	***	***	***	***	***
All imports sources	End users	***	***	***	***	***

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 2.2). For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table 2.2 CAPEs: Count of U.S. producers' and U.S. importers' geographic markets

Count in number of firms reporting

Region	U.S. producers	China
Northeast	***	11
Midwest	***	15
Southeast	***	15
Central Southwest	***	16
Mountains	***	8
Pacific Coast	***	11
Other	***	1
All regions (except Other)	***	6
Reporting firms	2	18

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

Table 2.3 provides a summary of the supply factors regarding CAPEs from U.S. producers and from subject countries. Based on the available information, the capacity of Chinese producers participating in these investigations declined, but in 2023 remained substantially higher than U.S. capacity, which remained constant.

Table 2.3 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; Count in the number of firms reporting

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	Count	***	***

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

Note: Responding U.S. producers accounted for virtually all of U.S. production of CAPEs in 2023. Responding foreign producer/exporter firms accounted for more than half 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 1, "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 between 2021 and 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.

The other product that producer *** reportedly can produce on the same equipment as CAPEs is ***.[9] Factors affecting U.S. producers' ability to shift production include the significant capital investment to create production-shifting capabilities as well as new regulatory requirements.

Subject imports from China

Considering the 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. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, and moderate exports to third-country markets. Factors mitigating responsiveness of supply include low inventories. The data reported in table 2.3 account for slightly over half of Chinese imports.

Imports from nonsubject sources

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

[9] Producer *** reported that ***.

Supply constraints

Both U.S. producers and seven importers (***) reported that they had experienced supply constraints since January 1, 2021. All of these firms listed shortages related to the COVID-19 pandemic as constraints. *** described Chinese shortages in 2021 and the first quarter of 2022 as leading to shortages of CAPEs in the U.S. market, ***. It also stated that when imports from China returned in the second quarter of 2022, it immediately experienced reduced orders. *** reported that the ***.[10] 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. One importer (***) also indicated that rail and ship disruptions as well as Panama Canal issues had caused supply constraints. Fourteen importers (***) indicated that they had not experienced supply constraints.

Importers *** stated that ICL does not have enough production capacity to fully supply the domestic market.

New suppliers

Sixteen purchasers indicated that no new suppliers entered the U.S. market since January 1, 2021. Five purchasers cited the entry of new suppliers, specifically Aimtops (United States), Elite Materials (Taiwan), Jelin (China); ICool Chemical (China), Isochem (United States), Thames River Chemical (Canada), and Rokita (Poland).

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.

[10] Petitioner's posthearing brief, p. 6

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 fire retardant characteristics. A small share of overall CAPEs demand is also for the automotive and other sectors.[11] CAPEs account for a small share (generally 3 to 20 percent) of the cost of the end-use products in which they are used. Some reported end uses include:

- Insulation panels (4-8 percent);
- Roofing insulation (*** percent);
- Rigid foam flame retarder (5-7 percent);
- Spray systems (5-30 percent);
- Foam coatings (*** percent);
- Sealants and adhesives (9-15 percent); and
- Wall insulation (*** percent).

Business cycles

*** and 13 other importers indicated that the CAPEs market is not subject to business cycles. *** elaborated that the demand for rigid polyurethane insulation, an end use product of CAPEs, generally followed the construction industry, with slightly higher demand in summer. *** and five other importers indicated that the CAPEs market was subject to business cycles that are based on energy costs and new construction.

*** and 12 other importers indicated that the CAPEs market was not subject to distinctive conditions of competition, other than the business cycles described above. *** and five other importers indicated that there were such distinctive conditions. *** reported that purchasers can delay capital-intensive choices (by repairing rather than replacing roofs and insulation) during weak economic periods, and importer *** reported that domestic distributors compete directly with Chinese producers that sell to U.S. purchasers, resulting in lower prices and increased competition.

Demand trends

Most firms reported an increase in U.S. demand for CAPEs since January 1, 2021 (table 2.4). Purchasers specified that demand for insulation end products has increased overall in the United States. Purchaser ***, which purchases *** specifically, stated that it has been

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

steadily increasing their purchases as it increases U.S. production of downstream products. Most importers and *** U.S. producers noted that demand increased, in part due to a greater interest in improving buildings' energy efficiency.

A majority of firms reported an increase in U.S. demand for CAPEs since January 1, 2021, with most of the remaining firms reporting no change. *** 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. Importer *** stated that the spray foam market is growing at 13 percent per year, driving an increase in demand for CAPEs. Importer *** stated that ICL only has the capacity to cover 50 percent of U.S. demand for CAPEs which has contributed to the importer's demand for imported CAPEs. Importers *** reported growth in the insulation market.

Table 2.4 CAPEs: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Count in number of firms reporting

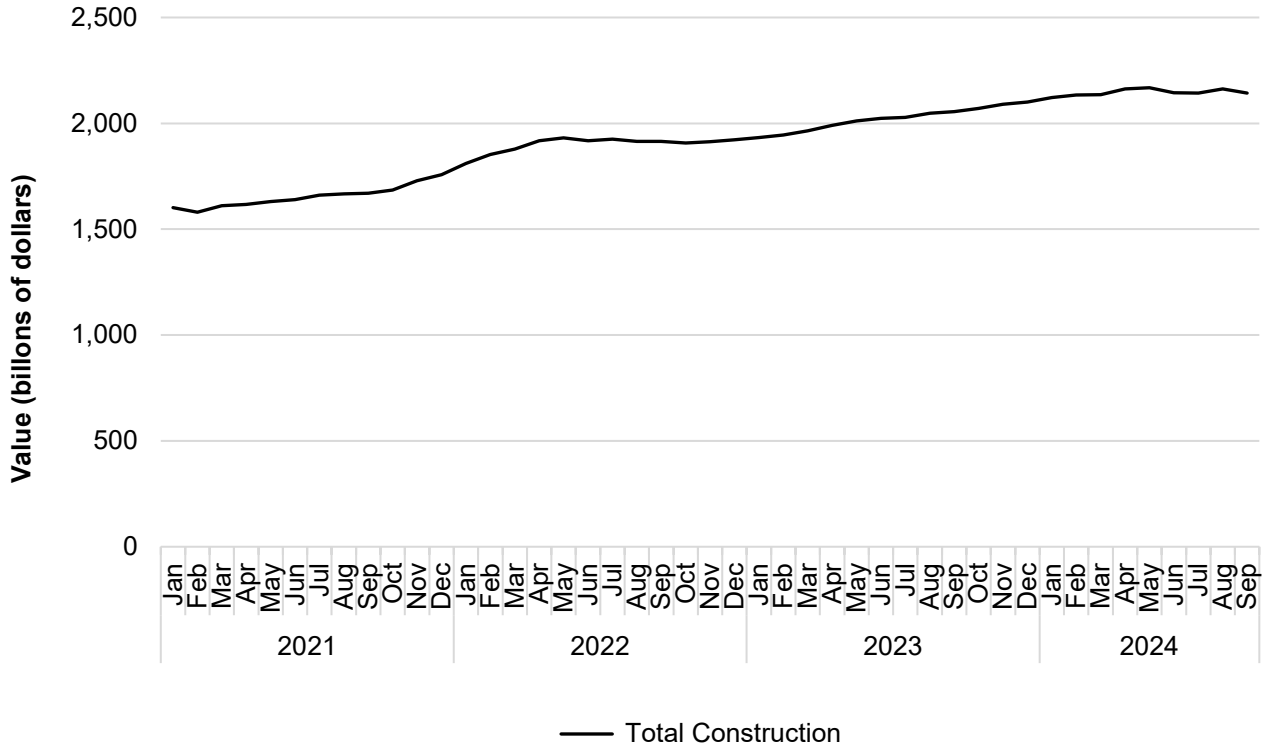
Market	Firm type	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	7	3	7	2	1
Domestic demand	Purchasers	6	3	4	6	0
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	4	2	6	0	2
Foreign demand	Purchasers	4	1	3	1	0
Demand for end use products	Purchasers	4	7	3	8	1

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

Petitioner stated that demand for CAPEs follows construction spending.[12] Real value-added in construction increased 33.8 percent from the first quarter of 2021 to the third quarter of 2024, as shown in table 2.5 and figure 2.1.

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

Figure 2.1 CAPEs: Total Construction in the United States, January 2021 through September 2024



Source: Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, "Total Construction in the United States, Monthly, Seasonally Adjusted Annual Rate" https://fred.stlouisfed.org (accessed March 23, 2025).

Table 2.5 CAPEs: Total Construction in the United States, January 2021 through September 2024
Value in billions of dollars

Year	Month	Value
2021	January	1,601
2021	February	1,580
2021	March	1,611
2021	April	1,617
2021	May	1,630
2021	June	1,640
2021	July	1,661
2021	August	1,667
2021	September	1,670
2021	October	1,685
2021	November	1,728
2021	December	1,757
2022	January	1,810
2022	February	1,853
2022	March	1,879
2022	April	1,918
2022	May	1,931
2022	June	1,918
2022	July	1,926
2022	August	1,915
2022	September	1,914
2022	October	1,908
2022	November	1,913
2022	December	1,922
2023	January	1,932
2023	February	1,945
2023	March	1,965
2023	April	1,990
2023	May	2,012
2023	June	2,023
2023	July	2,027
2023	August	2,047
2023	September	2,055
2023	October	2,071
2023	November	2,091
2023	December	2,101
2024	January	2,122
2024	February	2,134
2024	March	2,136
2024	April	2,163
2024	May	2,168
2024	June	2,144
2024	July	2,143
2024	August	2,162
2024	September	2,142

Source: Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, "Total Construction in the United States, Monthly, Seasonally Adjusted Annual Rate" https://fred.stlouisfed.org (accessed March 23, 2025).

Substitute products

Substitutes for CAPEs are limited and/or more costly than CAPEs. Seventeen 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 more than three times more expensive than those used to manufacture CAPEs. *** stated that tetrabromophthalate diol can replace TCPP in "a few" rigid foam applications. The three firms that stated that there were substitutes for CAPEs also indicated that changes in the prices of these substitute products had not affected the prices of CAPEs.

Importer *** indicated that while they are not direct substitutes, some organic phosphorous compounds could be used place of CAPEs in insulation boards and spray foam but would require a change in manufacturing formulations.

Substitutability issues

This section assesses the degree to which U.S.-produced CAPEs and imports of CAPEs from China 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.[13] Factors contributing to this level of substitutability include a high level of interchangeability between U.S., and Chinese product, mitigated by some issues of availability of U.S. product.

[13] 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.).

Factors affecting purchasing decisions

Purchaser decisions based on source

As shown in table 2.6, a plurality of purchasers and their customers never make purchasing decisions based on the producer or country of origin. Of the five purchasers that reported that they always make decisions based the manufacturer, two firms cited only purchasing from well-established firms and another reported purity tolerances that are specific to a manufacturer. Two purchasers reported that they always make decisions based the manufacturer, with one firm reporting that it prefers domestically produced CAPEs to mitigate supply chain risk.

Table 2.6 CAPEs: Count of purchasers' responses regarding frequency of purchasing decisions based on producer and country of origin

Firm making decision	Decision based on	Always	Usually,	Sometimes	Never
Purchaser	Producer	5	2	5	9
Customer	Producer	0	1	2	16
Purchaser	Country	2	1	5	13
Customer	Country	0	2	1	16

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

Importance of purchasing domestic product

Eighteen purchasers reported that 100 percent of their purchases did not require purchasing U.S.-produced product. Purchaser *** indicated that 22 percent of its purchases did not have such requirements but that 78 percent did, due to customer requirements. One purchaser reported a preference for domestic product because of the shorter supply chain, and two purchasers (***) reported they preferred domestic product if it was price competitive.

Most important purchase factors

The most often cited top three factors that firms consider in their purchasing decisions for CAPEs were availability of supply (17 firms), quality (16 firms),[14] and price (16 firms) as shown in table 2.7. Quality was the most frequently cited first-most important factor (cited by 10 firms), followed by availability of supply (6 firms); availability of supply was the most frequently reported second-most important factor (9 firms); and price was the most frequently

[14] All responding purchasers reported factors that determined product quality, including properties such as fire performance, uniformity, purity, viscosity, adherence to company specifications, and conformity with industry standards.

reported third-most important factor (9 firms). Half of responding purchasers (10 of 20) reported that they usually purchase the lowest-priced product, four reported that they never did, four reported that they sometimes did, and two reported that they always did.

Table 2.7 CAPEs: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Factor	First	Second	Third	Total
Availability / Supply	6	9	3	17
Quality	10	2	4	16
Price / Cost	2	5	9	16
All other factors	3	3	3	NA

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

Note: Other factors include the ability advance or delay deliveries, partnership relationships with vendors, and U.S. government qualification of supplier. Additionally, purchaser *** reported a ***.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table 2.8). The factors rated as very important by more than half of responding purchasers were availability (21 firms); product consistency, and reliability of supply (20 each); quality meets industry standards (19 firms), price (16 firms); and delivery time (13 firms).

Table 2.8 CAPEs: Count of purchasers' responses regarding importance of purchase factors, by factor

Factor	Very important	Somewhat important	Not important
Availability	21	0	0
Delivery terms	10	9	1
Delivery time	13	7	0
Discounts offered	4	5	9
Minimum quantity requirements	1	5	13
Packaging	7	9	4
Payment terms	9	10	2
Price	16	5	0
Product consistency	20	0	0
Product range	5	5	10
Quality meets industry standards	19	2	0
Quality exceeds industry standards	5	11	4
Reliability of supply	20	1	0
Technical support/service	3	12	5
U.S. transportation costs	6	13	1

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

Lead times

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

Supplier certification

Twenty of 21 responding purchasers require their suppliers to become certified or qualified to sell CAPEs to their firm. Purchasers reported that the time to qualify a new supplier ranged from five days to one year. One purchaser (***) reported that a domestic supplier had failed in its attempt to qualify CAPEs, explaining that ***. Five purchasers reported that Chinese foreign suppliers had failed in their attempt to qualify CAPEs; firms that failed to certify include ***.

Minimum quality specifications

Table 2.9 shows six responding purchasers reported that domestically produced product always met minimum quality specifications. Six responding purchasers reported that the CAPEs imported from China always met minimum quality specifications. (Three of these six purchasers also reported that domestically produced product always met minimum quality specifications).

Table 2.9 CAPEs: Count of purchasers' responses regarding suppliers' ability to meet minimum quality specifications, by source

Source of purchases	Always	Usually	Sometimes	Rarely or never	Don't Know
United States	6	0	0	2	13
China	6	0	0	2	13
All other sources	0	0	0	9	3

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

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

Changes in purchasing patterns

Sixteen purchasers reported that they had changed suppliers since January 1, 2021, while five reported that they had not. Specifically, 2 of 16 firms dropped or reduced purchases from *** because of ***. Five firms added or increased purchases from Chinese producer *** because of ***. Firms also reported changes generally in order to diversify their supply.

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2021 (table 2.10). Purchasers reported decreased purchases of U.S.-

produced CAPEs because of limited domestic availability, a need for reliable supply, and higher domestic prices. Purchasers reported increased purchases of CAPEs from China because of lower prices, diversification and security of supply, and consistent availability. Purchasers reported little change in purchases of product from nonsubject countries.

Table 2.10 CAPEs: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease	Did not purchase
United States	1	1	1	7	8	2
China	5	8	1	4	1	1
All other sources	0	1	2	1	1	7
Sources unknown	0	0	3	0	0	9

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

Purchase factor comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked to compare CAPEs produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table 2.11) for which they were asked to rate the importance.

Most purchasers reported that U.S.-produced CAPEs and CAPEs imported from China were comparable on all factors except price (for which U.S.-produced CAPEs are inferior/higher priced) and delivery time (for which the U.S.-produced CAPEs are superior). Regarding availability, purchasers' opinions were split, with nine firms each reporting that U.S.-produced CAPEs are comparable and inferior to CAPEs imported from China.

Table 2.11 CAPEs: Count of U.S. purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. vs China	1	9	9
Delivery terms	U.S. vs China	4	13	2
Delivery time	U.S. vs China	9	6	4
Discounts offered	U.S. vs China	0	10	5
Minimum quantity requirements	U.S. vs China	0	16	2
Packaging	U.S. vs China	1	16	1
Payment terms	U.S. vs China	1	12	5
Price	U.S. vs China	2	4	13
Product consistency	U.S. vs China	0	18	0
Product range	U.S. vs China	0	17	0
Quality meets industry standards	U.S. vs China	0	18	0
Quality exceeds industry standards	U.S. vs China	1	15	0
Reliability of supply	U.S. vs China	2	10	6
Technical support/service	U.S. vs China	6	11	0
U.S. transportation costs	U.S. vs China	2	14	1

Table continued.

Table 2.11 (Continued) CAPEs: Count of U.S. purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. vs Nonsubject	3	4	0
Delivery terms	U.S. vs Nonsubject	3	4	0
Delivery time	U.S. vs Nonsubject	5	2	0
Discounts offered	U.S. vs Nonsubject	1	5	1
Minimum quantity requirements	U.S. vs Nonsubject	1	6	0
Packaging	U.S. vs Nonsubject	1	6	0
Payment terms	U.S. vs Nonsubject	1	6	0
Price	U.S. vs Nonsubject	0	3	4
Product consistency	U.S. vs Nonsubject	1	6	0
Product range	U.S. vs Nonsubject	0	7	0
Quality meets industry standards	U.S. vs Nonsubject	0	7	0
Quality exceeds industry standards	U.S. vs Nonsubject	0	7	0
Reliability of supply	U.S. vs Nonsubject	0	6	1
Technical support/service	U.S. vs Nonsubject	0	7	0
U.S. transportation costs	U.S. vs Nonsubject	1	6	0

Table continued.

Table 2.11 (Continued) CAPEs: Count of U.S. purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	China vs. Nonsubject	3	3	0
Delivery terms	China vs. Nonsubject	3	3	0
Delivery time	China vs. Nonsubject	2	4	0
Discounts offered	China vs. Nonsubject	1	5	0
Minimum quantity requirements	China vs. Nonsubject	0	6	0
Packaging	China vs. Nonsubject	0	6	0
Payment terms	China vs. Nonsubject	2	4	0
Price	China vs. Nonsubject	3	3	0
Product consistency	China vs. Nonsubject	2	4	0
Product range	China vs. Nonsubject	1	5	0
Quality meets industry standards	China vs. Nonsubject	1	5	0
Quality exceeds industry standards	China vs. Nonsubject	0	6	0
Reliability of supply	China vs. Nonsubject	4	2	0
Technical support/service	China vs. Nonsubject	0	5	1
U.S. transportation costs	China vs. Nonsubject	1	5	0

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

Note: With respect to cost/price factors, a rating of superior means that the cost/price for the first source in the country pair is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

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, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table 2.12, 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 in most applications. Importer ***.

Table 2.12 CAPEs: Count of firms reporting interchangeability between product produced in the United States and in other countries reported, by firm type and country pair

Country pair	Firm type	Always	Frequently	Sometimes	Never
United States vs. China	U.S. producers	***	***	***	***
United States vs. Other	U.S. producers	***	***	***	***
China vs. Other	U.S. producers	***	***	***	***
United States vs. China	Importers	11	3	2	1
United States vs. Other	Importers	9	2	0	0
China vs. Other	Importers	9	2	1	1
United States vs. China	Purchasers	9	9	0	0
United States vs. Other	Purchasers	4	3	1	0
China vs. Other	Purchasers	4	2	1	0

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

In addition, U.S. producers, importers, and purchasers 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 table 2.13, *** U.S. producers described such differences as never significant, while importers' responses were varied, and most purchasers reported that differences other than price were always significant. Purchaser *** reported that quality and supply availability are critical factors in order to meet the regulations for their products. Purchaser *** reported that quality and on time delivery are frequently more important than the price since any shutdowns in their plants can cost more than the cost of the raw materials. Purchaser *** reported supply disruptions and any lack of availability are important factors.

In additional comments, *** and importer *** reported that price differences of only a few cents as deciding sales for CAPEs.

Table 2.13 CAPEs: Count of firms reporting the significance of differences other than price between product produced in the United States and in other countries reported, by firm type and country pair

Country pair	Firm type	Always	Frequently	Sometimes	Never
United States vs. China	U.S. producers	***	***	***	***
United States vs. Other	U.S. producers	***	***	***	***
China vs. Other	U.S. producers	***	***	***	***
United States vs. China	Importers	8	2	6	2
United States vs. Other	Importers	5	1	4	2
China vs. Other	Importers	4	1	4	2
United States vs. China	Purchasers	9	2	5	1
United States vs. Other	Purchasers	5	0	2	1
China vs. Other	Purchasers	4	1	1	1

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

Elasticity estimates

This section discusses elasticity estimates; parties did not have any comments on these estimates.

U.S. supply elasticity

The domestic supply elasticity for CAPEs measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of CAPEs. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced CAPEs. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 6 to 10 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for CAPEs measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of CAPEs. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the CAPEs in the production of any downstream products. Based on the available information, the aggregate demand for CAPEs is likely to be very to moderately inelastic; a range of -0.25 to -0.75 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[15] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced CAPEs and imported CAPEs is likely to be moderate-to-high in the range of 3 to 6. 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.

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

Part 3: 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 1 of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part 4 and Part 5. Information on the other factors specified is presented in this section and/or Part 6 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 3.1 lists U.S. producers of CAPEs, their production locations, positions on the petition, and shares of total production.

Table 3.1 CAPEs: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2023

Shares in percent

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.

[1] ***. Email from ***, counsel to ***, May 15, 2024. See also U.S. producer questionnaire response on January 22, 2025, certifying there has been no U.S. production since January, 1, 2021. Further, *** stated that TEP production results in a crude TEP product with hydrochloric acid as a byproduct. Disposing of this byproduct is challenging ***. ***'s postconference brief, p. 6. Currently, ***. ***'s U.S. importer questionnaire, pp. 8 to 16. Therefore, there are only two known U.S. producers of CAPEs at this time, ICL and Lanxess.

Table 3.2 presents information on U.S. producers' ownership, related and/or affiliated firms.

Table 3.2 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 ***. Email from ***, May 31, 2024.

As indicated in table 3.2, ***. 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 3.3 presents the changes identified by these producers.

Table 3.3 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 3.4 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 levels from 2021 to interim 2024 but installed overall production fell by *** percent from 2021 to 2023 and was lower in interim 2024 by *** percent compared to interim 2023.[2] Therefore, installed overall capacity utilization rates were down by *** percentage points in 2023 compared to 2021 and were lower by *** percentage points in interim 2024, than in interim 2023. Reported practical overall capacity remained virtually the same during the period but practical overall production, as with installed overall production, declined by approximately *** from 2021 to 2023, resulting in practical overall capacity utilization rates decreasing by *** percentage points during the same period and lower overall practical capacity utilization rates by *** percentage points in interim 2024 compared to interim 2023. There were similar trends for practical CAPEs capacity, which remained constant from 2021 to 2023 and interim periods, while aggregate CAPEs production decreased by *** percent from 2021 to 2023 and was *** percent lower in interim 2024, compared to interim 2023. Likewise, practical capacity utilization rates for CAPEs were down by *** percentage points from 2021 to 2023 and were lower by *** percentage points in interim 2024, compared to interim 2023.

[2] *** was the main driver of this trend with a decrease of *** percent in installed overall production in the same machinery from 2021 to 2023, while both U.S. producers had lower production levels by approximately a *** each in interim 2024, compared to interim 2023.

Table 3.4 CAPEs: U.S. producers' installed and practical capacity, production, and utilization on the same equipment as in-scope production, by period

Capacity and production in metric tons; utilization in percent; interim period is January to September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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 3.5 presents U.S. producers' reported narratives regarding practical capacity constraints.

Table 3.5 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 3.6 and figure 3.1 present U.S. producers' practical CAPEs capacity, production, capacity utilization, and share of production. Although practical CAPEs capacity remained constant from 2021 to 2023 and interim periods, aggregate production rates decreased for ICL and Lanxess by *** percent from 2021 to 2023 and were *** percent lower in interim 2024 than in interim 2023.[3] Consequently, from 2021 to 2023 CAPEs capacity utilization rates also dropped *** percentage points for ICL and *** percentage points for Lanxess, with an aggregate decrease of *** percentage points in 2023 compared to 2021. The aggregate capacity utilization rate was *** percentage points lower in interim 2024 than in interim 2023. *** is the larger CAPEs U.S. producer, accounting for nearly *** of the U.S. production in 2023 and the largest production decrease in all periods; although this share slightly declined from 2021 to 2023 but was higher in interim 2024 compared to interim 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 to 24 (Steele).

Table 3.6 CAPEs: U.S. producers' output, by firm and period

Practical capacity

Capacity in metric tons; interim period is January to September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 3.6 (Continued) CAPEs: U.S. producers' output, by firm and period

Production

Production in metric tons; interim period is January to September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 3.6 (Continued) CAPEs: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization ratios in percent; interim period is January to September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

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

Table 3.6 (Continued) CAPEs: U.S. producers' output, by firm and period

Share of production

Share of production in percent; interim period is January to September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

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

Figure 3.1 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 3.7, *** percent of the product produced during 2023 by U.S. producers using the same equipment as in-scope production was CAPEs; this was a *** percentage point decrease from 2021, when CAPEs production share was *** percent. On the same production line, one firm (***) reported producing ***.[4] The decreasing share of CAPEs production on the same equipment as in scope production is mostly due to the steep decline in CAPEs production coupled with a moderate increase of *** percent of out-of-scope products during 2021 to 2023. However, production of other products on the same equipment was *** percent lower in interim 2024 compared to interim 2023.

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

Table 3.7 CAPEs: U.S. producers' overall production on the same equipment as in-scope production, by product type and period

Quantity in metric tons; ratio and share in percent; interim period is January to September

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
CAPEs	Quantity	***	***	***	***	***
Other products	Quantity	***	***	***	***	***
All products	Quantity	***	***	***	***	***
CAPEs	Share	***	***	***	***	***
Other products	Share	***	***	***	***	***
All products	Share	100.0	100.0	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 3.8 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 2021, and over *** percent in 2022 and 2023, including interim periods. U.S. shipments decreased *** percent by quantity from 2021 to 2023 and were lower by *** percent in interim 2024 than in interim 2023. By value, U.S. shipments declined by *** percent in the same period, as U.S. shipment values decreased sharply between 2022 and 2023, and were lower by *** percent in interim 2024 than in interim 2023. The quantity and value of export shipments also decreased year-on-year between 2021 and 2023, including interim periods. Total shipments followed similar trends and decreased by *** percent by quantity and *** percent by value between 2021 and 2023 and were lower in interim 2024 than in interim 2023. Unit values for U.S. shipments, export shipments, and total shipments ranged between $*** and $*** per metric ton from full year 2021 to 2023 and all increased from 2021 to 2022 but then decreased in 2023. Unit values of U.S. and total shipments were lower in interim 2024 than in interim 2023, while export shipment unit values were higher across interim periods.

Table 3.8 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; interim period is January to September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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	100.0	100.0

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

Table 3.9 presents U.S. producers' U.S. shipments by type. Commercial U.S. shipments accounted for nearly all (***) U.S. producers' U.S. shipments by quantity and value during 2021 to 2023, and interim periods. From 2021 to 2023, the share of internal consumption ranged between *** and *** percent for quantity and value, including interim periods. Commercial U.S. shipments quantities dropped *** percent between 2021 and 2023 and were lower by *** percent in interim 2024 than in interim 2023.[5] Commercial U.S. shipment values followed similar trends.

[5] *** accounted for the vast majority of the decrease in producers' U.S. commercial shipments by quantity and value during the period of data collection.

Table 3.9 CAPEs: U.S. producers' U.S. shipments, by type and period

Quantity in metric tons; value in 1,000 dollars; unit value in dollars per metric tons; shares in percent; interim period is January to September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Commercial U.S. shipments	Quantity	***	***	***	***	***
Internal consumption	Quantity	***	***	***	***	***
U.S. shipments	Quantity	***	***	***	***	***
Commercial U.S. shipments	Value	***	***	***	***	***
Internal consumption	Value	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Commercial U.S. shipments	Unit value	***	***	***	***	***
Internal consumption	Unit value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***	***	***
Internal consumption	Share of quantity	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Commercial U.S. shipments	Share of value	***	***	***	***	***
Internal consumption	Share of value	***	***	***	***	***
U.S. shipments	Share of value	***	***	***	***	***

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

Additional information on U.S. producers' U.S. shipments by type is presented in appendix E, tables E.1, E.5, and figure E.1. TCPP accounted for the vast majority of CAPEs' U.S. shipments which were *** percent by quantity and *** percent by value in 2023 (see table E.1). TCPP's quantity and value shares were higher in interim 2024 than in interim 2023. TDCP accounted for the remaining shares, while *** reported producing or shipping TEP. Consistent with previous production and shipment data, U.S. shipment quantities for both TCPP and TDCP decreased from 2021 to 2023 and interim periods; U.S. shipment values for all product types decreased from 2021 to 2023 by *** percent and were lower by *** percent in interim 2024 than in interim 2023. The share of quantity for TCPP increased slightly by *** percentage points from 2021 to 2023 and was higher in interim 2024 compared to interim 2023. Aggregate unit values for all product types increased irregularly from 2021 to 2023, but were lower in interim 2024 compared to interim 2023. TDCP's unit values were generally higher than TCPP's in all periods, especially in 2023 and both interim periods.

Figure 3.2 presents U.S. producers' U.S. shipments of CAPEs in 2023, by product type.

Figure 3.2 CAPEs: U.S. producers' U.S. shipments in 2023, by product type

* * * * * * *

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

Note: Data presented in this figure are detailed in appendix E. ***.

U.S. producers' inventories

Table 3.10 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 decreased irregularly by *** percent from 2021 to 2023 and was lower by *** percent in interim 2024 than in interim 2023.[6] As a ratio to U.S. production, inventories increased by *** percentage points from 2021 to 2023 but were lower by *** percentage points in interim 2024 compared to interim 2023. As a ratio to U.S. shipments, ending inventories increased by *** percentage points from 2021 to 2023, but were lower by *** percentage points in interim 2024 compared to interim 2023. Ending inventory ratios to total shipments followed similar trends between 2021 and 2023 and interim periods.

[6] Citing differences in financial periods and stock transfers, *** did not reconcile its inventories, which were off by ***. ***'s U.S. producer questionnaire, section II.8.

Table 3.10 CAPEs: U.S. producers' inventories and their ratio to select items, by period

Quantity in metric tons; ratios in percent; interim period is January to September

Item	2021	2022	2023	Interim 2023	Interim 2024
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 3.11 and 3.12, and reasons for importing are presented in table 3.13. *** reported importing CAPEs from China in 2021 through interim 2024. ***'s ratio of imports from China to U.S. production increased by *** percentage points between 2021 and 2023[7] but was *** percentage points lower in interim 2024 than in interim 2023. ***'s ratio of imports from China to U.S. production increased by *** percentage points between 2021 and 2023 and was higher in interim 2024 by *** percentage points, compared to interim 2023.

Table 3.11 CAPEs: *'s U.S. production, subject imports, and ratio of subject imports to production, by source and period**

Quantity in metric tons; ratios in percent; interim period is January to September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. production	Quantity	***	***	***	***	***
Imports from China	Quantity	***	***	***	***	***
Imports from China to U.S. production	Ratio	***	***	***	***	***

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

[7] ***'s import quantities decreased from 2022 to 2023 but because production levels dropped in 2023, the company's import to production ratio increased in 2023.

Table 3.12 CAPEs: *'s U.S. production, subject imports, and ratio of subject imports to production, by source and period**

Quantity in metric tons; ratios in percent; interim period is January to September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. production	Quantity	***	***	***	***	***
Imports from China	Quantity	***	***	***	***	***
Imports from China to U.S. production	Ratio	***	***	***	***	***

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

Table 3.13 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

U.S. producers' purchases of imports from subject sources are presented in table 3.14 and reasons for purchasing CAPEs in table 3.15. U.S. producer *** reported purchasing *** and *** metric tons in 2022 and 2023, respectively, of imports from China from U.S. importer ***.[8] In 2023, U.S. producer ***'s purchases accounted for *** percent of ***'s imports. In 2023, the ratio of ***'s imports to overall U.S. imports from China was

[8] ***. See table 3.15 for more information. ***. Conference transcript, p. 22 (Laufer).

*** percent and the ratio of ***'s imports from China were equivalent to *** percent of ***'s U.S. production of CAPEs, by quantity.

Table 3.14 CAPEs: *'s purchases of imports from China, importer of record and select items, by item and period**

Quantity in metric tons; ratios in percent; interim period is January to September

Item	2021	2022	2023	Interim 2023	Interim 2024
***'s U.S. production	***	***	***	***	***
***'s purchases of imports from China imported by ***	***	***	***	***	***
***'s imports from China	***	***	***	***	***
Ratio of *** purchases to *** imports	***	***	***	***	***
Overall U.S. imports from China	***	***	***	***	***
Ratio of ***'s imports to overall U.S. imports from China	***	***	***	***	***
Ratio of ***'s imports from China to ***'s U.S. production	***	***	***	***	***

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

Table 3.15 CAPEs: U.S. producers' reasons for purchasing subject imports

Item	Narrative response on reasons for purchasing subject imports
***'s reason for purchasing	***

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

U.S. employment, wages, and productivity

Table 3.16 shows U.S. producers' employment-related data. [9] From 2021 to 2023, 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 from 2021 to 2023.[10] While the number of PRWs, total hours worked, and hours worked per PRW were the same in interim 2024 as in interim 2023, wages paid, hourly wages, and unit labor costs were higher in interim 2024 than in interim 2023, but productivity was lower in interim 2024, compared to interim 2023.

Table 3.16 CAPEs: U.S. producers' employment related information, by item and period

Item	2021	2022	2023	Interim 2023	Interim 2024
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 1,000 hours)	***	***	***	***	***
Unit labor costs (dollars per metric ton)	***	***	***	***	***

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

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

[10] Unit labor costs increased *** percent from 2021 to 2023 and were *** percent higher in interim 2024 than in interim 2023. During testimony, ICL provided the following explanation for the increasing unit labor costs, "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 4: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 98 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 23 companies,[2] representing a large majority of U.S. imports from China in 2023 under HTS subheading 2919.90.50, a "basket" category.[3] Table 4.1 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 petition; staff research; and proprietary, Census-edited Customs' import records.

[2] Nineteen firms, (***) provided certified responses to the Commission that they did not import CAPEs during the period of data collection. *** provided a certified response to the preliminary phase of these investigations that they did not import CAPEs during the period of data collection.

[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 one of the largest importers identified by the petitioner (***), but despite several emails, phone calls, and reminders from both investigator and counsel, this firm did not provide questionnaire responses to the Commission. See correspondence with ***, February 14, 2025.

Table 4.1 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
Aimtop	Stafford, TX	***	***	***
BASF	Florham Park, NJ	***	***	***
Cellular Technology	Kennesaw, GA	***	***	***
Dow	Midland, MI	***	***	***
Eastman	Kingsport, TN	***	***	***
FCI	Rochelle Park, NJ	***	***	***
Fufu	Wilmington, NC	***	***	***
ICL	St. Louis, MO	***	***	***
Icool	Hartselle, AL	***	***	***
JCI	Houston, TX	***	***	***
Johns Manville	Denver, CO	***	***	***
Lanxess	Pittsburgh, PA	***	***	***
M Chemical	Los Angeles, CA	***	***	***
Netchem	Brantford, ON	***	***	***
Palmer Holland	Westlake, OH	***	***	***
Pur Polymerics	Cambridge (Canada), ON	***	***	***
Purinova	Chicago, IL	***	***	***
Rhino	San Diego, CA	***	***	***
Shekoy	Atlanta, GA	***	***	***
Sigma-Aldrich	St. Louis, MO	***	***	***
St. Louis Group	Indianapolis, IN	***	***	***
Wansheng	Houston, TX	***	***	***
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

Table 4.2 presents data for U.S. imports of CAPEs from China and all other sources. Subject imports consisted of the vast majority of imports during 2021 to 2023 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 to 2023 and was higher by *** percent in interim 2024 than in interim 2023. The increase in U.S. imports from subject sources was accounted for mainly by *** between 2021 and 2023.[5] The value of subject

[5] Of the 23 firms that reported imports of CAPEs from subject sources in 2023, (***) accounted for *** of those imports by quantity.

imports decreased by *** percent during 2021 to 2023 and was higher by *** percent in interim 2024 than in interim 2023. The average unit value of subject imports decreased by *** percent during 2021 to 2023 and was lower by *** percent in interim 2024 than in interim 2023. The ratio of subject imports to U.S. production significantly increased from *** percent in 2021 to *** percent in 2023 and was higher by *** percentage points in interim 2024 than in interim 2023.

During 2022 to 2023, nonsubject imports of CAPEs to the United States decreased by *** percent by quantity, and was higher by *** percent in interim 2024 than in interim 2023. The value of nonsubject imports decreased by *** percent and was lower by *** percent in interim 2024 than in interim 2023. *** accounted for all nonsubject imports.[6] The average unit value for CAPEs imports from nonsubject sources decreased by *** percent from 2021 to 2023 and was higher by *** percent in interim 2024 than in interim 2023. The ratio of nonsubject imports to U.S. production increased from *** percent in 2021 to *** percent in 2023 and was higher by *** percentage points in interim 2024 than in interim 2023.[7]

[6] *** reported importing from Poland and Southeast Asia and *** reported importing from Germany during 2021 to 2023. ***'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 to 2023 was Germany, followed by India and Switzerland.

Table 4.2 CAPEs: U.S. imports by source and period

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton; shares and ratio in percent; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	100.0	100.0	100.0	100.0	100.0
China	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
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 January 24, 2025, adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050, accessed February 11, 2025, and data from Commission questionnaires. Data are based on the imports for consumption data series, and value data reflect landed, duty-paid values.

Note: Share of quantity is the share of U.S. imports by quantity; share of value is the share of U.S. imports by value; ratio are U.S. imports to production.

Figure 4.1 CAPEs: U.S. import quantities and average unit values, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050, accessed January 24, 2025. Official statistics were adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050 for firms that certified they do not import CAPEs, accessed February 11, 2025, as well as using data submitted in response to Commission questionnaires to add in imports of CAPEs entered in under other HTS numbers and to remove imports of out-of-scope products imported under the primary HTS numbers. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Table 4.3 presents data for U.S. producers' and/or their affiliates, by source and period. Additional information for U.S. imports by source and period are presented in Part 3 of this report.

Table 4.3 CAPEs U.S. producers' and/or their affiliates' U.S. imports, by source and period

Quantity in metric tons; share in percent

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***

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

Negligibility

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

Imports from China accounted for *** percent of total imports of CAPEs by quantity during May 2023 through April 2024.

Table 4.4 CAPEs: U.S. imports in the twelve-month period preceding the filing of the petition, May 2023 through April 2024

Quantity in metric tons; share in percent

Source of imports	Quantity	Share of quantity
China	***	***
Nonsubject sources	***	***
All import sources	56,572	100.0

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2919.90.5050, accessed January 24, 2025. Imports are based on the imports for consumption data series. Nonsubject adjusted official statistics remove questionnaire responses on out-of-scope imports and certified "No" questionnaire responses.

Table E.2 of appendix E presents U.S. importers' U.S. shipments of imports from China, by product type and year. Figure 4.2 presents U.S. importers' U.S. shipments of CAPEs imports from China by product type during 2023. TCPP accounted for the largest share of U.S. importers' U.S. shipments every year, with *** percent in 2021 and *** percent in 2023 and was higher by *** percentage points in interim 2024 than in interim 2023. TEP's share of quantity decreased slightly from *** percent in 2021 to *** percent in 2024 and was lower by

[8] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

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

*** percentage points in interim 2024 than in interim 2023. TDCP's share of quantity increased slightly from *** percent in 2021 to *** percent in 2023 and was lower by *** percentage points in interim 2024 than in interim 2023. However, TCPP shipments of TCPP were at much higher volumes, accounting for a large majority of overall U.S. shipments of reporting U.S. producers and U.S. importers from 2021 to interim 2024.[10]

U.S. importers' U.S. shipments of TCPP, TDCP and TEP had similar trends by unit value from 2021 to 2023. TCPP consistently had the lowest unit value, decreasing by *** percent from 2021 to 2023 and was lower by *** percent in interim 2024 than in interim 2023. From 2021 to 2023, the unit value of TDCP ultimately decreased by *** percent from 2021 to 2023 and was lower by *** percent in interim 2024 than in interim 2023. The unit value of TEP decreased by *** percent during the same period and was lower by *** percent in interim 2024 than in interim 2023.[11]

[10] A summary of these data is presented in appendix E, tables E.2 through E.5 of this report.

[11] Data from responses to the preliminary phase of these investigations showed that TEP had the second lowest unit values and TDCP had the highest unit values. These data represent responses to the Commission's questionnaires in the final phase of these investigations.

Figure 4.2 CAPEs: Share of U.S. importers' U.S. shipments of imports from China in 2023, by product type

* * * * * * *

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

Note: Data presented in this figure are detailed in appendix E, table E.2.

Table E.3 of appendix E presents U.S. importers' U.S. shipments of imports from nonsubject sources, by product type and year. Figure 4.3 presents the share of U.S. importers shipments of imports from nonsubject countries in 2023, by product type. TCPP accounted for *** percent of imports from nonsubject countries in 2023. Quantity of TCPP decreased by *** percent from 2022 to 2023 and was lower by *** percent in interim 2024 than in interim 2023. Unit value of TCPP decreased by *** percent from 2022 to 2023 and was higher by *** percent in interim 2024 than in interim 2023.

Figure 4.3 CAPEs: Share of U.S. importers' U.S. shipments of imports from nonsubject sources in 2023, by product type

* * * * * * *

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

Note: Data presented in this figure are detailed in appendix E, table E.3.

Apparent U.S. consumption and market shares

Quantity

Table 4.5 and figure 4.4 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 and was higher by *** percent in interim 2024 than in interim 2023. The share of quantity held by U.S. producers decreased by *** percentage points from 2021 to 2023 and was lower by *** percentage points in interim 2024 than in interim 2023.

The share of quantity held by subject imports increased by *** percentage points from 2021 to 2023 and was higher by *** percentage points in interim 2024 than in interim 2023. The share of quantity held by nonsubject imports increased slightly by *** percentage points from 2021 to 2023 and was lower by *** percentage points in interim 2024 than in interim 2023.

Table 4.5 CAPEs: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in metric tons; shares in percent; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	100.0	100.0

Source: Compiled from 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 January 24, 2025, adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050, accessed February 11, 2025, and data from Commission questionnaires. Data are based on the imports for consumption data series.

Figure 4.4 CAPEs: Apparent U.S. consumption based on quantity, by source and period

* * * * * * *

Source: Compiled from 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 January 24, 2025, adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050, accessed February 11, 2025, and data from Commission questionnaires. Data are based on the imports for consumption data series.

Value

Table 4.6 and figure 4.5 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.[12]

[12] Data from responses to the final phase of Commission questionnaires showed that U.S. producers' share of apparent U.S. consumption decreased more significantly than previously identified in the preliminary phase of these investigations.

Table 4.6 CAPEs: Apparent U.S. consumption and market shares based on value, by source and period

Value in 1,000 dollars; shares in percent; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	100.0	100.0

Source: Compiled from 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 January 24, 2025, adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050, accessed February 11, 2025, and data from Commission questionnaires. Data are based on the imports for consumption data series, and value data reflect landed, duty-paid values.

Figure 4.5 CAPEs: Apparent U.S. consumption based on value, by source and period

* * * * * * *

Source: Compiled from 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 January 24, 2025, adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050, accessed February 11, 2025, and data from Commission questionnaires. Data are based on the imports for consumption data series, and value data reflect landed, duty-paid values.

Table 4.7 presents data on U.S. market for TCPP by source and period. U.S. producers' market share for TCPP declined *** percentage points during 2021 to 2023, decreasing from *** percent in 2021 to *** percent in 2023. U.S. producers' U.S. shipments of TCPP accounted for *** percent of apparent consumption quantity in 2023. Market share of subject U.S. importers' U.S. shipments of TCPP increased by *** percentage points during 2021 to 2023 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 were not present in 2021 and decreased by *** percentage points during 2022 to 2023 and accounted for *** percent of the TCPP market in 2023. Nonsubject sources accounted for *** percent of apparent consumption in 2023.

Table 4.7 TCPP: U.S. producers' and U.S. importers' U.S. shipments of TCPP, by source and period

Quantity in metric tons; shares in percent; Ratio represents the ratio to apparent U.S. consumption; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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 apparent consumption quantity as presented in table 4.4.

Table 4.8 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 to 2023, decreasing from *** percent of the market in 2021 to *** percent in 2023. U.S. producers' U.S. shipments of TDCP accounted for *** percent of apparent consumption quantity in 2023. The market share of subject U.S. importers' U.S. shipments of TDCP increased by *** percentage points during 2021 to 2023 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 to 2023.

Table 4.8 TDCP: U.S. producers' and U.S. importers' U.S. shipments of TDCP, by source and period

Quantity in metric tons; shares in percent; Ratio represents the ratio to apparent U.S. consumption; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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 apparent consumption quantity as presented in table 4.4.

Table 4.9 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 to 2023. Subject sources of TEP accounted for *** percent of apparent consumption in 2023.

Table 4.9 TEP: U.S. producers' and U.S. importers' U.S. shipments of TEP, by source and period

Quantity in metric tons; shares in percent; Ratio represents the ratio to apparent U.S. consumption; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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 apparent consumption quantity as presented in table 4.5.

Part 5: 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 5.1 and table 5.1. Propylene oxide costs fluctuated with an overall increase of *** percent between January 2021 and December 2023 (*** percent over January 2021 to September 2024). Chlorine costs more than quadrupled from 2021 to 2022, and then decreased slightly in 2023 and 2024, with an overall increase of *** percent over January 2021 to December 2023 (*** percent over January 2021 to September 2024).

Figure 5.1 CAPEs: Raw material costs: Chlorine and propylene oxide, by month and raw material

* * * * * * *

Source: Average prices, ***.

Table 5.1 CAPEs: Raw material costs: Chlorine and propylene oxide, by month and raw material

Dollars per metric ton

Year	Month	Chlorine costs	Propylene oxide costs
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	***	***
2024	June	***	***
2024	July	***	***
2024	August	***	***
2024	September	***	***

Source: Average prices, ***.

ICL stated that China has 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 reported raw material costs increased. Importers were split: three importers indicated that CAPE's raw materials costs had increased steadily, four importers indicated that such costs had fluctuated up, four indicated that costs were unchanged, six that such costs had fluctuated down, and two that such costs had decreased steadily. Importer *** 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.

Transportation costs to the U.S. market

Transportation costs for CAPEs shipped from subject countries to the United States averaged 10.6 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

*** U.S. producer and most importers (15 of 17 firms) reported that they typically arrange transportation to their customers. U.S. producers reported that their U.S. inland transportation costs ranged from *** percent while most importers reported costs of 1 to 13 percent.

Pricing practices

Pricing methods

*** U.S. producers reported setting prices using transaction-by-transaction negotiations ***.

[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.

Most importers reported transaction-by-transaction negotiations, but some also reported contracts, set price lists, or monthly contracts (table 5.2).

Table 5.2 CAPEs: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	16
Contract	***	6
Set price list	***	2
Other	***	2
Responding firms	2	19

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 reported selling the majority (***) percent of their U.S. commercial shipments of CAPEs as spot sales,[4] with approximately *** percent of U.S. commercial shipments sold as annual contracts (table 5.3). Subject U.S. importers sold a majority as short-term contracts (72.8 percent) with most of the remaining share (26.4 percent) as spot sales. Less than one percent of U.S. commercial shipments were sold under long-term or annual contracts. However, importer *** offered long-term contracts with durations of two years.

Table 5.3 CAPEs: U.S. producers' and subject U.S. importers' shares of commercial U.S. shipments by type of sale, 2023

Share in percent

Sale type	U.S. producers	Subject U.S. importers
Long-term contracts	***	0.3
Annual contract	***	0.6
Short-term contracts	***	72.8
Spot sales	***	26.4
All sales types	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 "—".

Eleven purchasers reported that they purchase product on a weekly basis, six purchase on a monthly basis, two purchase on a quarterly basis, and two purchase as needed. Thirteen of 21 responding purchasers reported that their purchasing frequency had not changed since 2021. Most (16 of 21) purchasers contact 1 to 5 suppliers before making a purchase.[5]

[4] U.S. producer ***.

[5] The remaining purchasers reported contacting up to 20 different suppliers.

Six importers reported offering short-term contracts ranging between 30 to 90 days. Four importers indicated that their short-term contracts did not allow price renegotiation, fixed price and quantity, and were not indexed to raw materials. Three importers indicated that their annual contracts allowed price renegotiation and fixed prices. Four of six responding importers reported that annual contracts were not indexed to raw materials. Importer *** elaborated that it indexed contracts to ocean shipping costs and raw materials, while importer *** indexed to ICIS propylene oxide costs in China. Nine importers reported that raw material costs affected their negotiations or contracts to purchase CAPEs. Purchaser *** reported that prices generally fluctuated downward consistent with raw material cost indices. Purchasers *** reported that when the costs of feedstocks track up, price increases are generally accepted; and when the costs of feedstocks track down, they look to gain price concessions.

Sales terms and discounts

*** U.S. producers and most (14 of 21) importers typically quote prices on a delivered basis. *** quoted prices on both an f.o.b. and delivered basis depending on their customer. Five importers reported quoting prices on an f.o.b. basis, including one importer that also reported quoting prices on a delivered basis. *** and 15 importers did not offer discounts. *** offered quantity discounts and annual total volume discounts, as well as "responding," but "not necessarily matching," competitive pricing. Three importers (including ***) offered various discounts, including volume discounts, timely payment discounts, and "customer specific and transaction specific policies based on price and volume."

Price leadership

Fourteen of 21 purchasers reported that there were price leaders in the CAPEs market. Eight reported that ICL was a leader, four reported that Wansheng (China) was a price leader, three reported that Lanxess was a price leader, and one reported that Eastman was a price leader. Purchasers *** indicated that ICL led significant price increases in 2021 and 2022. Purchaser *** reported that ICL maintained the highest market price for TDCP, and it recently offered pricing just under the market price.

Price and purchase cost data

The Commission requested that U.S. producers and importers 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 to September 2024. Firms that imported these products from China for their own use were requested to provide import purchase cost data.

***Product 1*. —**Tris (2-chloroisopropyl) phosphate (TCPP), bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

***Product 2*.—**Tris (1,3-dichloroisopropyl) phosphate (TDCP), whether or not stabilized, bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

Price data

*** U.S. producers and 11 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[6] Pricing data reported *** U.S. producers' U.S. shipments of CAPEs, and *** percent of imports from China in 2023.[7] Price data for products 1 and 2 are presented in tables 5.4 to 5.5 and figures 5.2 to 5.3.

[6] 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.

[7] Pricing coverage is based on imports reported in questionnaires.

Table 5.4 CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, and margins of underselling/(overselling), by source and quarter

Quantity in metric tons; prices in dollars per metric ton; margins in percent

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***

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 “— “.

Note: Product 1: Tris (2-chloroisopropyl) phosphate (TCPP), bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

Figure 5.2 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 300 kg capacity.

Table 5.5 CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, and margins of underselling/(overselling), by source and quarter

Quantity in metric tons; Prices in dollars per metric ton; Margins in percent

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***

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 “—“.

Note: Product 2: Tris (1,3-dichloroisopropyl) phosphate (TDCP), whether or not stabilized, bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

Note: Importer *** reported that there was a severe drought in the summer of 2021 in China, which drove up the cost of one of the key raw materials, phosphorus. Then in September 2021, the provincial government ordered a shutdown of about 36 percent of the production of this raw material. This led to a severe, sudden shortage of TCPP (product 2) and TEP in China and resulting high prices during Q4 2021 and lasted until Q1 2022. Once phosphorous production resumed in early 2022, the TCPP and TEP prices returned to normal levels.

Figure 5.3 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), whether or not stabilized, bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

Import purchase cost data

Four importers reported useable import purchase cost data for products 1 and 2. Purchase cost data reported by these firms accounted for *** percent of imports from China in 2023. Landed duty-paid purchase cost data for imports from China are presented along with U.S. producers' sales prices in tables 5.6 to 5.7, and figures 5.4 to 5.5.[8]

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of importing CAPEs themselves.

Three of four importers reported that they incurred additional costs beyond landed duty-paid costs by importing CAPEs themselves rather than purchasing from a U.S. producer or U.S. importer. Of these, none of the importers estimated the total additional cost incurred. Firms were also asked to identify specific additional costs they incurred as a result of importing CAPEs. Reported costs include warehouse costs to accomplish just-in-time delivery to compete with U.S. suppliers, interest costs due to financing programs, and inventory carrying costs.

Firms were also asked to describe how these additional costs incurred by importing CAPEs themselves compares with additional costs incurred when purchasing from a U.S. producer or U.S. importer. Importer *** reported that costs vary depending on availability, lead times, freight costs and interest rates.

All four importers reported that they compare costs of importing to the cost of purchasing from a U.S. producer in determining whether to import CAPEs, all four importers also compare costs to purchasing from a U.S. importer.

Three importers identified benefits from importing CAPEs themselves instead of purchasing from U.S. producers or importers, including supply chain resiliency, redundancy of supply, and competitive pricing. Two importers reported that U.S. producers do not always have availability when needed. Importer *** reported that U.S. producers also may not want to sell to it because it competes with them for certain products. Importer *** reported that U.S. producers are less interested in low volume customers and so it is forced to buy from higher priced distributors.

Firms were also asked whether the import cost (both excluding and including additional costs) of CAPEs they imported are lower than the price of purchasing CAPEs from a U.S. producer or importer.

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

One importer estimated that they saved 5 percent of the purchase price by importing CAPEs rather than purchasing from a U.S. importer, and two importers reported saving between 15 and 50 percent compared to purchasing the product from a U.S. producer.[9]

Table 5.6 CAPEs: Weighted-average f.o.b. prices and quantities of domestic and average unit LDP values and quantities of imported product 1, and price/cost differentials, by source and quarter

Quantity in metric tons; prices and unit LDP values in dollars per metric ton; price/cost differentials in percent

Period	U.S. price	U.S. quantity	China cost	China quantity	China differential
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***

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 300 kg capacity.

[9] Two firms reported that they based their estimates on previous company transactions, one reported basing their estimates on market research, and two also reported other bases for their estimates, including directly requesting a quote, and buying spot volumes from a U.S. importer or distributor of domestically produced CAPEs.

Figure 5.4 CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

U.S. price and import purchase cost 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 300 kg capacity.

Table 5.7 CAPEs: Weighted-average f.o.b. prices and quantities of domestic and average unit LDP values and quantities of imported product 2, and price/cost differentials, by source and quarter

Quantity in metric tons; prices and unit LDP values in dollars per metric ton; price/cost differentials in percent

Period	U.S. price	U.S. quantity	China costs	China quantity	China differential
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***

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

Note: Product 2: Tris (1,3-dichloroisopropyl) phosphate (TDCP), whether or not stabilized, bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

Figure 5.5 CAPEs: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

U.S. price and import purchase cost 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), whether or not stabilized, bulk liquid, in drums, tanks or other bulk containers greater than 300 kg capacity.

Price and purchase cost trends

Table 5.8 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** to *** percent during January 2021 to September 2024, while import price decreases ranged from *** to *** percent. Landed duty-paid cost changes ranged from a decrease of *** percent for product 1 to an increase of *** percent for product 2. Tables 5.9 to 5.11 and figures 5.6 to 5.8 show indexed prices and purchase cost data to more easily compare changes in the period of investigation.

Importer *** reported that there was a severe drought in the summer of 2021 in China, which drove up the cost of one of the key raw materials, phosphorus. Then in September 2021, the provincial government ordered a shutdown of about 36 percent of the production of this raw material. This led to a severe, sudden shortage of TCPP (product 2) and TEP in China and resulted in high prices during Q4 2021 and lasted until Q1 2022. Once phosphorous production resumed in early 2022, the TCPP and TEP prices returned to normal levels.

Table 5.8 CAPEs: Summary of price data, by product and source, January 2021 through September 2024

Prices and unit LDP values in dollars per metric ton; Quantity in metric tons; Change in percent

Product	Source and type	Number of quarters	Quantity	Low price or unit LDPV	High price or unit LDPV	First quarter price or unit LDPV	Last quarter price or unit LDPV	Change over period
Product 1	United States price	15	***	***	***	***	***	***
Product 1	China price	15	***	***	***	***	***	***
Product 1	China costs	15	***	***	***	***	***	***
Product 2	United States price	15	***	***	***	***	***	***
Product 2	China price	15	***	***	***	***	***	***
Product 2	China costs	15	***	***	***	***	***	***

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

Note: Percentage change from the first quarter in which data were available in 2021 to the last quarter in which data were available in 2024.

Table 5.9 CAPEs: Indexed U.S. producer prices, by quarter

Period	Product 1	Product 2
2021 Q1	100.0	100.0
2021 Q2	***	***
2021 Q3	***	***
2021 Q4	***	***
2022 Q1	***	***
2022 Q2	***	***
2022 Q3	***	***
2022 Q4	***	***
2023 Q1	***	***
2023 Q2	***	***
2023 Q3	***	***
2023 Q4	***	***
2024 Q1	***	***
2024 Q2	***	***
2024 Q3	***	***

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

Table 5.10 CAPEs: Indexed subject U.S. importer prices, by quarter

Period	Product 1	Product 2
2021 Q1	100.0	100.0
2021 Q2	***	***
2021 Q3	***	***
2021 Q4	***	***
2022 Q1	***	***
2022 Q2	***	***
2022 Q3	***	***
2022 Q4	***	***
2023 Q1	***	***
2023 Q2	***	***
2023 Q3	***	***
2023 Q4	***	***
2024 Q1	***	***
2024 Q2	***	***
2024 Q3	***	***

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

Figure 5.6 CAPEs: Indexed U.S. producers and importer prices, by quarter

* * * * * * *

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

Table 5.11 CAPEs: Indexed subject U.S. importer purchase costs, by quarter

Period	Product 1	Product 2
2021 Q1	100.0	100.0
2021 Q2	***	***
2021 Q3	***	***
2021 Q4	***	***
2022 Q1	***	***
2022 Q2	***	***
2022 Q3	***	***
2022 Q4	***	***
2023 Q1	***	***
2023 Q2	***	***
2023 Q3	***	***
2023 Q4	***	***
2024 Q1	***	***
2024 Q2	***	***
2024 Q3	***	***

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

Figure 5.7 CAPEs: Indexed subject U.S. importer purchase costs, by quarter

* * * * * * *

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

Price and purchase cost comparisons

Price comparisons

As shown in tables 5.12 and 5.13, prices for product imported from China were below those for U.S.-produced product in 23 of 30 instances (*** metric tons); margins of underselling ranged from *** percent to *** percent. In the remaining seven instances (*** metric tons), prices for product from China were between *** percent and *** percent above prices for the domestic product.

Table 5.12 CAPEs: Instances and quantities of underselling/overselling and the range and average of margins, by product

Quantity in metric tons; margin in percent

Products	Type	Number of instances	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	11	***	***	***	***
Product 2	Underselling	12	***	***	***	***
All products	Underselling	23	***	***	***	***
Product 1	Overselling	4	***	***	***	***
Product 2	Overselling	3	***	***	***	***
All products	Overselling	7	***	***	***	***

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.

Table 5.13 CAPEs: Instances and quantities of underselling/overselling and the range and average of margins, by period

Quantity in metric tons; margin in percent

Period	Type	Number of instances	Quantity	Average margin	Min margin	Max margin
2021	Underselling	2	***	***	***	***
2022	Underselling	7	***	***	***	***
2023	Underselling	8	***	***	***	***
January through September 2024	Underselling	6	***	***	***	***
All periods	Underselling	23	***	***	***	***
2021	Overselling	6	***	***	***	***
2022	Overselling	1	***	***	***	***
2023	Overselling	—	***	***	***	***
January through September 2024	Overselling	—	***	***	***	***
All periods	Overselling	7	***	***	***	***

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. 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 "—".

Purchase cost comparisons

As shown in tables 5.14 and 5.15, landed duty-paid costs for CAPEs imported from China were below the sales price for U.S.-produced product in 23 of 30 instances (*** metric tons); price-cost differentials ranged from *** to *** percent. In the remaining seven instances (*** metric tons), landed duty-paid costs for CAPEs from China were between *** and *** percent above sales prices for the domestic product.

Table 5.14 CAPEs: Instances and quantities of lower/(higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product

Quantity in metric tons; price-cost differential in percent

Products	Type	Number of instances	Quantity	Average differential	Min differential	Max differential
Product 1	Lower than US	13	***	***	***	***
Product 2	Lower than US	10	***	***	***	***
All products	Lower than US	23	***	***	***	***
Product 1	Higher than US	2	***	***	***	***
Product 2	Higher than US	5	***	***	***	***
All products	Higher than US	7	***	***	***	***

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.

Table 5.15 CAPEs: Instances and quantities of lower/(higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by period

Quantity in metric tons; price-cost differential in percent

Period	Type	Number of instances	Quantity	Average differential	Min differential	Max differential
2021	Lower than US	3	***	***	***	***
2022	Lower than US	8	***	***	***	***
2023	Lower than US	8	***	***	***	***
January through September 2024	Lower than US	4	***	***	***	***
All periods	Lower than US	23	***	***	***	***
2021	Higher than US	5	***	***	***	***
2022	Higher than US	—	***	***	***	***
2023	Higher than US	—	***	***	***	***
January through September 2024	Higher than US	2	***	***	***	***
All periods	Higher than US	7	***	***	***	***

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

In the preliminary phase of the investigations, the Commission requested that U.S. producers of CAPEs report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of CAPEs from China during January 2021 to May 2024. Of the two responding U.S. producers, *** submitted lost sales and lost revenue allegations. The responding U.S. producers identified 29 firms with which they lost sales or

revenue, 12 of which were lost sales and 17 of which were both lost sales and lost revenue allegations.

In the final phase of the investigations, of the two responding U.S. producers, *** reported that *** had to reduce prices, roll back announced price increases, and lost sales.

Staff contacted 50 purchasers and received responses from 21 purchasers. Responding purchasers reported purchasing *** metric tons of domestically CAPEs and *** metric tons of imported CAPEs from China during January 2021 to September 2024.

Of the 21 responding purchasers, 19 reported that, since 2021, they had purchased imported CAPEs from China instead of U.S.-produced product and 15 reported that Chinese import prices were lower than U.S.-produced product (table 5.17).[10] Six of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Six purchasers estimated the quantity of CAPEs from China purchased instead of domestic product due to price; quantities ranged from *** metric tons to *** metric tons. Two purchasers reported purchasing Chinese product instead of U.S. product principally due to non-price reasons such as availability or as a "risk mitigation measure;" estimated quantities ranged from *** metric tons to *** metric tons.

Of the 14 responding purchasers, four reported that U.S. producers had reduced prices in order to compete with lower-priced imports from China. Ten reported that U.S. producers had not reduced prices to compete with lower-priced imports from China, and seven reported that they did not know (table 5.18). The reported estimated price reduction ranged from *** to *** percent. In describing the price reductions, purchaser *** stated that domestic producers sometimes reduced prices by a small amount when "pressured for uncompetiveness." However, it continued that domestic producers were able to keep higher prices compared to Chinese imports and still sell their entire stock because domestic producers do not produce enough volume to cover the U.S. demand for TCPP. It added that buyers would pay more for domestic TCPP just to keep domestic suppliers "in the mix."

[10] ***.

Table 5.16 CAPEs: Purchasers' reported purchases and imports, by firm and source

Quantity in metric tons, share in percent

Firm	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Change in subject 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 5.17 CAPEs: Purchasers’ responses to purchasing subject imports instead of domestic product, by firm

Quantity in metric tons

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--19; No--2	Yes--15; No--4	Yes--6; No--3	***	NA

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

Note: Narrative responses are taken verbatim

Table 5.18 CAPEs: U.S. purchasers' responses to U.S. producer price reductions, by firm

Quantity in metric tons

Firm	Producers lowered prices	Price reduction	Narrative on producer price reductions
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
All firms	Yes--4; No--10	***	NA

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

Note: Narrative responses are taken verbatim

Part 6: 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 on a calendar year basis. Both companies' financial results are based on information from accounting systems designed to generate and report overall financial results on the basis of International Financial Reporting Standards ("IFRS").[2]

The industry's net sales are primarily commercial sales, but a ***.[3] *** and is not shown separately in this section of the report. Figure 6.1 presents each firm's share of the aggregate net sales quantity in 2023.

Figure 6.1 CAPEs: U.S. producers' share of net sales quantity in 2023, by firm

* * * * * * *

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

[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] Staff verified the results of ICL with its corporate records and all adjustments were incorporated into this report. ICL's U.S. producer questionnaire response was revised as follows: ***. Staff verification report, ICL, April 14, 2025.

[3] ***. Email from ***.

Operations on CAPEs

Table 6.1 presents aggregated data on U.S. producers' operations in relation to CAPEs, while table 6.2 presents corresponding changes in AUVs. Table 6.3 presents selected company-specific financial data.

Table 6.1 CAPEs: U.S. producers' results of operations, by item and period

Quantity in metric tons; value in 1,000 dollars; ratios in percent; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
COGS: Phosphorus oxychloride	Value	***	***	***	***	***
COGS: Alcohol or epoxide	Value	***	***	***	***	***
COGS: All other raw materials	Value	***	***	***	***	***
COGS: Total 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	***	***	***	***	***
All other expenses/(income), net	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Cash flow	Value	***	***	***	***	***
COGS: Phosphorus oxychloride	Ratio to NS	***	***	***	***	***
COGS: Alcohol or epoxide	Ratio to NS	***	***	***	***	***
COGS: All other raw materials	Ratio to NS	***	***	***	***	***
COGS: Total raw material costs	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 6.1 (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; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
COGS: Raw materials	Share of COGS	***	***	***	***	***
COGS: Direct labor	Share of COGS	***	***	***	***	***
COGS: Other factory	Share of COGS	***	***	***	***	***
COGS: Total	Share of COGS	100.0	100.0	100.0	100.0	100.0
Total net sales	Unit value	***	***	***	***	***
COGS: Phosphorus oxychloride	Unit value	***	***	***	***	***
COGS: Alcohol or epoxide	Unit value	***	***	***	***	***
COGS: All other raw materials	Unit value	***	***	***	***	***
COGS: Total 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	2	2	2	2	2

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

Table 6.2 CAPEs: Changes in AUVs between comparison periods

Changes in percent; interim is January through September

Item	2021–23	2021–22	2022–23	Interim 2023–24
Total net sales	▲***	▲***	▼***	▼***
COGS: Phosphorus oxychloride	▲***	▲***	▲***	▼***
COGS: Alcohol or epoxide	▼***	▼***	▼***	▲***
COGS: All other raw materials	▲***	▲***	▲***	▼***
COGS: Total raw material costs	▲***	▲***	▲***	▼***
COGS: Direct labor	▲***	▲***	▲***	▲***
COGS: Other factory	▲***	▲***	▲***	▲***
COGS: Total	▲***	▲***	▲***	▲***

Table continued.

Table 6.2 (Continued) CAPEs: Changes in AUVs between comparison periods

Changes in dollars per metric ton; interim is January through September

Item	2021–23	2021–22	2022–23	Interim 2023–24
Total net sales	▲***	▲***	▼***	▼***
COGS: Phosphorus oxychloride	▲***	▲***	▲***	▼***
COGS: Alcohol or epoxide	▼***	▼***	▼***	▲***
COGS: All other raw materials	▲***	▲***	▲***	▼***
COGS: Total raw material costs	▲***	▲***	▲***	▼***
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 6.3 CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in metric tons; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales value

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss)

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) CAPEs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per metric ton; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (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; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
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. In interim 2024, net sales were *** percent and *** percent lower by quantity and value, respectively, than in interim 2023. 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 between 2021 and 2023. The net sales AUV was lower in interim 2024, at $*** per metric ton, than in interim 2023, at $*** per metric ton.

As shown in table 6.3, both companies reported decreases in their net sales quantities and values between 2021 and 2023, as well as lower net sales quantities and values in interim 2024 than in interim 2023.[4] Both companies' net sales AUVs increased from 2021 to 2022 and then decreased in 2023, but the companies' overall trends between 2021 and 2023 differed, with ICL experiencing an overall increase in its net sales AUV and Lanxess experiencing an overall decrease. ICL had a net sales AUV that was lower in interim 2024 than in interim 2023, whereas Lanxess had a net sales AUV that was *** higher.

[4] ***.

Cost of goods sold and gross profit or loss

Raw material costs comprised the largest share of total COGS for CAPEs during the period examined, accounting for between a period low of *** percent in interim 2024 and a period high of *** percent in 2021. The industry's total raw material costs decreased from 2021 to 2023 and were lower in interim 2024 than in interim 2023, commensurate with the decrease in net sales volume over the period examined. 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. Raw material cost AUVs were lower in interim 2024, at $*** per metric ton, than in interim 2023, at $*** per metric ton. Both U.S. producers' raw material cost AUVs increased each year from 2021 to 2023 and were lower in interim 2024 than in interim 2023.

Phosphorous oxychloride and alcohol/epoxide were the two primary raw material inputs and together accounted for the large majority of the industry's raw material costs (see table 6.1). Both companies reported ***.[5]

Direct labor was the smallest component of total COGS in each period. It accounted for between a period low of *** percent of total COGS in 2021 and 2022 and a period high of *** percent in interim 2024. Direct labor AUVs increased from $*** per metric ton in 2021 to $*** per metric ton in 2023; they were higher in interim 2024, at $*** per metric ton, than in interim 2023, at $*** per metric ton.[6]

Other factory costs accounted for the second-largest share of COGS during the period examined, accounting for between a low of *** percent in 2021 and a high of *** percent in interim 2024. The noticeable increase in other factory costs as a share of total COGS between 2021 and 2023, and in interim 2024 compared to interim 2023, largely reflects the decrease in net sales volume. Despite the industry's other factory costs decreasing from $*** in 2021 to $*** in 2023, the sharper decrease in the industry's net sales volume during this time resulted in other factory costs increasing on a per-metric ton basis, from $*** in 2021 to $*** in 2023. Similarly, other factory costs were lower in interim 2024 (at $***) than in interim 2023 (at $***), but the decline in the industry's net sales volume resulted in other factory cost AUVs being higher in interim 2024, at $*** per metric ton, than in interim 2023, at $*** per metric ton.

[5] U.S. producer questionnaire responses, section 3.9c.

[6] The *** higher direct labor AUVs in interim 2024 were attributable to both a decrease in net sales quantity and an increase in direct labor costs on an absolute basis.

The industry's total COGS AUV increased from $*** in 2021 to $*** in 2023 and was higher in interim 2024 (at $***) than in interim 2023 (at $***). The ratio of COGS to net sales value decreased from *** percent in 2021, to a period low of *** percent in 2022, and then increased to *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[7] Both companies reported an overall increase in their COGS to net sales value ratios from 2021 to 2023, and higher ratios in interim 2024 than in interim 2023, however ***.

The industry's gross profit increased from $*** in 2021 to a period-high of $*** in 2022 before decreasing to $*** in 2023. It was lower in interim 2024, ***, than in interim 2023, ***. Both companies reported overall decreases in their gross profits between 2021 and 2023 and lower gross profits in interim 2024 than in interim 2023. However, ***.[8]

SG&A expenses and operating income or loss

The industry's SG&A expenses decreased from 2021 to 2023 and were lower in interim 2024 than in interim 2023. The SG&A expense ratio increased irregularly from 2021 to 2023, first decreasing from *** percent in 2021 to *** percent in 2022 and then increasing to *** percent in 2023; it was higher in interim 2024, *** percent, than in interim 2023, *** percent.

The industry's operating income increased from $*** in 2021 to $*** in 2022 and decreased to $*** in 2023; it was *** in interim 2023 and *** in interim 2024.[9] The operating income margin increased from *** percent in 2021 to *** percent in 2022 and then decreased to *** percent in 2023 and was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.

[7] The *** improvement in the COGS to net sales value ratio in 2022 was attributable to the *** larger increase in the industry's net sales AUV that year, relative to the increase in the COGS AUV.

[8] ***.

[9] ***.

All other expenses and net income or loss

Classified below the operating income level are interest expense, other expense, and other income. In table 6.1, these items are aggregated and only the net amount is shown. ***.[10] It reported ***.[11]

The *** amounts of 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; it was $*** in interim 2023 and *** $*** in interim 2024. The net income margin increased from *** percent in 2021 to *** percent in 2022, decreased to *** percent in 2023, and was lower in interim 2024 (*** percent) than in interim 2023 (*** percent).

[10] ***. *** U.S. producer questionnaire response, section 3.8.

[11] *** U.S. producer questionnaire response, section 3.9a. ***.

Variance analysis

A variance analysis for the CAPEs operations of U.S. producers is presented in table 6.4.[12] The information for this analysis is derived from table 6.1. The variance analysis shows that the $*** decrease in operating income from 2021 to 2023 was attributable to unfavorable volume and cost variances of $*** and $***, respectively, 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 were larger than the positive effect of the increase in net sales AUVs). The analysis also shows that the $*** lower operating income in interim 2024 compared with interim 2023 was attributable to unfavorable price, cost, and volume variances of $***, $***, and $***, respectively.

Table 6.4 CAPEs: Variance analysis on the operations of U.S. producers between comparison periods

Value in 1,000 dollars; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
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: Unfavorable variances are shown in parentheses, all others are favorable (positive).

[12] The Commission's variance analysis is calculated in three parts: Net sales variance, COGS variance, and SG&A expense variance. Each part consists of a price variance (in the case of the net 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 variances are calculated as the change in unit price or per-unit cost/expense, respectively, 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 operating income price variance is from sales; the operating income cost/expense variance is the sum of the cost components in the COGS and SG&A expense variances, and the operating income volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances.

Capital expenditures and research and development expenses

Table 6.5 presents capital expenditures, by firm, and table 6.7 presents R&D expenses, by firm. Tables 6.6 and 6.8 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 and were higher in interim 2024 than in interim 2023. R&D expenses, the ***, decreased overall between 2021 and 2023 and were lower in interim 2024 than in interim 2023.

Table 6.5 CAPEs: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

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

Table 6.6 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 6.7 CAPEs: U.S. producers' R&D expenses, by firm and period

Value in 1,000 dollars; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
ICL	***	***	***	***	***
Lanxess	***	***	***	***	***
All firms	***	***	***	***	***

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

Table 6.8 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 6.9 presents data on the U.S. producers' total assets while table 6.10 presents their operating ROA.[13] Table 6.11 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 6.9 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 6.10 CAPEs: U.S. producers' 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 6.11 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.

[13] 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 6.12 presents the number of firms reporting an impact in each category and table 6.13 provides the U.S. producers' narrative responses.

Table 6.12 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 6.13 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 7: Threat considerations and information on nonsubject countries

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

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

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

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

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

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

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

Information on the nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts 4 and 5; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part 6. 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 67 firms believed to produce and/or export CAPEs from China.[3] Usable responses to the Commission's questionnaire were received from six firms: Hebei Zhenxing Chemical and Rubber ("Hebei"), Shanghai Chenhua International Trade ("Shanghai Chenhua"), Shanghai Yongxiangshun Int'l Trade ("Yongxiangshun"), Jiangsu Victory Chemical ("Jiangsu"), Xinji Hongzheng Chemical ("Xinji"), and Anhui RunYue Technology ("Anhui RunYue").

Table 7.1 presents the number of producers/exporters in China that responded to the Commission's questionnaire, their exports to the United States as a share of U.S. imports by China in 2023, and their estimated share of total production of CAPEs in China during 2023. Table 7.2 presents information on the CAPEs operations of the responding producers and exporters in China.[4]

Table 7.1 CAPEs: Number of responding producers/exporters in China, approximate share of production, and exports to the United States as a share of U.S. imports, 2023

Subject foreign industry	Number of responding firms	Approximate share of production (percent)	Exports as a share of U.S. imports from subject country (percent)
China	6	***	***

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

Note: "Approximate share of production" reflects the responding firms' estimates of their production as a share of total China production of CAPEs in 2023. Since not all firms have perfect knowledge of the industry in their home market, different firms might use different denominators in estimating their firm's share of the total requested. Approximate shares are rounded to the nearest whole number.

Note: "Exports as a share of U.S. imports" reflects a comparison of export data reported by firms in response to the Commission's foreign producer/exporter questionnaire with official Commerce import statistics using HTS statistical reporting number 2919.90.5050, accessed January 27, 2025, adjusted to remove merchandise certified as out-of-scope in response to Commission questionnaires using proprietary, Census-edited Customs import records.

Table 7.2 presents information on CAPEs operations of the responding producers and exporters in China.

[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, ***.

Table 7.2 CAPEs: Summary data for producers in China in 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 RunYue	***	***	***	***	***	***
Shanghai Chenhua	***	***	***	***	***	***
Hebei	***	***	***	***	***	***
Xinji	***	***	***	***	***	***
Yongxiangshun	***	***	***	***	***	***
All individual producers	***	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 "— ".

Table 7.3 CAPEs: Summary data for subject resellers in 2023, by firm

Subject reseller name	Resales exported to the United States (units)	Share of resales exported to the United States (percent)
Jiangsu	***	***
Yongxiangshun	***	***
All individual firms	***	100.0

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

Two firms in China, *** reported production curtailments in ***. One firm, ***, reported a move to a new production site in ***.[5]

[5] 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. Three of six producers indicated in their questionnaires that they had experienced such changes. Table 7.4 presents the changes identified by these producers.

Table 7.4 CAPEs: Reported changes in operations in China since January 1, 2021, by firm

Item	Firm: narrative response regarding changes in operations
Production curtailments	***
Production curtailments	***
Relocations	***

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

Installed and practical overall capacity

Table 7.5 presents data on Chinese producers' installed capacity, practical overall capacity, and practical CAPEs capacity and production on the same equipment in China. Chinese producers installed overall capacity declined by *** percent and practical overall capacity declined by *** percent during 2021 to 2023 and was unchanged between interim 2023 and interim 2024.[6] Installed and practical overall production decreased by *** percent during 2021 to 2023 and was lower by *** percent in interim 2024 than in interim 2023. Utilization rates also decreased, with installed overall rates decreasing by *** percentage points from 2021 to 2023 and were lower by *** percentage points in interim 2024 than in interim 2023. Practical overall utilization rates decreased by *** percentage points from 2021 to 2023 and was lower by *** percentage points in interim 2024 than in interim 2023.[7] During 2021 to 2023, producers in China decreased their practical CAPEs capacity by *** percent which was lower by *** percent in interim 2024 than in interim 2023. Practical CAPES production decreased by *** percent from 2021 to 2023 and was lower by *** percent in interim 2024 than in interim 2023. Practical utilization decreased by *** percentage points from 2021 to 2023 and was lower by *** percentage points in interim 2024 than in interim 2023.

[6] Decreased capacity was driven by *** and ***. *** reported in their questionnaire that declines were mainly the result of decreased orders.

[7] Data from responses to the final phase of the Commission questionnaires showed that Chinese producers' utilization rates were lower than previously identified in the preliminary phase of these investigations.

Table 7.5 CAPEs: Producers installed and practical capacity and production on the same equipment as in-scope production in China, by period

Capacity and production in metric tons; utilization in percent; Interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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.

Constraints on capacity

Table 7.6 presents Chinese producers' reported capacity constraints since January 1, 2021, by firm and type of constraint. *** Chinese producers reported production constraints in China between 2021 and 2023, including existing labor force, supply of material inputs, storage capacity, logistics/transportation, and other constraints.[8]

Table 7.6 CAPEs: Producers in China reported constraints to practical overall capacity since January 1, 2021, by constraint and firm

Item	Firm: narrative response regarding reported capacity constraints
Existing labor force	***
Supply of material inputs	***
Storage capacity	***
Logistics/transportation	***
Other constraints	***
Other constraints	***

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

[8] Compiled from data submitted in response to Commission questionnaires.

Operations on CAPEs

Table 7.7 presents information on the CAPEs operations of the responding producers/exporters in China. As discussed above, foreign producers from China reported declining aggregate capacity and production during 2021 to 2023 and interim 2023 and interim 2024. However, they also projected an increase in capacity of *** percent in 2024 and 2025.[9] Aggregate CAPEs production decreased by *** percent from 2021 to 2023 and is estimated to slightly decrease by *** percent between 2023 and 2024 and decrease *** percent between 2024 and 2025. Home market shipments declined by *** percent from 2021 and 2023 and are projected to decrease *** percent between 2023 and 2024 and increase by *** percent between 2024 and 2025.[10] Exports to the United States decreased *** percent from 2021 and 2023 and are projected to increase by *** percent between 2023 and 2024 and by *** percent between 2024 and 2025.[11] Exports to all other markets decreased by *** percent from 2021 to 2023 and are expected to increase by *** percent in 2024 and slightly decrease by *** percent in 2025.[12]

[9] Only *** and *** reported capacity projections for 2024. Because *** foreign producers reported projected capacity projections for 2025, staff estimated similar projections as reported in 2024.

[10] One foreign producer, ***, reported projected home market shipments to increase *** percent in 2024 and *** percent in 2025. Because only *** reported projected home market shipment data for 2025, staff estimated 2025 home market shipment data for the *** foreign producers that reported home market shipments.

[11] Data on industry in China was not received from ***. *** did not report production projected data for 2025.

[12] *** did not report projected data for exports to all other markets for 2025. Staff estimated that *** would have no projected increase for exports to all other markets in 2025.

Table 7.7 CAPEs: Data on industry in China, by item and period

Quantity in metric tons; Interim period is January through September

Item	2021	2022	2023	Interim 2023	Interim 2024	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.

Table 7.7 (Continued) CAPEs: Data on industry in China, by item and period

Shares and ratios in percent; Interim period is January through September

Item	2021	2022	2023	Interim 2023	Interim 2024	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	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Share of total exports to the U.S. exported by producers	***	***	***	***	***	***	***
Share of total exports to the U.S. exported by resellers	***	***	***	***	***	***	***
Adjusted share of total shipments exported to the United States	***	***	***	***	***	***	***

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 “— “.

Alternative products

As shown in table 7.8, one responding firm in China (***) produced other products on the same equipment and machinery used to produce CAPEs. CAPEs accounted for *** percent of total production on the same equipment as other products in 2023, up from *** percent in 2021. *** responding producer in China reported being able to shift production between CAPEs and other products.

Table 7.8 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; Interim period is January through September

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
CAPEs	Quantity	***	***	***	***	***
Other products	Quantity	***	***	***	***	***
All products	Quantity	***	***	***	***	***
CAPEs	Share	***	***	***	***	***
Other products	Share	***	***	***	***	***
All products	Share	100.0	100.0	100.0	100.0	100.0

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

Exports

According to GTA, the leading export markets for aromatic phosphoric acid from China are the United States, Netherlands, and South Korea (table 7.9). 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 7.9 Aromatic phosphoric esters and their salts, including lactophosphates; their halogenated, sulfonated, nitrated, or nitrosated derivatives: Exports from China, by destination market and 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
Mexico	Quantity	8,863	4,683	8,052
All other destination markets	Quantity	82,643	79,989	77,503
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
Mexico	Value	35,880	17,227	20,898
All other destination markets	Value	299,258	251,422	170,941
All destination markets	Value	952,132	686,599	531,573

Table continued.

Table 7.9 (Continued) Aromatic phosphoric esters and their salts, including lactophosphates; their halogenated, sulfonated, nitrated, or nitrosated derivatives: Exports from China, by destination market and period

Unit values in dollars per metric ton; shares 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
Mexico	Unit value	4,048	3,679	2,595
All other destination markets	Unit value	3,621	3,143	2,206
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
Mexico	Share of quantity	3.0	1.8	2.8
All other destination markets	Share of quantity	27.7	30.1	27.4
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 January 27, 2025.

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 7.10 presents data on U.S. importers' reported inventories of CAPEs. U.S. importers' end-of-period inventories of imports from China decreased steadily by *** percent from 2021 to 2023. In contrast, ending inventories were higher in interim 2024 by *** percent compared to interim 2023. The ratio of ending inventories to imports from China declined by *** percentage points between 2021 and 2023 and was lower by *** percentage points in interim 2024 than in interim 2023. The ratio of inventories to U.S. shipments of imports from China decreased by *** percentage points between 2021 and 2023 and was lower by *** percentage points in interim 2024 compared to interim 2023. Similarly, the ratio to total

shipments of imports from China declined by *** percentage points from 2021 to 2023 and was lower by *** percentage points in interim 2024 than in interim 2023. U.S. importers reported small amounts of inventories in 2021 and 2023 from nonsubject sources and *** for 2022. Therefore, ending inventories' trends from all sources are similar to those of subject sources.

Table 7.10 CAPEs: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in metric ton; ratio in percent; interim period is January through September

Measure	Source	2021	2022	2023	Interim 2023	Interim 2024
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 sources	***	***	***	***	***
Ratio to imports	Nonsubject sources	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject sources	***	***	***	***	***
Ratio to total Shipments of imports	Nonsubject sources	***	***	***	***	***
Inventories quantity	All import sources	***	***	***	***	***
Ratio to imports	All import sources	***	***	***	***	***
Ratio to U.S. shipments of imports	All import sources	***	***	***	***	***
Ratio to total Shipments of imports	All import sources	***	***	***	***	***

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 September 30, 2024. Their reported data are presented in table 7.11. Fifteen of the 23 reporting importers from China indicated they had arranged imports from subject sources. By comparison, only one importer, ***, arranged for imports from nonsubject sources through Q1 2025.

Table 7.11 CAPEs: U.S. importers' arranged imports, by source and period

Quantity in metric tons

Source	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Total
China	***	***	***	***	***
Nonsubject 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.[13] 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. The anti-subsidy investigation was terminated on July 11, 2024.[14] On September 12, 2024, the EC imposed definitive anti-dumping duties ranging from 53.1 percent to 68.4 percent *ad valorem* for participating companies and 68.4 percent *ad valorem* for all others.[15]

Information on nonsubject countries

Table 7.12 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.[16] ICL is the only producer of TDCP in the EU.[17]

[13] Pet. Vol 1 exh. 1-3A; Conference transcript, p. 15 (Symes).

[14] Commission Implementing Decision (EU) 2024/1900 of 11 July 2024 terminating the anti-subsidy investigation concerning imports of certain alkyl phosphate esters originating in the People's Republic of China, https://eur-lex.europa.eu/eli/dec_impl/2024/1900/oj.

[15] Commission Implementing Regulation (EU) 2024/2415 of 12 September 2024 imposing a definitive anti dumping duty and definitively collecting the provisional duty imposed on imports of certain alkyl phosphate esters originating in the People's Republic of China, https://eur-lex.europa.eu/eli/reg_impl/2024/2415/oj.

[16] Conference transcript, pp. 34 and 60 to 61 (Symes); Petitioner's postconference brief, p. 18.

[17] Conference transcript, pp. 34 and 60 to 61 (Symes).

Table 7.12 Aromatic Phosphoric Esters And Their Salts, Including Lactophosphates; Their Halogenated, Sulfonated, Nitrated, Or Nitrosated Derivatives: Global exports, by reporting country and by period

Quantity in metric tons; value in 1,000 dollars

Exporting country	Measure	2021	2022	2023
United States	Quantity	11,965	8,367	6,860
China	Quantity	298,447	265,963	282,834
Germany	Quantity	49,100	27,754	23,429
Netherlands	Quantity	26,547	21,464	17,190
Japan	Quantity	14,821	9,444	6,156
Poland	Quantity	5,865	4,076	3,640
Spain	Quantity	5,863	6,816	3,656
Taiwan	Quantity	4,390	5,464	5,403
Italy	Quantity	4,201	6,061	6,554
Belgium	Quantity	3,354	3,394	2,950
United Kingdom	Quantity	1,987	1,477	1,600
India	Quantity	1,729	1,652	2,056
All other exporters	Quantity	9,687	6,866	9,032
All reporting exporters	Quantity	437,956	368,798	371,360
United States	Value	58,312	54,174	45,983
China	Value	952,132	686,599	531,573
Germany	Value	196,527	153,889	108,698
Netherlands	Value	95,200	76,713	55,761
Japan	Value	91,400	67,596	48,376
Poland	Value	18,764	12,098	8,730
Spain	Value	19,439	20,950	8,586
Taiwan	Value	18,836	23,389	16,166
Italy	Value	30,989	44,037	47,183
Belgium	Value	18,739	19,483	16,461
United Kingdom	Value	11,281	9,318	9,147
India	Value	11,864	17,644	23,104
All other exporters	Value	65,213	61,130	69,573
All reporting exporters	Value	1,588,695	1,247,019	989,341

Table continued.

Table 7.12 (Continued) Aromatic Phosphoric Esters And Their Salts, Including Lactophosphates; Their Halogenated, Sulfonated, Nitrated, Or Nitrosated Derivatives: Global exports, by reporting country and by period

Unit values in dollars per metric ton; shares in percent

Exporting country	Measure	2021	2022	2023
United States	Unit value	4,874	6,475	6,703
China	Unit value	3,190	2,582	1,879
Germany	Unit value	4,003	5,545	4,639
Netherlands	Unit value	3,586	3,574	3,244
Japan	Unit value	6,167	7,158	7,858
Poland	Unit value	3,199	2,968	2,398
Spain	Unit value	3,316	3,074	2,348
Taiwan	Unit value	4,291	4,281	2,992
Italy	Unit value	7,376	7,266	7,199
Belgium	Unit value	5,587	5,741	5,580
United Kingdom	Unit value	5,678	6,309	5,717
India	Unit value	6,862	10,680	11,237
All other exporters	Unit value	6,732	8,903	7,703
All reporting exporters	Unit value	3,628	3,381	2,664
United States	Share of quantity	2.7	2.3	1.8
China	Share of quantity	68.1	72.1	76.2
Germany	Share of quantity	11.2	7.5	6.3
Netherlands	Share of quantity	6.1	5.8	4.6
Japan	Share of quantity	3.4	2.6	1.7
Poland	Share of quantity	1.3	1.1	1.0
Spain	Share of quantity	1.3	1.8	1.0
Taiwan	Share of quantity	1.0	1.5	1.5
Italy	Share of quantity	1.0	1.6	1.8
Belgium	Share of quantity	0.8	0.9	0.8
United Kingdom	Share of quantity	0.5	0.4	0.4
India	Share of quantity	0.4	0.4	0.6
All other exporters	Share of quantity	2.2	1.9	2.4
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 January 27, 2025.

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
89 FR 49905, June 12, 2024	*Alkyl Phosphate Esters From China; Determinations*	https://www.govinfo.gov/content/pkg/FR-2024-06-12/pdf/2024-12876.pdf
89 FR 55585, July 5, 2024	*Certain Alkyl Phosphate Esters From the People's Republic of China: Postponement of Preliminary Determination in the Countervailing Duty Investigation*	https://www.govinfo.gov/content/pkg/FR-2024-07-05/pdf/2024-14760.pdf
89 FR 76087, September 17, 2024	*Certain Alkyl Phosphate Esters From the People's Republic of China: Postponement of Preliminary Determination in the Less-Than-Fair Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2024-09-17/pdf/2024-21087.pdf
89 FR 80870, October 4, 2024	*Certain Alkyl Phosphate Esters From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2024-10-04/pdf/2024-22940.pdf

Citation	Title	Link
89 FR 96223, December 4, 2024	*Certain Alkyl Phosphate Esters From the People's Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2024-12-04/pdf/2024-28397.pdf
89 FR 103877, December 19, 2024	*Alkyl Phosphate Esters From China; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-12-19/pdf/2024-30170.pdf
90 FR 17373, April 25, 2025	*Certain Alkyl Phosphate Esters From the People's Republic of China: Final Affirmative Countervailing Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2025-04-25/pdf/2025-07132.pdf
90 FR 17404, April 25, 2025	*Certain Alkyl Phosphate Esters From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2025-04-25/pdf/2025-07131.pdf

APPENDIX B

FEDERAL REGISTER NOTICE: CANCELLATION OF HEARING

mandatory. The filing of forms ONRR–4292 and ONRR–4293, and the submission of solid minerals and geothermal resource information that do not have an ONRR form, are required to obtain or retain a benefit.

Frequency of Collection: Monthly, annually, and on occasion.

Estimated Annual Non-Hour Cost Burden: ONRR has identified no ''non-hour'' cost burden associated with the collection of information.

An agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

The authority for this action is the PRA (44 U.S.C. 3501 *et seq.*).

Howard Cantor,

Director, Office of Natural Resources Revenue.

[FR Doc. 2025–06322 Filed 4–11–25; 8:45 am]

BILLING CODE 4335–30–P

INTERNATIONAL TRADE COMMISSION

[Investigation Nos. 701–TA–721 and 731–TA–1689 (Final)]

Alkyl Phosphate Esters From China; Cancellation of Hearing for Antidumping and Countervailing Duty Investigations

AGENCY: United States International Trade Commission.

ACTION: Notice.

DATES: April 8, 2025.

FOR FURTHER INFORMATION CONTACT: Celia Feldpausch (202) 205–2387 and Laurel Schwartz (202) 205–2398, Office of Investigations, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (*https://www.usitc.gov*). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *https://edis.usitc.gov.*

SUPPLEMENTARY INFORMATION: On December 4, 2024, the Commission established a schedule for the final phase of antidumping and countervailing duty investigations (89 FR 103877, December 19, 2024). On April 4, 2025, counsel for ICL–IP America, Inc. (''ICL'') filed a request to appear at the hearing. No other parties submitted a request to appear at the hearing. On April 7, 2025, counsel for ICL withdrew its request to appear at the hearing. Counsel also indicated that they would respond to any written questions from the Commission, as appropriate, in posthearing briefs. Consequently, the public hearing in connection with these investigations, scheduled to begin at 9:30 a.m. on Thursday, April 10, 2025, is cancelled. Parties to these investigations should respond to any written questions posed by the Commission in their posthearing briefs, which are due to be filed on April 17, 2025.

For further information concerning these investigations see the Commission's notice cited above and the Commission's Rules of Practice and Procedure, part 201, subparts A and B (19 CFR part 201), and part 207, subparts A, D, E, and F (19 CFR part 207).

Authority: These investigations are being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to § 207.21 of the Commission's rules.

By order of the Commission.

Issued: April 8, 2025.

Lisa Barton,

Secretary to the Commission.

[FR Doc. 2025–06267 Filed 4–11–25; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–1407]

Certain Eye Cosmetics and Packaging Therefor; Notice of Commission Final Determination; Issuance of a Limited Exclusion Order; Termination of Investigation

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission (''Commission'') has determined to issue a limited exclusion order (''LEO'') barring entry of certain eye cosmetics and packaging therefor that are imported by or on behalf of the following respondents previously found in default: Kaibeauty of Taipei City, Taiwan; I'll Global Co., Ltd of Seoul, South Korea; Hikari Laboratories, Ltd. of Bnei Atarot, Israel; and Kelz Beauty of Budapest, Hungary (collectively, ''the Defaulting Respondents''). The investigation is terminated.

FOR FURTHER INFORMATION CONTACT: B. Rashmi Borah, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436, telephone (202) 205–2518. Copies of non-confidential documents filed in connection with the investigation may be viewed on the Commission's electronic docket (EDIS) at *https://edis.usitc.gov*. For help accessing EDIS, please email *EDIS3Help@usitc.gov*. General information concerning the Commission may also be obtained by accessing its internet server at *https://www.usitc.gov*. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205–1810.

SUPPLEMENTARY INFORMATION: On July 16, 2024, the Commission instituted the present investigation based on a complaint, as supplemented, filed by Amarte USA Holdings, Inc. of Redding, California (''Complainant''), alleging violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337 (''section 337''), due to the importation into the United States, sale for importation, or sale in the United States after importation of certain eye cosmetics and packaging thereof that allegedly infringe U.S. Trademark Registration No. 4,328,655 (''the Asserted Trademark''), as well as unfair competition and false advertising, the threat or effect of which is to destroy or substantially injure an industry in the United States. 89 FR 57942–43 (July 16, 2024). The complaint alleges that a domestic industry exists. The notice of investigation names, in addition to the Defaulting Respondents, the following respondents: Bourne & Morgan Ltd. of London, United Kingdom (''Bourne & Morgan''); Iman Cosmetics of London, United Kingdom (''Iman Cosmetics''); MZ Skin Ltd. of Hertfordshire, United Kingdom (''MZ Skin''); Strip Lashed of South Yorkshire, United Kingdom (''Strip Lashed''); and Unilever PLC of Merseyside, United Kingdom, Unilever United States, Inc. of Englewood Cliffs, New Jersey, and Carver Korea Co., Ltd. of Seoul, South Korea (collectively, ''Unilever''). The Office of Unfair Import Investigations (''OUII'') is also named as a party to the investigation.

The Commission partially terminated the investigation as to the non-defaulting respondents based on settlement agreements, consent orders, or withdrawal of the complaint. *See* Order No. 9 (Sept. 6, 2024), *unreviewed by* Comm'n Notice (Oct. 7, 2024)

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; Productivity=metric tons per 1,000 hours; Period changes=percent--exceptions noted; Interim period is January through September

	Reported data					Period change comparisons			
	Calendar year			Interim		Calendar year			Interim
Item	2021	2022	2023	2023	2024	2021–23	2021–22	2022–23	2023–24
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 (see source note for methodology details) 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)	***	***	***	***	***	▲***	▲***	▲***	▼***
Production workers	***	***	***	***	***	▼***	▼***	***	***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	***	***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▲***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▼***	▲***
Productivity	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▲***

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; Productivity=metric tons per 1,000 hours; Period changes=percent--exceptions noted; Interim period is January through September

	Reported data					Period change comparisons			
	Calendar year			Interim		Calendar year			Interim
Item	2021	2022	2023	2023	2024	2021–23	2021–22	2022–23	2023–24
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 in response to Commission questionnaires and from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2919.90.5050, accessed January 24, 2025. Official statistics were adjusted to remove out-of-scope imports using proprietary, Census-edited Customs records using HTS statistical reporting number 2919.90.5050 for firms that certified they do not import CAPEs, accessed February 11, 2025, as well as using data submitted in response to Commission questionnaires to add in imports of CAPEs entered in under other HTS numbers and to remove imports of out-of-scope products imported under the primary HTS numbers. Imports are based on the imports for consumption data series. Import value data reflect landed duty-paid values. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 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

U.S. PRODUCERS', IMPORTERS', AND PURCHASERS'

REPORTED COMPARABILITY OF TCPP, TDCP, AND TEP

Table D.1 CAPEs: U.S. producers', importers', and purchasers' reported comparability: TCPP vs TDCP since January 1, 2021 by firm and type of constraint

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Physical characteristics	U.S. producers	***
TCPP vs TDCP: Physical characteristics	U.S. producers	***
TCPP vs TDCP: Interchangeability	U.S. producers	***
TCPP vs TDCP: Interchangeability	U.S. producers	***
TCPP vs TDCP: Channels	U.S. producers	***
TCPP vs TDCP: Manufacturing	U.S. producers	***
TCPP vs TDCP: Manufacturing	U.S. producers	***
TCPP vs TDCP: Perceptions	U.S. producers	***
TCPP vs TDCP: Perceptions	U.S. producers	***
TCPP vs TDCP: Price	U.S. producers	***
TCPP vs TDCP: Price	U.S. producers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Physical characteristics	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Interchangeability	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Channels	Importers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Channels	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Manufacturing	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Perceptions	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Price	Importers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Physical characteristics	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Interchangeability	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Channels	Purchasers	***
TCPP vs TDCP: Manufacturing	Purchasers	***
TCPP vs TDCP: Manufacturing	Purchasers	***
TCPP vs TDCP: Manufacturing	Purchasers	***
TCPP vs TDCP: Manufacturing	Purchasers	***
TCPP vs TDCP: Manufacturing	Purchasers	***
TCPP vs TDCP: Manufacturing	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***

Comparability: TCPP vs TDCP	Firm type	Firm name and narrative response on comparability: TCPP vs TDCP
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Perceptions	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***
TCPP vs TDCP: Price	Purchasers	***

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

Table D.2 CAPEs: U.S. producers', importers', and purchasers' reported comparability: TEP with scope and other products since January 1, 2021 by firm and type of constraint

Firm type	Product most comparable to TEP	Firm name and its narrative response on comparability
U.S. producers	TCPP	***
U.S. producers	TCPP	***
Importers	Not most similar to scope	***
Importers	Not most similar to scope	***
Importers	TCPP	***
Importers	Not most similar to scope	***
Importers	Not most similar to scope	***

Firm type	Product most comparable to TEP	Firm name and its narrative response on comparability
Importers	Not most similar to scope	***
Importers	TCPP	***
Importers	Not most similar to scope	***
Importers	Not most similar to scope	***
Importers	TCPP	***
Importers	TCPP	***
Importers	Not most similar to scope	***
Importers	TCPP	***
Importers	TCPP	***
Importers	None identified	***

Firm type	Product most comparable to TEP	Firm name and its narrative response on comparability
Importers	TCPP	***
Purchasers	Not most similar to scope	***
Purchasers	Not most similar to scope	***
Purchasers	Not most similar to scope	***
Purchasers	Not most similar to scope	***
Purchasers	TCPP	***
Purchasers	Not most similar to scope	***
Purchasers	Not most similar to scope	***
Purchasers	Not most similar to scope	***
Purchasers	TCPP	***
Purchasers	Not most similar to scope	***
Purchasers	Not most similar to scope	***
Purchasers	TCPP	***

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

Note: If company affirmatively indicated no knowledge of TEP in its narrative, its response was removed. Only shown are firms that provided a check box response as to the most comparable product to TEP, whether or not it then provided a narrative response to explain its checkbox response.

APPENDIX E

U.S. PRODUCERS' AND U.S. IMPORTERS' U.S. SHIPMENTS BY PRODUCT TYPE AND SOURCES

Table E.1 CAPEs: U.S. producers' U.S. shipments by product type and year

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton; share and ratio in percent; ratio represents the ratio to U.S. production

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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	100.0	100.0
TCPP	Ratio	***	***	***	***	***
TDCP	Ratio	***	***	***	***	***
TEP	Ratio	***	***	***	***	***
All product types	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 “—".

Figure E.1 CAPEs: U.S. producers' and U.S. importers' shipments for January 2021 through September 2024 aggregated

* * * * * * *

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

Note: The shares represent the share of the overall dataset (equivalent to the ratio calculations presented in tables E.1 through E.3)

Table E.2 CAPEs: U.S. importers' U.S. shipments of imports from China, by product type and year

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton; share and ratio in percent; ratio represents the ratio to U.S. production

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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	100.0	100.0
TCPP	Ratio	***	***	***	***	***
TDCP	Ratio	***	***	***	***	***
TEP	Ratio	***	***	***	***	***
All product types	Ratio	***	***	***	***	***

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

Table E.3 CAPEs: U.S. importers' U.S. shipments of imports from nonsubject sources, by product type and year

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton; share and ratio in percent; ratio represents the ratio to U.S. production

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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	100.0
TCPP	Ratio	***	***	***	***	***
TDCP	Ratio	***	***	***	***	***
TEP	Ratio	***	***	***	***	***
All product types	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 represents the ratio to overall U.S. shipments of both reporting U.S. producers and U.S. importers.

Table E.4 CAPEs: U.S. importers' U.S. shipments of imports from all sources, by product type and year

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton; share and ratio in percent; ratio represents the ratio to overall U.S. shipments of both reporting U.S. producers and U.S. importers

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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	100.0	100.0
TCPP	Ratio	***	***	***	***	***
TDCP	Ratio	***	***	***	***	***
TEP	Ratio	***	***	***	***	***
All product types	Ratio	***	***	***	***	***

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

Table E.5 CAPEs: Combined U.S. producers' U.S. shipments and U.S. importers' U.S. shipments of imports from all sources, by product type and year

Quantity in metric tons; value in 1,000 dollars; unit values in dollars per metric ton; share and ratio in percent; ratio represents the ratio to overall U.S. shipments of both reporting U.S. producers and U.S. importers

Product type	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	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	100.0	100.0
TCPP	Ratio	***	***	***	***	***
TDCP	Ratio	***	***	***	***	***
TEP	Ratio	***	***	***	***	***
All product types	Ratio	100.0	100.0	100.0	100.0	100.0

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